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THE FARMER'S MAGAZINE.

VOLUME THE NINETEENTH.

(SECOND SERIES.)

JANUARY TO JUNE, MDCCCXLIX.

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(SECOND SERIES.)

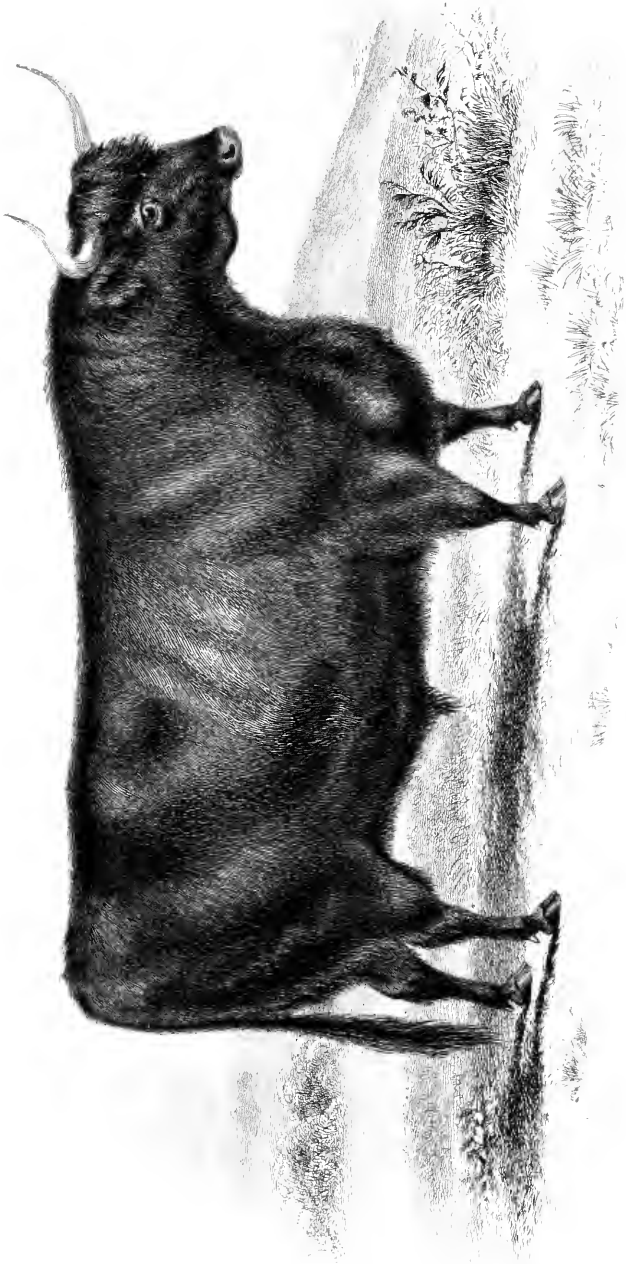
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THE FARMER'S MAGAZINE.

JANUARY, 1849.

No. 1.—VOL. XIX.]

[SECOND SERIES.

PLATE I. PORTRAIT OF EARL TALBOT.

ENGRAVED BY J. B. HUNT, FROM A PICTURE IN POSSESSION OF HIS LORDSHIP.

PLATE II. A WEST HIGHLAND BULL.

The subject of the second plate obtained the first prize of £20 at the Highland and Agricultural Society's Show, at Edinburgh, in August, 1848, and was then the property of Mr. Duncan M'Naughton.

Beyond the records of history the Highlands of Scotland have been occupied by vast herds of oxen, which have acquired the character suited to a country of high mountains and heaths. The finest and largest of the native cattle are bred in Argyleshire and the neighbouring islands. They owe this character to the greater development of their forms, to the superior herbage on the western coast, and likewise to the care bestowed on them at present in their breeding. Thus it is that the variety of the western Highlands is usually referred to as the models of the mountain breeds of that country.

The genuine west Highlanders may be distinguished by the following characteristics:—Their limbs are short, but muscular; their chests wide and deep; their ribs well arched, and their backs as straight as in any other breed; their neck and dewlap are somewhat coarse in the bull, but this is indicative of its mountain state; the horns should be of good length, without approaching to the coarseness of the long-horns, of the lower country, spreading and tipped with black; all the other points are what breeders call good. The breeders of the west Highlands wish to cultivate the black colour in breeding, as they think it indicative of hardiness, hence the greater number are of that colour.

EARL TALBOT.

The name of Talbot is one that has ever sounded well to the ear of an Englishman. From the time of the Conqueror we trace it on, reign after reign, and rarely to be found associated with anything but honour and renown for those who bore it. We think, in fact, it would be difficult to instance any family that stood higher in the estimation of the people for anything like the same lengthened period than that one it now becomes our purpose to refer to.

The uses of the good citizen and the example of the true nobleman have been different in different ages, as necessarily suited to the especial times in which they were exercised or afforded. With a young growing country, the supporter of mere

peace and plenty gave way before the dashing enterprising adventurer, who laid waste lands to make kingdoms, and who was ever willing to sacrifice the chance of comfort to the hope of power. With an empire scarcely established or defined, such a man was the monarch's great stay and trust; ever ready in his own person to enforce allegiance or increase dominion, the nobleman of our early history felt it his duty to watch and attend to remote portions of the country, rather than, perhaps, to give his time and care to the well-doing of his own people. The good citizen, in a word, merged into the good soldier; while his honours, though fairly fought for and hardly earned, brought more honour than benefit to the people that bestowed them.

OLD SERIES.]

But the story of Cincinnatus is quite as much that of a whole country as of a single individual; and the man, or the family, whose glory and duty it once was to devastate a tract of land, will gain even more honour now in cultivating it. The Talbot that Waverley shows us as the companion of the bold Baron of Bradwardine, or that James introduces with so much relish in his tales of our early times, will never outweigh the sober fact and useful aim that has marked the career of the Talbot we shall now proceed to.

Charles Chetwynd Chetwynd Talbot, Earl Talbot, Viscount Ingestrie, in the county of Stafford, and Baron Talbot, of Hensol, in the county of Glamorgan, a knight of St. Patrick, F.R.S. and F.S.A., was born on the 25th of April, 1777; and is now consequently in the seventy-second year of his age. He succeeded his father as second earl in the spring of 1793; and married, in August, 1800, Frances Thomasine, eldest daughter of Charles Lambert, Esq., of Beau Park, in the county of Meath. The Countess of Talbot (who died, generally lamented, in 1819) was the mother of the present Lord Ingestrie, the eldest surviving son of a large family.

In addition to the titles enumerated above, we may state that Earl Talbot is Lord-lieutenant of the county of Stafford; and also that he was nominated Viceroy of Ireland upon the retirement of the late Duke of Richmond—an office he filled for some time with every credit to himself, but to which it will not be necessary to make any further remark here.

“This branch of the ancient and illustrious house of Talbot,” says Mr. Burke, “is lineally descended from John Talbot, Esq., of Salwarp, grandson of Sir Gilbert Talbot, of Grafton, Knight-baronet, Knight of the Garter, and one of the most renowned warriors and statesmen of the era in which he lived—third son of John, second Earl of Shrewsbury, by his wife Lady Elizabeth Butler, daughter of James, Earl of Ormonde.”

In the direct line from this branch we have Charles Talbot; constituted Lord High Chancellor of England in 1773, and elevated to the peerage in the same year by the title of Baron Talbot of Hensol. The second title and estate of Ingestrie came into the family by the marriage of John, second son of the Lord Chancellor, with Catharine, eldest daughter and heiress of Viscount Chetwynd.

Few of our readers will require to be reminded how great an interest Lord Talbot has ever taken in agriculture, or how much his attention and example have succeeded in advancing it. The very best proof or incentive the man of great means and power can offer is in the judicious exercise of those

powers himself. Improved cultivation and improved kinds of stock have long been important themes for consideration with us; it is, however, *action* only that can see them properly carried out; and the way as well as the word ought, perhaps, in the first place to come from those the tenant farmer is taught to look up to. A landlord that begins improvement on his own account, not only shows his tenantry how it is to be accomplished, but brings, in a great measure, the means of doing so home to their own doors. From him they learn to look for the best breeds of cattle; in his they find the tested models for their implements, and the confirmed facts for their system. The noble owner who merely tells a district what room there is to advance, can expect little more effect from his counsel than mere words generally have. To do anything properly, as the philosopher found, he must do it himself; and we question much whether the friend to agriculture must not frame his endeavours on the same sound basis. The one captain who *told* his men to *go* along, and the other who *invited* them to *come* along, might never have better illustration than in the landlord who exhorts only, or exemplifies fully to the people he is placed in connection with.

With Lord Talbot the more practical “*come along*” has been the great point from the first. The vast improvements he at once commenced and gradually perfected on the land he held in his own occupation, have seldom been excelled. The best proof of the efficacy of what his lordship has attempted in ameliorating the soil is, after all, in that neighbourhood in which he has so employed his capital and energy. We have every reason for saying that no man could have a higher character as a practical farmer than Lord Talbot has in his own country; while none are so ready to admit the advantages he has reached as those who have been alike the first to observe, follow, and profit by them. Lord Talbot still farms about two thousand acres of land; to the cultivation of which we would refer as a fine instance of what a man may do who has means to support his views and judgment to direct them.

As a breeder of stock Lord Talbot's success has been even greater still; for many years his herd of Herefords, especially, had been looked upon from all quarters as almost unrivalled for its purity and excellence. Of this there is more immediate proof than could be well brought to the subject of cultivation; and the prize list of the Smithfield Club for many years in succession will bear witness how the picked judges of the kingdom confirmed the care and discrimination with which the Ingestrie produce had been reared. His lordship has equally distinguished himself at the exhibitions of the

Royal Agricultural Society; in support of which we need only state that he took four prizes for stock at the meeting held at Liverpool in 1841. In every way, too, has he deserved this; for beyond the unremitting attention given to the household, a heavy bidding never deterred his lordship from adding to them if he thought he could do so with advantage. The bull "Washington" he bought for £165; and at the sale of that celebrated breeder of Herefords, Mr. Price, he offered £145 for a cow: two facts that alone, we think, will show the spirit with which Lord Talbot has ever endeavoured to carry out his intentions.

Lord Talbot was equally distinguished for his breed of Leicester sheep, which he retained in all their purity up to a very recent period. The land, however, ultimately became too rich for a breeding farm; and the herd of Herefords and flock of Leicesters were consequently sold off.

We have not a list of the prices the sheep fetched by us; while of the cattle we see, though in anything but the best condition at the time, some of the bulls brought from forty to forty-five sovereigns each; and one cow, Tuberosa, reached fifty guineas.

Lord Talbot is a vice-president and life-governor of the Royal Agricultural Society of England; in the proceedings of which he has always evinced the highest interest, and to whose advance he has contributed some of the best and soundest support. It is, in fact, from the countenance and career of such men that agriculture will flourish. Men who are good landlords no less, if not because they are good farmers; and who are richly entitled to every honour we can pay them, from the advantages and example they have afforded in uniting power with practice.

REMARKS ON LAWES' PAPER ON AGRICULTURAL CHEMISTRY.

No. II.

BY A FARMER.

The remarks which were inserted in the "Farmer's Magazine" for November, on the above subject, have met with a very rough reception. The motives which induced the writer to make them have been called in question. Great weight has also been laid by Mr. Lawes, in his reply, on the signature assumed by the writer, by printing the word "Farmer" in italics; as if it were treason for a "farmer" to examine and criticise the information offered to him by such an important personage as Mr. Lawes, through the medium of the Journal of the Royal Agricultural Society; and great surprise seems to be felt that one of that humble class should be able to enter into the question at all. But the most heinous fault is, that Mr. Lawes' opponent is an anonymous one: Mr. Lawes himself seems to feel this very bitterly; for in the last number of the "Farmers' Magazine," in reply to the remarks of the previous month, he "threatens to leave the farmer to judge for himself, if ever his views are again assailed by an anonymous critic." To this judgment the writer will gladly leave the question, and will continue the signature assumed, because the only motive he has in this discussion is to ascertain the truth, and because his name would add no weight to his opinions; at the same time, "it is indeed to be wished that some one whose name is known, and whose character and opinions are respected, would come forward and

rescue the 'Farmer' from error and deception." (Mr. Lawes' reply.)

The only question really at stake is, What manures ought the farmer to purchase? In the December number of the Royal Agricultural Society's Journal, Mr. Lawes publishes a very long series of experiments, occupying nearly one-fourth of that valuable journal, in which he endeavours to settle the matter, and comes to the following conclusion, namely, that (see page 509) "even when in a condition of agricultural exhaustion, the supply of potash by direct manures seems unessential." At page 527 he says that his experiments "show that there was no advantage derived by the use of *alkaline* manures." At page 561 he says "that the artificial supply of alkalis can rarely, if ever, be advocated." At page 562 he says that "the export of potash from a farm is so small, that the quantity contained in one acre of turnips would not be entirely removed under twenty years;" and that "the alkalis, in whatever form we applied them, were always injurious to the vigorous growth of the young plant." This is part of the negative information derived from the experiments, and the only conclusion that can be drawn from such assertions is, that *Mr. Lawes considered alkalis an unnecessary, and sometimes an injurious, ingredient of artificial manures.* Against this the "Farmer" has ventured to express a different opinion, and will be

very happy to leave the subject to the following trial. He will purchase from Mr. Lawes or his agents the superphosphate he recommends (and which contains no alkalies), and the "Farmer" will procure a manure containing alkalies; the best crop and following crop to decide the question. In his reply Mr. Lawes says that he does not especially recommend the superphosphate of lime as the best manure for turnips. To this the writer can only reply by directing attention to the original article, and if it does not recommend superphosphate as superior to everything else, he is at a loss to get any meaning or sense from it. To the above test the "Farmer" will, in the first place, leave the dispute, and after examining Mr. Lawes' reply to the "remarks," will endeavour to show some additional reasons for his own opinion.

The first thing in the reply that requires notice is the evident soreness felt by Mr. Lawes. This may partly be attributed, as already remarked, to the fact of a farmer calling in question any opinion coming from such a source. The paper which led to this discussion is the third of a series on similar subjects; and as none of the others had been noticed, Mr. Lawes appears to have been taken quite aback at his masterpiece being criticised. Another reason for the soreness and temper displayed in the reply is, Mr. Lawes had evidently felt that the arguments of the "Farmer" were unanswerable, and that the truth which they exposed to view was anything but pleasant. Whether these conjectures are correct or not, such statements as the following can support no cause, namely, that Mr. Lawes' opponent is guilty of a "uniform and shameless avoidance of all the decencies of honest criticism," that his critic "has carefully laid his snares," and that he is "guilty of recklessness and audacity in his misrepresentations." Mr. Lawes is "at a loss to understand the state of mind, &c.;" the "Farmer" is also unable to understand "the state of mind" giving birth to the above language as anything else than one of extreme suffering and mortification. Even Mr. Lawes himself seems to think such expressions need an apology; for he makes a partial one, but qualifies it by saying that such an opponent deserves them.

Really, the "Farmer" must feel flattered; and it is almost worth inquiring whether the person who treats one of the class most interested in the question with so little courtesy is fit to enter into the discussion.

Mr. Lawes also endeavours to throw discredit on the "remarks," by intimating that the "Farmer" has an ulterior motive in this discussion. Perhaps he will be kind enough to prove it? The "Farmer" is a consumer of manures; and whilst even Mr. Lawes himself admits that, "connecte

as he is commercially with manures, his remarks must be received with great suspicion," does it, then, need any other motive than common sense to induce a consumer of manures to examine what reason a person "commercially connected" with them has for praising one kind and condemning another?

1st. It has already been pointed out that Mr. Lawes considers that alkalies are an unnecessary ingredient in artificial manures, and in his reply he endeavours to show (2nd) that in the original paper he recommends organic manures, such as rapecake, to be used along with superphosphate. He quotes the following sentence from his original paper (page 511), that "the mixture of mineral manures with organic gives the best result, as far as development was concerned." Why did he not give a little more from the same page, where he says that rapecake "*lessens both the weight of bulbs and number of plants.*" It is rather difficult to reconcile these two opinions.

Artificial manures may contain the following substances:—

- 1st. Phosphoric acid;
- 2nd. The alkalies, as potash and soda;
- 3rd. The earths, lime and magnesia;
- 4th. Organic matter, as rapecake.

(a) The latter, Mr. Lawes says, "*lessens both the weight of bulb and number of plants.*"

(b) Magnesia gave no increase of crop when tried along with superphosphate.

(c) Potash and soda have been shown by several quotations to be, in Mr. Lawes' opinion, unnecessary, and, like the rape-dust, always injurious to the young plant.

(d) There is then nothing left but phosphoric acid and lime, or *superphosphate*. It is in vain for Mr. Lawes to reply that he does not recommend this substance; for everything else is in some part of the report depreciated, and some evil from their use pointed out. It therefore becomes an interesting subject of inquiry, with which of the substances used as manures Mr. Lawes is "commercially connected."

The "Farmer" wishes it to be distinctly understood that he in no way depreciates the value of superphosphate, but that his opinion is, that no farm can be maintained in permanent fertility without the use of the alkalies *along with* superphosphate.

This then is a fair statement of the question at issue. We will now proceed to discuss Mr. Lawes and his defence.

Mr. Lawes' experiments are curious, inasmuch that the experimental turnips were grown for four or five successive years on the same soil. In commenting on the last year's growth, Mr. Lawes ad-

mits that the superphosphate, as well as all the others, gave a gradually decreasing crop year after year. Does not this show the justness of the "Farmer's" remark, that Mr. Lawes was not "justified in drawing such strong conclusions respecting the superior value of superphosphate," seeing that none of the other applications materially differed from it in this respect? And does it not also show that even the supply of superphosphate in four times the quantity ever used by a farmer was insufficient to maintain the permanent fertility of a field, which it should have done if it had been all the turnip plant required? The explanation the "Farmer" would give of this falling off is, that Mr. Lawes' field is but an exaggerated view of the ordinary farm. By removing the turnips every successive year, of course exhaustion must come sooner than on a farm; but still the cases are so far similar that they throw light on each other.

1st. An ordinary crop of turnips removes from the soil of one acre, according to Fresenius—

	lbs.
Potash	145
Soda	20
Lime	34
Magnesia	17
	—216
Phosphoric acid	21

Ten times the weight of alkalis that it does of phosphoric acid. The "Farmer" is at a loss to understand how Mr. Lawes could expect a continuation of good crops by the use of superphosphate alone, or even from his manures containing alkalis in equal proportions along with superphosphate, when we find that he has been removing both from the experimental field in the proportion of 10 to 1, and only adding them in equal. Again the farmer would ask, Is Mr. Lawes justified in his conclusions respecting alkalis from such experiments?

2nd. Such being undeniably the case with all fields from which all the turnips are pulled, Mr. Lawes endeavours to shift the ground of the argument by showing, in his reply, that the whole of these alkalis are restored to the soil in the course of the farm operations, and that still it is unnecessary to purchase any other manure than superphosphate. It is well known that it is universally the practice to apply all the artificial manure to the fallow crops; in the south of England barley follows, then clover, manured with farm-yard dung and sown with wheat. In this rotation suppose all the turnips pulled off, the barley and clover at least get no benefit from the supply of alkalis in the usual operations of the farm, because the farm-yard manure is not applied to the land until after they

are grown. We have shown that there is removed from an acre, by

	Phosphoric Acid.	Alkalies.
	lbs.	lbs.
The turnip crop	21	216
The barley in corn and straw) requires	38	110
The clover requires	36	468

In the turnip crop in the proportion of 10 to 1, in the barley 3 to 1, and in the clover 16 to 1!

Surely then no farmer can doubt the advantage of using alkalis along with superphosphate for his turnips when we see how much of them is removed in the following crops before any supply is given in "the operations of the farm."

3rd. This, then, is the position of a farm where the turnips are pulled off the land and consumed by cattle in folds. In the case of land where the turnips are consumed on the ground by sheep (which Mr. Lawes assumes to be nearly universally practicable), and where nothing is sold but beef, mutton, and grain, that gentleman again attempts to prove that no other manure is necessary than superphosphate. Let us first calculate the quantity of the various substances removed in the grain from a farm consisting of 100 acres of turnips (consumed on the premises); 100 acres of wheat, containing alkalis 16lbs., phosphoric acid 18lbs. per acre; 100 acres of clover (consumed on the premises); 100 acres of oats, containing alkalis 14lbs., phosphoric acid 10 lbs. per acre: or—

	Alkalies.	Phosphoric Acid.
	lbs.	lbs.
In the 100 acres of wheat	1,600	1,800
In the 100 acres of oats	1,400	1,000
	—3,000	—2,800

Here again we find that more alkali is removed than phosphoric acid.

4th. But Mr. Lawes also concludes that phosphoric acid is the only substance removed by fattening animals. The writer regrets that he is unable to ascertain the relative amount of the alkalis and phosphoric acid in the blood and flesh of our domesticated animals; but as Liebig has ascertained the presence of both potash and soda, the one in the flesh and the other in the blood, and as they are known to be present in bones, the total quantity removed from the soil by fattening and growing animals must be considerable, when we consider the weight of cattle removed from a farm every year.

The value of a crop of turnips may be estimated at £5 per acre; in other words, whether the sheep eat them on the ground or cattle consume them in the fold, there is for every acre £5 of increase value

in blood, flesh, and bones. Suppose this be reckoned at 6d. per lb., we have 200lbs. of bones, flesh, &c., removed by an acre of turnips. As a large portion of the hay is consumed by the work-horses, suppose we reckon it at only £2 per acre (or half its value), we have in like manner 80lbs. of beef or mutton removed from one acre; so that upon the farm of 400 acres, in addition to the 3,000lbs. of alkalies and 2,800lbs. of phosphoric acid in the grain, we have removed by the—

	lbs.	
100 acres of turnips	20,000	of beef or mutton.
100 ditto hay	8,000	ditto ditto

Total . . . 28,000 lbs.

The alkalies in this must be considerable, and the farmer would be obliged by Mr. Lawes informing him where he can ascertain the amount of them present. For the present leaving this part of the question, we shall confine our remarks to the amount removed in the grain, and absolutely lost to the farm. To supply the 3,000lbs. of alkalies in the way the farmer would recommend there would require to be purchased between three and four tons of the salts* of potash and soda; and to supply the 2,800lbs. of phosphoric acid suppose Mr. Lawes' superphosphate be calculated as containing 15 per cent. of phosphoric acid (which is much more than the average), it will require nearly eight tons to maintain the farm of 400 acres in permanent fertility, or about—

Alkaline salt . . .	$\frac{3}{4}$ cwt.	per acre.
Superphosphate . . .	$1\frac{1}{2}$ „	„
Total . . .	$2\frac{1}{4}$ „	„

And that, too, without ever calculating the amount present in the 28,000lbs. of beef and mutton.

Mr. Lawes says that the amount of potash, &c., present in the turnip may be removed in the course of twenty years. This differs from Fresenius, who shows that the cereals would remove it in about ten years. Suppose, however, we take the longer period, what must the condition of those farms be from whence the grain has been sold for centuries?

When pressed upon this subject, Mr. Lawes recommends that this deficiency should be made up by the purchase of rape and linseed. Has he ever calculated how much of these substances would be required to keep up the fertility—

Linseed contains about	1 per cent.	of alkali.
Rape say about	$3\frac{1}{2}$	ditto.

So that to supply the loss of 3,000lbs. of alkali, there would require 300,000lbs. = 130 tons of

linseed, or 45 tons of rape, instead of three or four tons of alkaline salts, as above recommended. Perhaps Mr. Lawes will be kind enough to point out one 400-acre farm in Great Britain which purchases 130 tons of linseed or 45 tons of rape.

It has been shown that Mr. Lawes was not justified in coming to such conclusions, even from his own experiments; and it is hoped that it is now made equally clear that he has failed to show by the review of the general operations of the farm, that superphosphate alone is sufficient to keep the farm in fertility—and that, too, under the most favourable circumstances; how must it then be when the turnips are removed, and hay sold as it is over many 1000 acres in England?

Another reason for adding the alkalies in a soluble state may be deduced from the nature of the turnip. It has been found that superphosphate (or soluble phosphoric acid) is a great improvement over the insoluble bones; and as the turnip is, of all the plants grown by the farmer, that which soonest arrives at maturity—sown in June and removed in November—it cannot be doubted that it must be of importance that all the other mineral ingredients be placed in the soil in a soluble state, more especially as we have shown that ten times the quantity of the latter are required. If soluble phosphoric acid be useful, so must soluble alkalies.

The only reply Mr. Lawes makes to the writer's assertion, that he was not justified in his conclusions from his experiments with alkalies, because he tried them along with bones, and in comparison with superphosphate, is, that it is a misprint, and that he meant to try them along with superphosphate. This is a nice way of getting out of it, and is his reply to that part of the discussion.

One extract more from the reply, and we have done:—"The next table," says Mr. Lawes, "is brought forward to test the whole by the cost of the application. The ignorance or wilful misguidance which has instigated the putting of the question in this attractive form before the farmer, whichever it be, is equally DESPICABLE in such as presume to be his monitor." It was the intention of the "Farmer" to have entered on this part of the question, as he has done the previous; but this paper is getting too lengthy, and he may surely say that "the state of mind" which could produce such language as the above is most unenviable, and is a sure sign of being utterly unable to answer the arguments brought forward to show that the superphosphates are not the cheapest turnip producers. We repeat this conclusion, apologizing to Mr. Lawes for the presumption of a "farmer" questioning the dogmas, and exposing the ignorance, of one "commercially connected" with manures, and we here present the farmers with a

* Calculating them as containing 30 per cent.

† The linseed is given on the authority of Fresenius; the rape is an approximation.

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summary of the experiments showing weight applied, cost of application, &c., &c.—

Exp. No.	Weight applied.	Per cwt.	Cost of application	
			£	s
15.—1130 lbs. at	6s.	..	£3	5
16.—1040 „	4s.	..	1	17
17.—1290 „	14s.	..	7	15
18.—1156 „	6s.	..	3	2
21.—800 „	4s. 6d.	..	1	11

By means of such experiments—where the quantity applied varies between 7 cwt. and 11 cwt. the cost per cwt. varies between 4s. and 14s., and the cost per acre varies between £1 11s. and £7 15s.—does Mr. Lawes arrive at the conclusion as to which is the cheapest turnip producer; and I need scarcely say which he says is the best in this respect. It is the superphosphate applied at the rate of 7 cwt. per acre, and at 4s. 6d. per cwt., and it is compared with the alkaline mixture, No. 17, which is applied at the rate of 11 cwt. per acre, and at 14s. per cwt. Is this a fair trial? They should, at the least, have been tried at the same cost per acre. But Mr. Lawes says that he did not wish to ascertain which is the cheapest turnip producer; then why does he come to any conclusion on the matter? To a “farmer” it is the only part of the question at all interesting, and the writer thinks that Mr. Lawes’ attachment to the superphosphate has here led him off his guard. He first asserts that this is not his object, and then triumphantly says that even as a cheap turnip producer the superphosphate outstrips all its competitors. This conclusion we have shown to be drawn from very unfair comparison, and would undoubtedly be reversed if properly tried.

The writer quoted from Liebig in support of his opinion respecting the importance of alkali; also from the experiments (but without agreeing with them), of Mr. Alex. J. Main, as somewhat strangely arriving at the directly opposite opinion from Mr. Lawes, respecting the value of alkalies; and from Mr. Moffat’s paper on Turnip Culture, as having expressed a similar opinion to that maintained by the writer. The first, Mr. Lawes does not venture to gainsay; on the second he says he knows nothing, so the writer would recommend a perusal; and on the third, he says that Mr. Moffat’s “conclusions can easily be shown to be owing to fallacies, and not dependent on facts.” Mr. Lawes wishes for an opponent “acknowledged and creditable;” and yet, though Mr. Lawes’ conclusions are diametrically opposed to Mr. Moffat’s, he merely contents himself with saying that gentleman’s opinions are “fallacies,” but not a word of argument on the subject.

But it is time to conclude this part of the subject. The question is an important one: as Mr. Lawes

himself says, the point at issue is “Should artificial manures for the turnip crop contain alkalies or not?”

Mr. Lawes has endeavoured to show that they should not, first by experiment, and secondly by reasoning from the practice of agriculture. To this we have replied—first, that his experiment was not a fair one; secondly, that his conclusions were unwarranted even by his own experiments; thirdly, that they were contrary to the principles of agriculture; and fourthly, we have offered to leave the question to the test of experiment—as we are convinced of the correctness of our own views. As far as possible we have avoided “presumption” or anything “despicable” in the discussion; always remembering that our position is a “farmer,” and that our opponent is Mr. Lawes!

Besides Mr. Lawes, the writer has met another opponent in the Editor of the *Farmer’s Journal*. This defender of Mr. Lawes himself admits, as we have endeavoured to show, that Mr. Lawes “pushes his deductions too far.” From this the editor passes on through a series of arguments not much unlike Mr. Lawes, and to which we shall not again reply, and perhaps would scarcely have entered into the controversy, more especially as the editor says “he does not care who is right or who is wrong.” Unfortunately for himself, in his zeal for the question, he makes a slight mistake in chemistry, which, if pointed out to him, may perhaps save him a little blush some other time.

One of the arguments used by the writer against Mr. Lawes, in the November No. of the *Farmer’s Magazine*, is, that the mixture in which he tested the value of alkalies really contained none, as such. This the editor of the *Farmer’s Journal* undertakes to prove is incorrect, in the following paragraph. He says that 400 lbs. of bones consist of—

“ Phosphate of lime	290 lbs., or 90 lbs. of lime,	
		and 200 lbs. of phosphoric acid.
Lime	38	
Sulphate of lime,		
&c	72	
	400 lbs.	

“ Now, the first effect of the mixture of the acid with this will be to charge one-half of this lime with double its quantity of phosphoric acid, or 45 lbs. of lime will unite with 200 lbs. of acid. The total lime that will be left for the action of the sulphuric acid will therefore be 83 lbs. This will unite with 119 lbs. of sulphuric acid, and form sulphate of lime. There will then be left 281 lbs. of acid, which will unite with 224 lbs. of soda; and assuming the soda-ash was anything like pure, there would be 91 lbs. of soda left as free alkali.

Now, as a four-course rotation does not carry off more than 54 lbs. soda, as much free alkali was added by Mr. Lawes as would supply all the crops for eight years, so that Mr. Lawes might properly call this experiment a trial of the alkalies."—(*Farmer's Journal*, Nov., 18).

The writer is at a loss to know whence the above composition of bones has been procured, as it is very incorrect. It is, however, to the composition of the 290 lbs. of phosphate of lime that we would direct attention: it is not a compound of

90 lbs. lime
200 phosphoric acid
—————
290

but a compound of 145 lbs. lime

145 phosphoric acid
—————
290

And furthermore, the editor, in his innocence of soda-ash, calculates it as pure soda; whereas, the very best only contains 50 per cent., and the writer is much deceived if that sold for agricultural purposes contains more than 30 per cent. of real alkali. The editor makes out that when the 400 lbs. of bone-dust and the 420 lbs. sulphuric acid are mixed together, and then 315 lbs. of soda added, that there will be enough acid left to neutralize 224 lbs. of soda, leaving 91 lbs. free. This can scarcely happen when there is not more than 150 lbs. of free soda to begin with, and probably not so much.

Before making his "bow" to the editor, the writer thanks him for the notice he has taken of his paper, and assures him that though he may have confuted Mr. Moffat's opinion to his own satisfaction, as he has scarcely done so to the satisfaction of any one else, the writer will allow that gentleman's opinion to stand as corroborative of his own. Also, as the said editor seems to be rather oblivious as to the meaning of bone-dust, if he will send to any bone-mill he will soon find that bone-dust is not the animal matter of bones, but bones reduced to a state of powder! The editor, in conclusion, says, that "We know not who the writer T. L. C. may be—he calls himself a farmer." And why should he not call himself a farmer? It is really amusing to the writer to see how much the powers that be are startled at the idea of a farmer expressing his opinions.

There can be no one to whom the question of manures can be so important as the farmer, except it be the manufacturer: to the first, quality is the consideration; and to the second, cheapness. It was with a sincere and honest wish to procure information on this subject that induced the writer to question Mr. Lawes' conclusions and assertions;

and he must now, in conclusion, also thank that gentleman for his notice of the "Farmer's" Remarks. Mr. Lawes might justly have held himself excused from answering an anonymous attack: that he has done so can only be accounted for by supposing that Mr. Lawes felt himself uncomfortably situated when fairly exhibited to the farmers whom he intended to enlighten.

Mr. Lawes has, we believe, promised the infliction of another article on Agricultural chemistry. We are satisfied it will never see the light—the *Journal of the Royal Agricultural Society* will never again be disgraced with such worthless Scientific Information. Thanks to Mr. Lawes' reply, too much attention has now been directed to the matter: it will never happen again. Should, however, Mr. Lawes still persist in his intention, let him take the advice of a farmer for once. 1st, Don't *presume* to call his writings Agricultural Chemistry; 2ndly, Write common sense; 3rdly, Drop the use of the following favourite expressions, as they have no meaning. For instance:—"The climatic character of the season is not only in itself a resource, but an essential agent." Again, the words "agency and supply" are repeated so often that we begin to think that Mr. Lawes has got an idea into his head that some such process goes on in the soil as one "commercially connected with manures" would adopt if he had a "good supply" on hand; he would in such a case employ "agents" to assist him to dispose of his stock. The "Farmer" has heard of stimulating manures, but never of any substances acting in the capacity of bagmen before: it is a new and striking feature in agricultural chemistry. A little further on he again says:—"Were we to depend upon mere supply of constituents for *actual conversion into the substance of the plant*, we should expect that the farm-yard manure," &c., &c.; "but *agency* as distinguished from mere *supply*," &c. Again (page 509) he says:—"Agency as well as *supply* is an essential element; but the direct supply of phosphoric acid shows that it is both a *constituent* and an *agent*." It is to be observed that phosphoric acid is the only substance combining these two remarkable properties. The following sentence is perfect:—"The more the nitrogenous condition of manuring prevails over the carbonaceous, the more will vascularity, and the less will special deposition, be enhanced."

Was not the farmer correct when he said that Mr. Lawes' paper in many places rivalled the writings of the old alchemists in absurdity? But in the following he even exceeds himself:—"The highly vascular seed-forming turnip is to the less vascular bulb-forming one, as the well-conditioned breeding or working animal is to the stall fattening one." This is a nice specimen of agricultural che-

mistry, offered in the nineteenth century to farmers by the Royal Agricultural Society.

One quotation more. He says that under certain circumstances "there will be found not only the actual and fixed, but also the prospectively possible constituents; the latter as yet only in a vehicular condition, and little influenced by the selective and approximative powers of the organism." This would only be spoiled by comment.

To his brother farmers T. L. C. respectfully offers the above remarks; and requesting Mr. Lawes not to think them presumptive or despicable, he warns him, along with some others, that unless they mend their agricultural chemistry—

"There is a chiel among them takin' notes,
And FAITH he'll print them."

T. L. C.

ON THE PROPORTIONS IN WHICH LIME IS PRESENT IN DIFFERENT SOILS.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

It is a question of considerable importance to the practical farmer, to determine the proportion in which lime may beneficially exist in a soil. It is one on which widely different opinions are entertained; and yet it is on the correct determination of this that the extent either of lime or chalk to be employed must materially depend. It appears difficult indeed, at first sight, to reconcile the practice of some of the farmers of the great southern chalk formation—who very commonly, and beneficially, at once deepen their soils by ploughing to a depth of several inches below the thin surface soil, into, and turning up the chalk—with that of many of the north of England farmers, who have, by long repeated dressings with lime, rendered their lands less fertile; and who, in consequence, are too apt to believe that this is owing to the proportion of lime in the soil having gradually become too large. The extent to which chalk (carbonate of lime) exists in a soil, however, seems to bear a much less direct relation to its fertility than that of any other of the ordinary mineral substances of which all cultivated lands are composed. Davy long since gave the composition of several soils containing widely different proportions of carbonate of lime, yet were of well known fertility. Very recently Professor J. F. Johnston has directed his useful researches to the same question; and his papers on lime abound with the most valuable and practical observations (*Quar. Jour. Agri.*, 1848, p. 407). In alluding to the practice of ploughing into the substratum of chalk, to which I have before referred, he remarks:—"When from five to seven inches of pure chalk are brought up and mixed with an upper soil of only six inches deep, it is obvious that the quantity of carbonate of lime in the mixed soil must be very great. And since these soils so deepened become, under skilful management, more productive than before; it is obvious, therefore, that the presence of a very large proportion of car-

bonate of lime will not alone prevent any soil from yielding good crops."

Through the kindness of Mr. Hewitt Davis in sending me a portion of the surface soil of such a field near Croydon, I have found it to contain 41 per cent. of carbonate of lime, in the form of crumbled chalk. The natural soil of the plains of Athens in Greece, which produces *excellent crops of wheat*, but is liable when the dry season arrives to be covered over with a crust of saline matter which prevents its growing grass, was also analyzed by Professor Johnston, and found to contain very nearly as much lime as the chalk soil cultivated by Mr. Davis. "We conclude, therefore," adds the Professor, "that as much as two-fifths of the whole soil may consist of carbonate of lime, without its being by this cause rendered unproductive." The soil from Athens contained, per cent.—

Organic matter	5.75
Salts soluble in water (common salt and sulphate of soda)	0.20
Gypsum	0.18
Oxides of iron	2.91
Alumina	2.35
Carbonate of lime (finely divided limestone)	38.08
Carbonate of magnesia	0.73
Phosphate of lime	0.03
Siliceous matter	50.33

On the other hand, the proportion of carbonate of lime which some soils contain is remarkable for its smallness. Thus the rich marsh lands of Holstein and East Friesland were found by Sprengel to contain only the following amount per cent.:—

The soil of the marsh lands of Holstein, only	0.2
The salt marshes of East Friesland	0.6

But, as Professor Johnston very correctly adds, "many causes may contribute to furnish such soils with a constant supply of carbonate of lime, sufficient for all the demands of the crops they produce. The floodings to which these lands are subject, or

the supplies of water that are constantly brought into them from beneath, no doubt contribute in a considerable degree to the permanent richness of the soil they bear. When, therefore, the farmer attributes the evils of over-liming to the presence of any particular proportion of lime in the soil, he adopts a very natural, but a very erroneous, conclusion."

As I recently had occasion to remark in another agricultural periodical (Bell's Messenger), that this is not the real cause might be seen by a little calculation if the farmer only subtracted from the amount of lime applied to a soil: the proportion removed from it—first, by the crops; secondly, dissolved in the drainage waters; and lastly, the very considerable proportion abounding naturally in the most valuable cultivated soils; it would be seen that the amount of lime applied to a soil in a long course of years could hardly operate injuriously by causing an undue proportion in the soil of this ever essentially present earth. But the correctness of the conclusion does not rest upon mere calculation. Professor Johnston (Quar. Jour. Agri., 1848, p. 530) has in his own practical and scientific way shown by analysis, that certain "over-limed" soils do not owe their decreased fertility to the largeness of their proportion of lime. He describes these supposed effects in some portions of Scotland, on thin moorish soils, or on reclaimed peat, as apparent in rendering the land hollow to the tread, so much so that the foot sometimes sinks into it; the soil is open, light, and porous. Turnips and barley grow well upon it; oats and clover refuse to yield profitable returns. It is, in fact, too light and open for these last named crops, which require a certain degree of tenacity in the soil in which their roots are to fix themselves. "This condition of the soil," adds Professor Johnstone, "is usually ascribed to too large additions of lime being made, and the expression *over-limed* applied to land in this state seems to imply that too large a proportion of lime is still actually contained in it. With the view of ascertaining how far this is really the case, I procured from Ballindalloch, in Banffshire, several specimens of soil in this light, porous, over-limed condition, in which they were incapable of growing oats and clover. The following were the results of the analysis of 100 parts of three of the specimens—

	No. I.	No. II.	No. III.
Organic matter	10.29	9.54	5.65
Soluble salts	0.45	0.15	0.50
Oxides of iron	2.49	3.68	0.50
Alumina	1.71	2.54	1.11
Carbonate of lime	1.40	0.69	1.10
Oxide of manganese	—	0.72	—
Insoluble matter, chiefly sand	81.77	82.79	91.20

We see, then, that the largest proportion of carbonate of lime existing in these three specimens amounted to only 1.40 per cent., and in the lowest only 0.69. Now compare that with the analysis of good soil, and see in how much larger a proportion the lime is often found in them. For instance, let us refer to the analysis of the soil and subsoil of a very productive field at Sutton, in Norfolk, made by Professor Lyon Playfair (Jour. R. A. S., vol. 6, p. 577). He found in 100 parts of the surface soil—

Organic matter	2.43
Hydrate water	2.60
Carbonic acid	0.92
Sulphuric acid	0.09
Phosphoric acid	0.38
Silicic acid and silica	81.26
Peroxide of iron	3.41
Alumina	3.58
Lime	1.28
Magnesia	1.12
Potash	0.80
Soda	1.50
Chlorine	a trace
Loss on analysis	0.63
	<hr/>
	100.00

In the same proportion of the subsoil—

Organic matters free from ammonia	1.20
Hydrate water	2.60
Carbonic acid	0.04
Silica	82.55
Peroxide of iron	3.70
Lime	0.69
Magnesia	1.55
Alumina	4.48
Potash	0.60
Soda	1.10
Chlorine	1.26
Sulphuric acid	0.16
Phosphoric acid	a trace
Loss on analysis	0.07
	<hr/>
	100.00

This valuable Norfolk soil then contained 3.58 per cent. of lime, and even its subsoil 0.69 per cent.; but other rich soils contain carbonate of lime in much larger proportions. The soil at Sheffield Place, in Sussex, so remarkable for the growth of fine oaks, contained 3 per cent. In the fine wheat soils of West Drayton, in Middlesex, he found more than 10 per cent.

It is evident, then, that it is not the large proportion of lime which is added to the soil that causes those lands which are said to be over-limed to be impoverished. "The results of the analysis," observes Professor Johnston, when commenting upon the examination of the three specimens whose analysis we have given, "show that so far from the proportion of lime in the soil being excessive, it is

in reality deficient. The evil called over-liming is therefore, a mechanical, and not a chemical one. The extreme openness of the soil has been brought on by prolonged ploughing, and too frequent cropping with corn. An opposite procedure, therefore, must be adopted, and mechanical means employed, by which a gradual solidification may be effected. For the purpose several methods are to be recommended—such as eating off the turnips and clover with sheep. This method is, in fact, found to solidify it at Ballindalloch, so as to make it capable of bearing oats." And as the Professor says in another place, "One of the most injurious accompaniments of over-liming is the exhaustion of the land, which the application of lime in repeated doses for a succession of years has hitherto almost always produced. The frequent ploughing and liming have taken place in order to force from the land frequent crops of corn. While the land was becoming lighter, therefore, it was also becoming poorer, and the full results of over-liming arise out of the operation of these two causes conjoined. While, therefore, the steps above recommended are taken with the view of restoring the mechanical firmness, others no less necessary must be taken to bring back the chemical richness of the soil, before the highest fertility of which it is capable can be successfully secured. The ordinary way of applying the lime is to spread it on the surface of the land. This is not always the best mode. The application of lime to the soil in the state of compost, as with earth or peat, is commonly attended with very beneficial results. But it is a bad practice to add it to farm-yard manures or animal substances in general. As Davy long since remarked (*Elem. Ag. Chemistry*, p. 320), the operation of the lime is different in different cases, and depends upon the nature of the animal matter. Lime forms a kind of insoluble soap with oily matters, and then gradually decomposes them, by separating from them

oxygen and carbon; it always destroys to a certain extent the efficacy of animal manures, either by combining with certain of their elements or by giving to them new arrangements. "Lime should never," he continues, "be applied with animal manures, unless they are too rich, or for the purpose of preventing noxious effluvia." "On this point," continues Professor Johnston (*Quar. Jour.*, p. 512), "I add only one other observation. *Quick-lime* has the effect of disengaging and setting free the ammonia from guano, and from fermenting manures. It is a prudent, therefore, and a safer practice to apply the lime some short time before or after such manures have been laid upon the land. Where the soil is moist, and abounds in vegetable matter, there may not be much loss, should the lime and other manures come in contact beneath its surface; but in dry soils, and on the surface of the land, the admixture of the two ought to be carefully avoided. After the lime has been some time in or on the surface of the soil, and has become converted into carbonate of lime, it can exercise no injurious effect upon any kind of manure."

The results of these laborious examinations of the chemical philosopher, will be applied by the practical farmer in the way the great chemists I have referred to intended. It is an old observation, that the knowledge of a disease is more than half its cure; and such a remark well applies to the manifold difficulties, the many inexplicable phenomena, by which the farmer is so constantly encircled. To those who sometimes contend that science can afford the farmer but little aid, the subject of this little paper affords perhaps a sufficient answer. The results of the several chemical examinations it contains will surely serve to arouse the suspicions of even the most intense lover of entirely practical farming, that such unaided knowledge not seldom leads its owners to conclusions equally erroneous and profitless.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The December General Meeting of this Society took place on Saturday, 5th ult., at eleven o'clock, in the Society's House, Hanover-square. In the absence of the Earl of Chichester, the President of the Society, the Duke of Richmond was, on the motion of Mr. Raymond Barker, called to the Chair. Among the Members of the Society present, we observed the Earl of Yarborough, Col. Challoner, Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Shaw, Professor Simonds, &c., &c.

Mr. HUDSON, the Secretary of the Society, read the following Report from the Council:—

REPORT.

The Council have to report to the Members, on the occasion of their present December Meeting, that during the past half-year 44 of their Members have died, and 105 have ceased

to belong to the Society; while 154 new Members have been elected: so that the Society now consists of—

- 91 Life Governors,
- 181 Annual Governors,
- 661 Life Members,
- 5232 Annual Members, and
- 21 Honorary Members;

making a total of 6186 Members on the list of the Society at the present time.

The vacancy in the Council, occasioned by the lamented decease of Mr. Harvey, has been filled up by the election of Mr. John Hodgetts Foley, of Prestwood, M.P.

In order to meet the convenience of Members of Parliament, the day for the periodical Meetings of the Council has been changed from Wednesday to Tuesday.

The Council regret to inform the Society, that in consequence of the great amount of unpaid subscriptions, they have

been under the necessity of borrowing money of their bankers to meet the liabilities consequent upon the York Meeting; and, in order to prevent the recurrence of a similar inconvenience, they have empowered the Finance Committee to take immediate steps for obtaining the arrears, and for securing a more regular payment of subscriptions in future. With the same view, the Council have resolved, that henceforward no Journal shall be sent to any Member whose subscription for the year is unpaid at the time of publication; and that a list of those Members from whom any subscription shall be due on the Saturday next following the Monthly Meeting of the Council in August, shall be suspended in the Council Room, the names to be classed according to the Counties in which the Members reside, with the amount due from each placed opposite to his name. In the mean time, the Finance Committee are engaged in making an accurate investigation into the income and expenditure of the Society, with a view of reporting the result to the Council. The Council would further suggest to the Members generally, that it would greatly improve the financial position of the Society, and facilitate their proceedings, if all subscriptions were paid to the bankers on the 1st of January in each year, either by a general order to the bankers of the member, or by cheque or post-office order addressed to the Secretary. The Council offer to the members these suggestions with the greater confidence because they find, by their recent circular, that in a great majority of cases of arrear there is every willingness to meet the views and wishes of the Council on the subject.

The Council have the satisfaction of finding that the Treasury Regulation to which they alluded in their last report, for the transmission of books through the post-office directly to the parties addressed, is likely to prove an invaluable aid in the immediate and certain distribution of the Journal among the members, however remotely situated, and free of charge. The first issue of the Journal in August last, under these new regulations, has most satisfactorily proved their advantage.

The Country Meeting held at the City of York in July last has realised the most sanguine anticipations of the Council, in the amount and quality of the exhibition, in the success of the practical trials in the show-yard and in the field, and in the usual means of mutual interchange of opinion and detail of personal experience afforded by the assemblage of so large a number of visitors to that meeting from every part of the country. In addition to these favourable circumstances, the meeting was honoured by the presence of his Royal Highness Prince Albert, who both attended the meeting as a governor of the Society and graciously identified himself with its objects by evincing a lively interest in the whole of the proceedings. The Council, on leaving York, conveyed to the Lord Mayor and the Authorities of the city, and to the Local Committee, and others who had zealously co-operated with the Council in promoting the success of the meeting, an expression of their best acknowledgments for their kind exertions on the occasion. Although the receipts at the show-yard were very great, and £1,000 was liberally presented to the Society through the authorities of the city, the outlay required for so extensive an assemblage of implements and cattle, and for the elaborate and highly satisfactory trial of implements on the occasion, has proved so great that over and above the £1,383 awarded in prizes for implements and stock, the excess of expenditure over receipts on account of the York meeting amounts to £1,126, as will be seen by the following tabular statement, in which a comparison is instituted between the result of this and former meetings.

Year of Meeting.	Locality.	Entries of Stock.	Entries of Implements.	Receipts.	Expenditure.	Excess of Expenditure.
				£	£	£
1839.	Oxford	249	23	2394	2688	294
1840.	Cambridge	352	56	3416	3589	173
1841.	Liverpool	319	312	4106	5052	946
1842.	Bristol	510	455	4202	4775	573
1843.	Derby	730	508	3390	5090	1700
1844.	Southampton	575	948	4929	5736	807
1845.	Shrewsbury	437	912	3662	5166	1504
1846.	Newcastle	613	735	4119	4866	747
1847.	Northampton	459	1321	4565	4863	298
1848.	York	721	1508	4831	5957	1126

The Council have the gratification of reporting that the successful issue of the implement trials—a result so long desired but only imperfectly obtained at former meetings, was mainly owing to the untiring energy with which the Stewards of that department, the Judges, and the Consulting Engineer, acted in concert for the attainment of that great object, by bringing to the test of practical trial those recommendations of the Implement Committee, of which Colonel Challoner, as its Chairman, had reported on a former occasion to the Council. In order to give Mr. Thompson an opportunity of collecting the materials for his Report upon the Exhibition and Trial of Implements at York, for publication in the Society's Journal, Mr. Shaw, of Northampton, kindly undertook to act as an additional Steward of that department, and rendered to the Society services no less efficient than he had so willingly given at Northampton last year, in promoting the convenience of the Stewards of Implements on that occasion; and the Council have conveyed to him their best thanks accordingly. The Hon. Captain Dudley Pelham, R.N., has kindly undertaken, at the request of the Council, the duties of a Steward of the Implement Department, in the place of Mr. Shelley, who, after a long period of efficient service, retires this year by rotation. The Society are much indebted to Professor Johnston, of the University of Durham, and to Professor Simonds, of the Royal Veterinary College, for their kindness in delivering two valuable lectures before the Society, during the York meeting. On occasion of the present December meeting, Prof. Simonds has again favoured the Society by delivering before the members, in the rooms of the Society, two other highly valuable and interesting lectures.

The Council have already made their preliminary arrangements for the Country Meeting to be held next year at Norwich. From the facility of access to that city by sea, the rapidly extending railway accommodation throughout the eastern districts of England; from the character of the stock, and the high reputation of the agriculture in Norfolk and the adjacent counties—they have every reason to anticipate a meeting in no way second in importance to those that have preceded it. The Council have already voted prizes for the Essays, Implements, and Stock of next year, to the amount of nearly £2,000: of the two former of which the lists were published in the last Journal; while the Prize Sheet for the Live Stock was on Thursday last determined in accordance with the bye-laws, has since been printed, and now lies on the table for the information of members.

The Judges having expressed a desire for an extension of time for their trial of the implements, without entailing on the exhibitors any additional loss of time or expense, it has been found necessary to devote the whole of the Tuesday in the week of the Show to that important purpose. The first day of public admission to the implement yard will, consequently, be on Wednesday, the principal day of the Show being as heretofore on the Thursday. The public working of the implements in the field will therefore be omitted, it having been found by experience quite impossible to conduct that exhibition in a manner satisfactory either to the public or to the implement makers.

The Council have renewed for another year the grant for carrying on the analysis of the ashes of plants, a research which they fully believe will eventually lay the foundation for a secure progress in our knowledge of the conditions of vegetable growth, and the most economical and effective means of promoting it in our crops.

In conclusion, the Council have every reason to view with satisfaction the steady advancement of the Society in its sphere of usefulness, and its combining by its central influence the efforts of Societies of a kindred character throughout the kingdom, for agricultural improvement and the public good.

By order of the Council,

JAMES HUDSON, Secretary.

London, December, 1848.

The Report was, on the motion of Mr. Tweed, seconded by Mr. Wingate, unanimously adopted.

Mr. RAYMOND BARKER then read the following statement of the receipts and expenditure of the Society during the first half of the present year, and the special balance sheet of the York meeting account:—

I.—HALF-YEARLY ACCOUNT ENDING JUNE 30, 1818.

RECEIPTS.

Balance in the hands of the bankers, January 1, 1818.	£1106	3	1
Balance in the hands of the secretary, January 1, 1818.	35	11	5
Dividends on stock	156	0	2
Life composition of governor	50	0	0
Life compositions of members	180	0	0
Annual subscriptions of governors	610	5	0
Annual subscriptions of members	2061	7	0
Sale of Journal	165	16	9
Sale of cottage tracts	2	5	8
Fines for non-exhibition at the country meeting	11	15	0
Marquis of Downshire's addition to flax-prize.	50	0	0
Yorkshire Agricultural Society's advance on account of prize reports	100	0	0
Subscription from York towards the expenses of the country meeting of 1818.	1000	0	0
Amount of sums paid in error, or by parties unknown, to the Society's account with their bankers.	10	7	0
	£5549	11	1

PAYMENTS.

Purchase of stock	£742	0	0
Permanent charges	270	12	6
Taxes and rates	18	2	2
Establishment	528	4	4
Postage and carriage	20	6	5
Advertisements	4	12	0
Expenses of Journal	1462	2	9
Prizes	210	0	0
Payments during the half year, on account of the country meetings	692	8	11
Analyses of ashes of plants	280	0	0
Repayment of sums transmitted by bankers and others, in error	9	5	0
Amount of miscellaneous items of petty cash.	4	13	0
Balance in the hands of the bankers, on the 30th of June, 1818	1291	13	9
Balance in the hands of the secretary, on the 30th of June, 1818	12	10	3
	£5549	11	1

Examined, audited, and found correct, this 8th day of December, 1818.

(Signed) C. H. TURNER, } Auditors on the part of the
THOMAS KNIGHT, } Society.

(Signed) THOMAS RAYMOND BARKER, Chairman, } Finance
THOMAS AUSTEN, } Committee
C. B. CHALLONER, }
HENRY BLANSHARD, }

II.—SPECIAL COUNTRY MEETING ACCOUNT:

YORK, 1818.

RECEIPTS.

Subscription from York	£1000	0	0
Pavilion dinner tickets	513	10	0
Council dinner tickets	279	6	0
Show-yard receipts	2664	14	0
Sale of catalogues	365	14	6
Sale of council badges	7	15	0
Excess of payments over receipts on account of the York Meeting, chargeable on the General Fund of the Society	1126	8	7
	£5957	8	1

PAYMENTS.

Council dinner	£277	10	0
Pavilion dinner	519	0	0
Pavilion contract for works	671	5	0
Show-yard and trial of implements	3080	5	1
London police	231	10	0
Judges	337	0	0
Consulting engineer	46	15	0
Printing, &c., of catalogues	295	13	5
General printing	193	11	6
Stationery	20	12	5
Advertisements	173	4	5
Postage, carriage, and travelling expenses	35	16	6
Official staff charges	37	17	3
Porters in charge of rooms	3	3	0
Council badges	5	1	6
Fire Brigade	5	0	0
Extra clerks	2	2	0
Horses for police	1	1	0
	£5957	8	1

Signed,

THOMAS RAYMOND BARKER
C. B. CHALLONER.

The Earl of YARBOROUGH in moving that the Report of the Auditors be received and adopted, stated that he thought the expense of printing and publishing the Journal of the Society should be curtailed, if possible. He was duly sensible of the importance of the publication of the Journal, and fully appreciated the merits of that publication, but he thought that £1,162 2s. 9d., which was the cost of the Journal during the past half year, might, by a more judicious and economical arrangement, be considerably lessened (Hear, hear). Although it was impossible to over-estimate the advantages to the cause of agriculture, which were produced by the publication of the Journal, still it could not be denied that year after year the expense of that publication was increasing, and that the funds of the Society were continually drawn upon to pay for the expense of a publication which should from its circulation and the profits derivable from its sale, pay the expense of getting it up. He thought that while the members of the Society should receive the Journal free as heretofore, non-subscribers should be called upon to pay a higher rate for its purchase.

Colonel CHALLONER expressed his satisfaction that the noble lord had called the attention of the meeting to this important subject. As the Journal was at present published, non-subscribers had an advantage over subscribers, and received the Journal at a less cost than those who constituted and formed the Society. It was a subject deserving of the attention of the Society, and he hoped that arrangements would be made which, without deteriorating from the utility of the Journal, would enable the Council to give that publication the same circulation as at present, without its being a drawback on the funds of the Society.

Mr. RAYMOND BARKER stated that it should be borne in mind that 6000 copies of the Journal on each publication were printed for distribution among those members whose subscriptions to the Society were not in arrear. Although every care was taken to guard against a lavish expenditure of the funds of the Society, it had been found necessary to draw upon their permanent funds, so as to meet in advance the expense of the publication of their Journal. As the Journal was a matter in which the farmers of England were peculiarly interested, he trusted that while the expenditure was kept within reasonable limits, nothing would be done to impair its value to the members of the Society. As he was on the subject of finance, he might take the liberty of stating that although there appeared to be great

eagerness in certain localities to have cattle shows under the auspices of the Society, the localities benefited by such shows did not contribute their fair proportion of the expense. In proof of which he might mention, in reference to the show of the present year at York, that the Society was £1,120 out of pocket, besides giving 1,500 guineas for prizes. A considerable, and as he thought an unnecessary, part of the expense incurred at the country shows arose from advertising in the local papers. That expense was, in his judgment, in a great measure uncalculated and injudicious. If they gave publicity to their advertisements in the *Mark Lane Express* and other London and recognized agricultural organs, they could accomplish all that was necessary, and save much expense.

The Duke of RICHMOND said, that from the Report which had been read they learned that their expenditure exceeded their income; and, under these circumstances, it was their duty, as members of the Society, to act with the same caution which a private individual would be expected, and ought to do under similar circumstances, and that was, to reduce their expenditure so as to make it less than their income.

Mr. FISHER HOBBS stated that he considered the charge for the attendance of the police at the annual exhibition greatly beyond what was warranted or necessary.

Mr. RAYMOND BARKER was of opinion that it was necessary that the strictest possible precautions should be taken to protect the public, who attended at the shows, from plunder.

Mr. G. DYER thought the prizes offered by the Society for stock in many cases extravagant, as the object of competition was the honour of gaining the Society's prizes; but as the Journal could be read by all the members whether they were able to attend the Annual Country Meetings or not, in any particular year, he hoped that no expense would be spared to sustain its high character.

Mr. SHELLEY said that a very large proportion of the expense attending their country shows was absolutely necessary. It was essential that prize lists should be published, that programmes of the Society's intended mode of operation should be issued, that certificates should be published, and that information should be given to the exhibitors and the public as to the time and mode of conveyances to and from the show. In looking to the expense incurred for this object, the meeting should look at the necessary consequence and importance of the object rather than the mere result in figures.

Mr. FISHER HOBBS was glad that the subject of finance had been so prominently and specially brought under the consideration of the meeting, and he hoped that a beneficial result would ensue from the conversation which had taken place.

Mr. SHAW: It was an limited principle amongst men of business that attention should be given to small matters; inasmuch as such items, in the aggregate, made a large amount; and hence the importance of attending to the subject that had just been adverted to: but there was one very large amount to which no reference had been made, and which he considered deserving of the most serious attention of the society. He alluded to the expense of the show-yard, for which £3,000 was charged in the present year's account. He was much afraid that the implement yard was made a show-yard of, and not a yard for the exhibition of the most useful agricultural implements. It was almost impossible to go into any part of the country in which the Society's prizes for implements were not generally diffused; in fact, they were now so numerous as to detract from their value, and tended to bewilder, rather than to guide, the purchaser of implements; and he was of opinion that the Council ought to limit the number of prizes for implements, so that they might be good and few, and use greater discretion and caution in their award.

The Auditors' Report was then agreed to, and on the sug-

gestion of the noble Chairman, thanks were passed to the Auditors.

Upon the motion of Col. Challoner, Messrs. Knight and Turner were re-elected Auditors.

Mr. Raymond Barker having stated that Mr. Tawney, on account of the uncertainty of his state of health, could not any longer continue as one of the auditors, Mr. Trinder proposed that Mr. Robt. Beman, of Dunnington, in Gloucestershire, be appointed an Auditor in his stead.

This motion was unanimously agreed to.

The Earl of YARBOROUGH proposed that the thanks of the meeting should be tendered to Professors Simonds and Johnston for the able, important, and useful lectures which they delivered at the York meeting; and to Prof. Simonds, for those practical and interesting lectures with which he had favoured the Members, in the current week, on the occasion of their December Meeting.

After several of the gentlemen present had expressed their appreciation of the merits of the lectures of the two professors, the vote was agreed to.

Professor SIMONDS, for himself and Professor Johnston, acknowledged the compliment, and impressed upon the meeting the importance of paying attention to the information which could be communicated to agriculturists upon matters connected with veterinary science, more especially as to the nature and diseases of cattle, and their treatment and cure. He was quite sure that he might answer for Prof. Johnston and himself, as well as for the other individuals who had delivered lectures before the Members on the occasion of their periodical meetings, that if they could at any time by their humble means promote the great objects of the Society, they would at all times be most ready to do so. He anticipated much good from the course the Society was now taking, in reference to the application of veterinary science to domesticated animals. Time was required for every object to attain its perfection; and the Royal Veterinary College took those measures which in their opinion were wisest and best. He hoped that these lectures would show to the members of the agricultural community that science was not to be despised, and that a knowledge obtained by them of the structure and functions of their live stock would tend to acquaint them with the derangements that might at any time ensue, and enable them to judge with intelligence when the cases were such as to require the aid of the properly educated veterinary practitioner for their consideration.

The Earl of YARBOROUGH proposed, in an appropriate speech, the thanks of the meeting to the noble Duke who had presided in the absence of the Earl of Chichester.

Carried unanimously.

The Duke of RICHMOND, in acknowledging the vote, said that nothing gave him greater pleasure than to aid with his humble influence anything which tended to advance the interests of the farmers of England. His own interest was indissolubly connected with that of the farmer; and nothing gave him greater satisfaction than when he could contribute to the advancement of the cause of agriculture. He thought the Society had been of the greatest use to the country at large, and had promoted agricultural improvement to a great extent; and would, he fully believed, continue to do so, so long as it was supported as it had been by the practical farmers of the country. He thought the Journal of great importance, not only in circulating a knowledge of successful modes of culture, but also in making known those negative results which served an important end for the guidance of the agriculturist. He regretted that there was so large a sum of arrears due from the subscribers; but when they considered that many persons became members only for the purpose of dining with them, they would not be surprised that many of their subscribers did not keep up their annual subscriptions. He begged to thank them for the vote which they had passed, to compliment him upon the little which he had done. He regretted the absence of Lord Chichester, who he was sure had been unavoidably detained from the Meeting, as he knew it was his intention to be present.

The meeting then broke up.

A MONTHLY COUNCIL was held at the Society's House in Hanover-square, on Tuesday, the 5th of December: present, the Earl of Chichester, President, in the chair; Hon. Capt. Dudley Pelham, R.N.; Sir

Matthew White Ridley, Bart.; Col. Austen; Mr. Raymond Barker; Mr. S. Bennett; Mr. Blanshard; Mr. Bosanquet; Mr. Bramston, M.P.; Mr. Brandreth; Mr. Burke; Col. Challoner; Mr. F. C. Cherry; Mr. Garrett; Mr. Hamond; Mr. Hillyard; Mr. Fisher Hobbs; Mr. Chandos Hoskyns; Mr. Hudson (Castleacre); Mr. Jonas; Mr. Kinder; Mr. Milward; Prof. Sewell; Mr. Shaw (London); Mr. Shelley; Mr. Thompson; Mr. Thos. Turner; Prof. Way; and Mr. Jonas Webb.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the Report of that Committee to the end of the previous month, from which it appeared that the current cash balance in the hands of the bankers (less outstanding cheques not presented) was 558*l.* The Council adopted the recommendation of the Committee, for the sale of such a portion of the invested capital of the Society in the public funds as, with the current cash balance in hand, would pay off the loan of 1,500*l.* contracted with Messrs. Drummond in August last, for the purpose of meeting the claims then standing against the Society, and consequent on the York Meeting. The Council ordered the purchase of postage stamps to the value of 125*l.*, in readiness for the issue (postage free) of the new Part of the Journal, about to be published, to each Member of the Society not in arrear of his subscription.

On the motion of Mr. Shelley, seconded by Mr. Milward, the following resolution was unanimously agreed to: "That henceforward no Journal shall be sent to any Member whose subscription for the year is unpaid at the time of publication; and that a list of those Members from whom any subscription shall be due on the Saturday next following the Monthly Meeting of the Council in August, shall be suspended in the Council Room, the names to be classed according to the counties in which the Members reside, with the amount due from each placed opposite to his name."

Member of Council.—In the absence of Lord Portman (through indisposition), Mr. Barker moved, and Colonel Challoner seconded, the resolution of which his lordship had given due notice, namely, that Mr. Foley, M.P., should be elected a member of the Council, to fill up the vacancy occasioned by the lamented decease of Mr. Harvey. This motion was carried unanimously.

Trial of Implements.—Mr. Thompson brought under the consideration of the Council various suggestions connected with the arrangements for the trial of implements next year, which was discussed and adopted. The Council also adopted the suggestion of Colonel Challoner, that the Tuesday in the week of the show should in future be devoted to the private trials of implements by the judges, instead of its being continued, as it had been during the last few years, as the first day for the admission of the public into the implement-yard.

Committees.—The Council then proceeded to appoint the standing committees for the ensuing year. The committees of the past year were agreed to, with the following additions: Sir M. W. Ridley to the Finance Committee; Col. Challoner, Mr. Kinder, and Mr. Barker to the House Committee; Capt. Pelham to the General Norwich and Trial of Implement Committees; Mr. Thompson and Mr. Shaw (London), to the Ashes of Plants Committee; and Mr. Milward to the Farm-account Committee.

Miscellaneous Communications.—Mr. Bullock on Pleuro-pneumonia; Mr. Beardsley on the application of charcoal in Potato culture; Lady Franklin's present of Australian Wheat; Dr. Ryan's statement on the free analysis of soils in connection with a public company with which he was in communication; Mr. Cort and Mr. Eginton on town-sewerage; and Mr. Milburn's Agricultural Almanac.

William Hodgson Barrow, Esq., of Southwell, Notts, was elected a Governor, and the following gentlemen Members of the Society—

Baker, J. B., Scarborough, Yorkshire
 Bishop, John, 23, New Bridge-street, Blackfriars
 Brooke, Edward Burnage, Withington, Manchester
 Brown, David, Cathedine House, Brecon
 Christian, John Robert, St. Mary Abbott's-terrace, Kensington
 Crispin, Henry, jun., Chumleigh, Devon
 Davis, John, Cranbrook, Hford, Essex
 Ffance, Robert Wilson, Rawcliffe Hall, Garstang, Lancashire
 Gillett, John, Tunstall, Acle, Norfolk
 Gurney, John Henry, Easton, Norwich
 Hill, Harecourt, Hever's Wood, Brasted, Kent
 Hine, Thomas C., Nottingham
 Hornby, Rev. William, St. Michael's Vicarage, Garstang
 Hughes, Samuel, Bristol
 Hussey, Richard Hussey, Upwood, Huntingdon
 Mac Donald, William Macdonald, Rossie Castle, Montrose
 Maddox, Alfred, Ringland Hall, Cossy, Norfolk
 Maitland, Capt. Fred. Thomas, Hollywych, Hartfield, East Grinstead
 Merriman, William Clark, Lockeridge, Marlborough
 Smith, Robert, Stafford-street, Edinburgh
 Spilsbury, Samuel, Little Osbaston, Monmouth
 Stratton, Benjamin, Bristol
 Tebbitt, Walter, Cottage House, Clapham Common
 Tilley, Joshua, Gurston, Redstone Hill, Reigate
 Tomlinson, Samuel, Sutton Place, St. Helen's, Lancashire
 Trench, William, Cangort Park, Roscrea, King's County
 Tullidge, William, Houghton Farm, Blandford, Dorsetshire
 Turner, Henry Wall, Hanwell Park, Middlesex
 Walker, Thomas, Cockermonth, Cumberland
 Waring, William, Chelsfield, Kent
 Waters, R. S., St. Giles's, Cranbourne, Dorset
 Webb, J. C., Hempnall, Stratton-St.-Mary, Norfolk
 Whitehead, John, Preston, Lancashire
 Witherby, Frederick, New Zealand.

The names of 34 candidates for election at the next meeting were then read.

A *Special Council* was held on the 7th ult. (agreeably with the terms of the bye-laws) for deciding on the Prizes for Live Stock at the Norwich Meeting; present, the Earl of Chichester, President, in the Chair; Hon. Capt. Dudley Pelham, R.N.; Mr. Raymond Barker; Mr. Brandreth; Mr. Bennett; Col. Challoner; Mr. Druce; Mr. Fisher Hobbs; Mr. Hndson (Castleacre); Mr. Jonas; Mr. Milward; Mr. Robert Smith; Mr. Stokes; Mr. Thompson; and Mr. Jonas Webb.

The several prizes were discussed and agreed to, and the prize sheet ordered for publication; Mr. Spooner's letter on commendations for horses, and Mr. Pawlett's on circumstances connected with the competition of Leicester sheep, being referred to the General Norwich Committee.

A *Special Council* was also held on Friday, the 8th ult., for the purpose of agreeing to the Report to be presented by the Council to the General Meeting; present, the Earl of Chichester, President, in the Chair; Col. Austen; Mr. Raymond Barker; Mr. Blanshard; Col. Challoner; Mr. Shaw (Northampton); and Mr. Henry Wilson.

The meetings of the Council stand adjourned over the Christmas recess to Tuesday, the 6th of February.

The attachment of the Corporation of London to "slaughter-houses" seems to be as ancient as it has been pertinacious. Whether in the nineteenth century more respect is to be paid to "slaughter-

houses" than to "grave-yards" remains to be seen :

In 1290, the Carmelite Friars of London petitioned Edward I. to abate a nuisance arising from this, by which several of the monks had died.

By the Act 11 Edward III., the butchers of London are forbidden to slaughter cattle within the city.

In 1370, the inhabitants of Smithfield and Holborn petitioned Richard II. in the third year of his reign, complaining of the infection of the "air from butchers slaughtering cattle" in that locality, and by the act 12 Richard II. it was ordained that the butchers of London should erect a slaughter-house out of the city on the banks of the Thames. A.D. 1392 and 16 Richard II., it is enacted "that the butchers of London shall not slaughter therein any swine or other beasts for sale."

In the reign of Henry VII. a petition was presented to the king in parliament, by the parishioners of St. Faith's, and St. Gregory's, in London, stating "that for the most part throughout the parishes aforesaid, they had been greatly annoyed and *discompered* by corrupt airs engendered in the said parishes by occasion of blood and other foulis things by reason of the

slaughter of beasts, and scalding of swine, had and done in the butchery of St. Nicholas' shambles, whose corruption and foul ordure had been complaint of for divers seasons by the space of sixteen years continually, *to divers mayors and aldermen of the city of London, and no remedy had been found;*" and enacting that to provide for the conservation as well of his most royal person, as to succour his poor subjects, 'that in no cities or towns the common slaughter-house of beasts should be kept in any special part within the walls of the same, lest it might engender sickness, unto the destruction of the people.' It was therefore, by 4th of the reign of Henry VII., cap. 3., enacted that butchers shall not slay beasts within the walls of London, and that this law be observed in every walled town "except Berwick and Carlisle."

A comparative statement of the number of animals slaughtered in the City in the reign of Henry the Seventh and at the present time, would furnish information as to the increased means supplied to "engender sickness unto the destruction of the people."

ON THE INVESTMENT OF CAPITAL FOR AGRICULTURAL PURPOSES.

The recent meetings of the agriculturists in London this year are pregnant with more important consequences and inspire higher hopes than any preceding meetings. The application of capital to agriculture, and the strongly-expressed opinion of the Duke of Richmond that such application would be more profitable to capitalists than those in which they are wont to engage—that, were his Grace possessed of treble his fortune, he would embark all of it for such agricultural purposes—must make a great impression upon the country, and especially upon those who are now suffering most deeply from merely speculative modes of making profits by trading upon human credulity and monetary mania. Deducting the profits that the getters up of schemes have made, who else have realized much in comparison to those who have lost vastly more? Had that capital been expended for agricultural purposes, what immense results would have taken place in the arable and pastoral riches of the country! and who would have lost a farthing? Illegitimate speculations stopped nearly all legitimate ones, and the rate of interest for money for the latter rose from 2½ or 3 per cent. to 10, 12, and 20. The country was on the eve of a social bankruptcy, when Government stepped in, and contrary to statute law, gave its sanction to the Bank of England to grant loans at a minimum of 8 per cent. At this moment money can be had at 2½ per cent., but with a shuddering want of confidence in any but legitimate purposes, possessing certain security. Now the Duke of Richmond has pointed at the mode in which capital can be invested without the possibility of loss, and with the certainty of very considerable profit. The Act of the 9th and 10th of Victoria, chapter 101, gives to the Government a power to lend out of the public revenue a limited sum, with powers to recover the repayment with interest at 3 per cent., for purposes of land drainage, and that such loans shall be chargeable upon the land itself, whether entailed or not, riding over all existing, as well as all future, mortgages. Government have lent all the money they were empowered to lend; and there is a great opening for capitalists to stand in their shoes and advance more. Still the 3 per cent. interest is no sufficient inducement, and Government not being permitted to be traders subjected to the bankruptcy law could not take more by executing the works of drainage themselves. It is not so with capi-

talists. They, by a large and comprehensive system of drainage, with all the means and appliances in their power, could effect the drainages much better and much cheaper than mere individuals in particular localities, while at the same time getting, perhaps, greater profits than those in individuals could possibly do with their limited means. Add such profits for effecting the works to the three per cent. interest, and take first charges on the land as security, and what better employment of capital can be imagined? The *Mark Lane Express* of last Monday gave an excellent report of the speech of the Duke of Richmond, but omitted, by accident, the statement that the morning papers represented his Grace to have made, that "he was most happy to hear that there was an association forming in the metropolis to afford this aid" (capital for the drainage of land) "to agriculturists." Such is the fact; and what is likely to be the result? If the spare capital now seeking employment induced by six or seven per cent. interest (double the amount attainable by less secure means), be invested for purposes of drainage, subsoiling, and improvement, the real riches of this country will most rapidly increase; the food of man, both in arable and pasture, will progress to an extent much greater than the population. Statistics prove that the health and longevity of agricultural districts are far beyond those of all other districts. The employment of labour on reproductive works will be another great national advantage, and all the people will be better fed and clothed, because there will be at home more and more annually with which to feed and clothe them.

There are other minor modes of employing capital for agricultural purposes in addition to those of drainage. Government and Parliament seem to be bent upon getting rid of those great nuisances and sources of disease and death arising from the slaughtering of cattle in the centres of largely populated districts. Why should not capital be invested in providing suburban abattoirs and cattle markets to get rid of the manifold evils and scandals of the present system? Look at Smithfield last Monday! The scene was horrible—the nuisance abominable—the loss incalculable! How many beasts were rendered unfit for human food by being goaded, bruised, fevered, maddened, or exhausted by hunger and thirst? While at Islington Cattle Market there would have been room for all—injury to none.—Mark Lane Express.

THE LONDON FARMERS' CLUB.

MONTHLY MEETING OF THE COMMITTEE OF MANAGEMENT.

MONDAY, DEC. 4.

Present:—Messrs. J. Beadel, W. Chiffins, W. Fisher Hobbs, T. Knight, W. Pursler, W. Shaw of the Strand, and J. Tyler. W. Shaw, Esq., in the chair.

The minutes of the last meeting were read, confirmed, and signed by the chairman of this day.

The following gentlemen were elected members:—

W. A. Dean, Great Torrington, Devon.
A. K. Deane, East Brent, Somerset.
J. P. Forster, Wood-street, Cheapside.
C. J. Hilton, Faversham.
G. H. Ramsay, Derwent Villa, Newcastle.
J. Swift, Wood House, Cambridge.
W. Sainsbury, Manor House, West Lavington, Wilts

Some other names were read for the first time.

The thanks of the committee were given to Mr. Fisher Hobbs for a portrait of the late Lord George Bentinck which he had presented to the club.

James Thomas, Esq., of Liddington Park, was elected vice-chairman of the discussion meetings for the ensuing year.

A variety of other business, including the preparation of a report from the committee for the general meeting, was also gone into.

GENERAL ANNUAL MEETING.

THURSDAY, DECEMBER 7.

ROBERT SMITH, Esq., late of Burley, and now of Emmett's Grange, Devon, in the chair.

Mr. Corbet, the Secretary, read the following report, which, on the motion of Mr. Nesbit, seconded by Mr. Thomas, was received and adopted:—

REPORT OF COMMITTEE.

The committee can again report with much pleasure on the position the club occupies, and the progress it has made during the past year. In this period fifty-five new members have been elected, while the number of those retiring—nine only—is, compared with the average of former years, far less than usual.

The support, then, this club continues to receive from agriculturists and others, while it is gradually and steadily advancing the society in importance, should also encourage its friends to increase their exertions in recommending it. Independently of its accommodation for members, the Farmers' Club has perhaps a higher claim and character. The committee feel that they are justified in saying, that, for the last two years particularly, no question affecting agriculture has been mooted without the members of the Farmers' Club either testing its truth in their own home, or being referred to from the highest quarters for their opinion upon it.

In selecting subjects for discussion or entertaining propositions made to them, the committee will endeavour to preserve this course: watching as jealously, as they will advocate earnestly, any subject they may consider should command the attention, or merit the support of the Farmers' Club.

Beyond this, the committee have only further to report, that arrangements have been made for keeping the club at this house; a step which they believe will have the approval of almost every member, and that they trust will work on to the mutual satisfaction of all interested in seeing the club continue to prosper.—December 4th, 1848.

The meeting then proceeded to the election of members of the Committee, who go out by rotation, all of whom were re-elected:—viz., Messrs. J. Beadel, G. Emery, W. Grey, T. Mount, W. Shaw, jun., Robert Smith, R. B. Smith, J. Thomas, G. Turner, and J. Tyler.

The following gentlemen were also elected on the Committee, to fill up certain vacancies which had occurred:—H. Trethewy, S. Cheetham, J. Carter, R. Garrett, J. Neame, J. C. Mechi, and J. C. Nesbit.

Mr. W. Fisher Hobbs was elected one of the trustees of the club, in the place of Mr. Henry Price, deceased. The following gentlemen were elected auditors:—E. Pursler, C. Murton, and T. Barker.

Some other business, including a proposal for a better arrangement of the club library, was also considered, and a vote of thanks having been given to Mr. Smith for his able conduct in the chair, the meeting broke up.

ANNUAL DINNER OF THE CLUB.

The Annual Dinner of the Members of the Club took place on Thursday, December 7th, in the large room at Radley's Hotel, nearly opposite the Club House, when upwards of a hundred Members, with their friends, sat down.—Charles Stokes, Esq., of Kingston, Nottinghamshire, in the Chair, supported by, amongst others, the following gentlemen:—The Honourable H. W. Wilson, of Keythorp Hall, Leicestershire; Mr. Jonas Webb, of Babraham, Cambridgeshire; Mr. H. Overman, of Weasenham, Norfolk; Mr. Robert Smith, late of Burley, Rutland; Mr. W. Shaw, of the Strand; Mr. W. Fisher Hobbs, of Boxted Lodge, Essex; Mr. J. C. Mechi, of Tiptree Hall, Essex; Mr. J. Tyler of Layton, Essex; Mr. J. Beadel, of Broomfield Lodge, Essex; Mr. J. Ambrose, of Coptford Hall, Essex; Mr. C. Wood, of Longford, Essex; Mr. Cuthbert Johnson, of Waldronfield, Surrey; Mr. S. Bennett, of Bickering's Park, Bedford; Mr. W. Bennett (Vice-Chairman), of Lewsey, Bedford; Mr. W. Anderson, of Oakley, Bedford; Mr. H. Trethewy, of Silsoe, Bedford; Mr. J. Thomas, of Liddington Park, Bedford; the Rev. J. Y. Cooke, of Semer, Suffolk; Mr. J. J. Flowerden, of Hinderclay Hall, Suffolk; Mr. R. Stedman, of Pakenham, Suffolk; Mr. T. Hawkins, of Assington, Suffolk; Mr. W. Shaw, of Coton End, Northampton; Mr. Owen Wallis, of Overstone Grange, Northampton; Mr. W. Gray, of Courteen Hall, Northampton; Mr. T. Knight, of Bobbing Court, Kent; Mr. W. Carter, of Boughton, Kent; Mr. B. Hutch, of Tenterden, Kent; Mr. G. Pilcher, of Rolvendon, Kent; Mr. W. Dickson, of East Wickham, Kent; Mr. T. Umbers, of Wappenbury, Warwick; Mr. G. Bodington, of Sutton Coldfield, Warwick; Mr. C. H. Lattimore, of Wheathampstead

Place, Herts; Mr. J. Miles, of Wexcombe, Wilts; Mr. J. B. Spearing, of Chilton, Wilts; Mr. W. Sainsbury, of Manor House, Wilts; Mr. W. Spearing, of Chilbolton, Hants; Mr. W. Child, of Vernham Manor Farm, Hants; Mr. W. Verrall, of Lewes, Sussex; Mr. T. Ellman, of Cuckfield, Sussex; Mr. J. Wood, of Cuckfield, Sussex; Mr. R. Holmes, jun., of Arundel, Sussex; Mr. S. Skelton, of Sutton Bridge, Lincoln; Mr. W. Wingate, of Hareby House, Lincoln; Mr. W. Bullock Webster, of Houndsdown, Southampton; Mr. G. P. Tuxford, of Barnes, Surrey; Mr. L. A. Cosmaker, of Westwood, Surrey; Mr. G. Parson, of Haslemere, Surrey; Mr. J. Swift, of Wood House, Cambridge; Mr. F. King, of Oxford; Mr. R. B. Smith, of Edmonton; Mr. C. N. Smith, of Derwen Four, Swansea; Mr. J. Miller, of Morfa Manor, Aberystwith; Mr. Blackstone, of Camden Town; Mr. Kirk, of St. James-square; Mr. E. Purser, of Bridge-street; Mr. J. C. Nesbit, of Kennington; Mr. W. S. Tootell, of Edge-ware; Mr. J. Trumper, of Southall; Mr. R. Beart, of Godmanchester; Mr. T. Wilson, of Fenchurch-street; Mr. C. Lawrence, of Cirencester; Mr. G. Lane, of Cirencester; Mr. J. Whaley, of Enfield Chase; Mr. R. Dickson, of Bucklersbury, &c., &c.

After the cloth had been drawn,

The CHAIRMAN gave in succession, "Her Majesty the Queen," and "Prince Albert and the rest of the royal family," both of which toasts were cordially responded to by the company.

The Hon. Mr. WILSON then rose and said: Gentlemen, I rise at the bidding of the Chairman, to propose a toast which I know you will receive with favour. In every public assembly, British farmers are always ready to pay that tribute of respect and honour which is due to the right arms of our defence, the army and the navy; services which are conspicuous throughout the civilised world, not only for their valour in action, but for their moderation in victory (cheers); services which I am bold to say it is the vital interest of every lover of order and respecter of peace to maintain in that full efficiency which is becoming in the defences of a great nation like our own (Hear, hear). I am requested also to couple with that toast a name which is known in every cottage as in every palace, a name which is dear to, and will ever live in, the heart of every British subject—the Duke of Wellington (cheers). I beg, then, to propose for your acceptance, "The Army and Navy," and to couple with that toast the name of the "Duke of Wellington."

The toast was drunk with enthusiasm.

The VICE-CHAIRMAN (Mr. W. Bennett) rose and said: It affords me great pleasure, although I think there are other gentlemen far more suited to the task than myself, to propose to you the next toast. It is, gentlemen, "Success to the London Farmers' Club" (Hear, hear, and cheers). Gentlemen, I need not detain you long on the present occasion. You will all feel with me, that an occupation so immediately connected with the best interests of mankind as that of the cultivation of the soil must be one of the highest and most paramount importance, in whatever light it be regarded. Whatever be the state of society, it is the decree of our great Creator that men should cultivate the soil for the sustenance of themselves and their fellow-creatures; and, therefore, everything connected with the improvement of agriculture, and the well-being of those who have to provide for millions of people, ought to be, in all states, under all governments, and with all people, a great and most important object of consideration (cheers). You will agree with me also, gentlemen, that those who are engaged in such an employment ought to have an opportunity of exchanging their sentiments and meeting in friendly conviviality, and at the same time endeavouring

to improve themselves in the science of agriculture (Hear, hear). I have always looked upon the establishment of the London Farmers' Club as a matter of vast moment; and, if it be properly conducted, if the right feeling shall prevail among its members, if a little forbearance with each other shall characterize our annual meetings and our various discussions, I have no doubt that this Club may be made of great service to the nation at large. But, gentlemen, when you consider that there are assembled together, from different parts of the kingdom, men of different grades of politics, and holding different sentiments on various subjects, you will perceive that the apple of discord might easily be thrown into our ranks, and by that means the useful objects of this Society be endangered. I beg, therefore, most respectfully and submissively, to request my brother farmers who meet on these occasions not easily to take offence (Hear, hear, and applause). It is essential to the well-being of a society of this kind, that we should exercise a little of that "charity" which "hopeth all things" (Hear, hear); and if we cannot always think entirely alike, we should resolve that when we cannot do so we will at least "agree to differ" (Hear, hear). But, gentlemen, I said I would not detain you long. You are all aware that we meet at the present time under circumstances which I regret to say are not the most cheering as regards the country at large. From various circumstances which have occurred of late, the prospects of our own profession, too, are not just what I should like to see them. There are individuals, indeed, who contend that, in the teeth of all the difficulties, in the teeth of all the burdens which agriculture may have to sustain, and of all the privations which it may have to encounter, it will yet rise superior to these things, and that the vessel will by-and-bye right herself. I sincerely wish that these persons may prove to be true prophets. I desire this, amongst other reasons, because it is impossible for agriculture to flourish without my sharing in its prosperity. There is, you know, a little of number one in all of us; and I cannot but feel deeply interested in the prosperity of that which is so important to the State, and so important, I may add, to all the gentlemen now assembled (Hear, hear, laughter and cheers). Gentlemen, there are one or two points which I hope I may be allowed to touch upon; but I will do it very briefly, and I will also endeavour to do it in a way which will not be offensive to any portion of my friends around me, whatever difference of opinion may exist. There is one subject which has particularly occupied our attention of late, and I refer to it only for the purpose of removing a misunderstanding which exists among some influential landowners in this kingdom as regards the object. Many of us think it of vast importance, not only to ourselves—the well-being of agriculture, but also to the feeding of the people at a cheap and reasonable rate, that compensation should be given for the unexhausted improvements which tenants may make upon farms (Hear, hear). Gentlemen, I do not use the term "tenant-right" because I think it has been used offensively: it has been used in a way which has not been at all pleasing to the feelings of many well-meaning landlords. It is necessary that, on matters of this kind, we should thoroughly understand each other; that we should make it generally known that we are not seeking anything at the expense of landlords; that we are not seeking anything which can by possibility be considered as trenching upon the rights of private property. I trust the times will never come in England when the yeomanry of the country will have any disposition to do that (cheers). I think, however, gentlemen, that every man, in whatever station he may move, has a clear and distinct right to demand that no other person shall come and pounce upon his property (Hear, hear); and if his employment be of such a kind or character that he cannot from it obtain immediately the result of his own enterprise and his own capital, then proper time should be allowed him for taking that out which he has invested, or compensation should be given him for that which he has not had the opportunity of getting back. Now, gentlemen, that is a common-sense view of the question. There need be no squabbling about it; and it is, therefore, the more desirable that on this, as on every other occasion, we

should go into the question temperately and in the most friendly spirit. I will only say further that, from the severe cross-examinations which took place in the committee appointed specially to investigate this subject—the legislature having thought it important that there should be an enquiry—from the very close handling, I was going to say, which some of the witnesses had who went to give evidence before the committee, I fear that there was a strong feeling against the object which we sought to attain (Hear, hear). Gentlemen, it is impossible to read the questions which were put to the various parties who appeared and not be convinced that there was a strong desire in the minds of some of the members of the committee to swamp the feelings of many farmers and other well-intentioned men in the country. I will not dwell on this subject further, except to observe that, whether any legislative enactment shall be passed or not, as the result of the inquiry, that inquiry itself cannot fail to do good, by convincing every unprejudiced mind that it is an absolute wrong to require a man to invest his capital in the soil and not give him an opportunity of reaping the fruit. Whether we have legislation or not—and I think we might have it without injury to either party—it is impossible for the subject to be understood by the country at large without a beneficial result. I hope that those who speak on this subject will endeavour to exercise calm deliberation, and not speak under the influence of feelings which might in any way betray what I hope will never be felt by the farmers of England, namely, disrespect for property and its rights in this country (cheers). Gentlemen, you are all aware that many of us are of opinion that we are placed in great difficulties as regards the prospects of agriculture in other respects. There are those in the country who conceive that no possible harm can arise from extremely low prices and extremely heavy burdens. I am not one of those who entertain that opinion; I am not one of those who think that those two things can go together and not inflict great injury. We have lost everything in the shape of protection to the interests of the British farmer, and at the same time we have obtained nothing in the shape of alleviation as regards our burdens. Now, the question is, is that right? If it be right, how is it that all those parliaments which have talked upon the subject have always said that the abolition of protection could not be accomplished in this country without being immediately followed by a great alleviation of those burdens which affect agriculture. Therefore, gentlemen, I think we may for a moment leave the question between the owner and the occupier of the land, and touch upon that which affects both owner and occupier, and, in my judgment, the well-being of the community at large; for it has been my own conviction for many years—and I am not likely to change my opinion on that subject—that it is impossible for the owners and the occupiers of the soil of Great Britain to fare ill as a body, and for the rest of the community to do well. Such are my own sentiments, and they are being strengthened by all that I observe. I know there are landowners and landowners' agents who contend that, in the teeth of all that I have mentioned, the prospects of agriculture are cheering. I cannot, on this occasion, refrain from alluding to a letter which has appeared in *Bell's Weekly Messenger* and in some other newspapers: I do not know whether or not it has appeared in the *Mark Lane Express*, another important and valuable paper. But a letter has lately appeared, on the subject of the prospects of the British farmer, and I confess that that letter spoilt my dinner (laughter); there appeared to be something on my stomach of a very acid nature (renewed laughter). The writer observed that it is clear that there is now nothing beyond 48s. a quarter to hope for, or 49s. at the utmost. Now that amount, with bad crops, with a bad yield, everybody must know is not a remunerating price to the cultivator of the land who is burdened as we are. This writer observes, however, that the farmers of England managed to come down from 80s. a quarter to 56s. a quarter; and still agriculture was a very prosperous concern. He then says that 12½ per cent. might still be taken off without the former being damaged thereby; science would come to his aid, and he would still fare exceedingly well! (Laughter.) Now, gentlemen, if you think so, I am free to confess that I do not; and I think it is the bounden duty of the farmers of this kingdom to insist upon the alleviation of those burdens which now press so unfairly and exclusively upon agriculture. It is well known that those who will so look for an alleviation in the laws of this country relating to commercial intercourse, have always admitted until now that it must

be connected with and attended by some measures of an alleviating character. They have now given up that point altogether; and, instead of any alleviation, we have, together with 56s. a qr., an increased property-tax to burden us. We have, therefore, before us the prospect of extremely low prices and extremely heavy burdens: the poor-rates are, as every one must know, more likely to increase than diminish; the county expenses are also increasing; you have new gaols everywhere; and the system of prison discipline which is being extended through the length and breadth of the land is calculated rather to increase the burdens which farmers have to bear. Gentlemen, the arguments in the letter which I have referred to appear to me most unreasonable and absurd. They are, too, most unworthy of the quarter from whence they come; for the gentleman, in other respects, professes to be an enlightened agriculturist; he wishes to put the farmers right in matters respecting which they are wrong, but at the same time he himself takes up a position which you must all admit to be most objectionable, inasmuch as he says because farmers have come down from 80s. to 56s., they may just as well come down from 56s. to 48s. I have understood that when flogging was so common in the army it used to be the practice to have the army doctor in attendance. This officer held in his hand the wrist of the poor fellow under chastisement, in order to ascertain how far the castigation might be administered with safety; and when a certain number of stripes had been administered and a certain effect produced, he would cry "Hold! the patient cannot bear any more." Now, it appears to me that Mr. Hewitt Davis is just that kind of man (laughter); he is the doctor, whose duty it is to feel the farmer's pulse, and to see how much he will bear to be flogged (great laughter). Gentlemen, I will not detain you any longer; I thank you for the kindness with which you have listened to my observations, and I beg to propose—I think I may say with the honours—"Success and great prosperity to the London Farmers' Club." The toast was enthusiastically responded to in the manner proposed.

Mr. SHAW, of the Strand, rose and said: The task of responding to the last toast devolves upon me. Before I proceed to offer a few observations with respect to that toast, permit me to set myself right with you all in one respect, by stating, in answer to Mr. Bennett, that the letter to which he alluded has not appeared in the *Mark Lane Express*; and if it had, it would not have had the advantage of being inserted without a remark (Hear, hear). Gentlemen, I am much pleased that Mr. Bennett has addressed you in reference to this club in terms in which I can most cordially agree. I was very glad to find him—for I know how far any remarks which he makes will go—infusing into the minds of the members of this club the necessity of dealing temperately, though firmly, with subjects which come before them; and I heartily concur with him in expressing a hope that every subject, of every description, will be discussed in such a manner: I likewise disclaim, on the part of the members of this club, any desire, in advocating those views of their own interest which they believe to be consistent and just—I deprecate the idea of attempting to obtain any privilege for themselves to the injury or the prejudice of others. Mr. Bennett adverted to the term tenant-right, which he thinks has been offensively used in reference to the claim which the tenant-farmers of this country are now putting forward to compensation for unexhausted improvements. I do not myself know under what circumstances that word has been offensively employed. I can readily understand that to many persons it may not be quite agreeable, but still I cannot admit it to have been offensively used. So far as regards the object sought, I, for one, have always stated—and I venture to name myself with the subject, because I have taken great interest in the question (Hear, hear). I have always stated, that I care not under what name, or in what way, compensation to the tenant or protection for his capital came, provided it be obtained. I am happy to find that this question, first mooted in this club, has made, and is making, great progress. I am glad to find also, from a circumstance which you will readily recognise with me, that the opinions entertained and expressed by the club with respect to that question, are, to say the least, not obnoxious to a great many important landed proprietors in this country. (Cheers). Gentlemen, the object which I have always had in view is to get this question discussed; and my friend, Mr. Bennett, will well recollect, as will also Mr. Hobbs, who was in the chair on the occasion, that

when we had a meeting, two years ago, on this very subject, in this room, proposal having been made to appoint a committee to communicate with the members of the House of Commons, for the purpose of obtaining legislation, I instantly dissented, alleging, as my reason for so doing, that I conceived that it was too early to ask for legislation on a subject involving such extensive interests—legislation by men whose own interests were deeply involved and who had never had their attention sufficiently directed to the question (Hear, hear). I felt that they must entertain the same feelings which I myself should have done under such circumstances; that if, being a landed proprietor, and unacquainted with the subject, persons had come to me and asked me to legislate in a manner which must affect my property, to what extent I did not know, I should have said, "No, gentlemen, I must take time to consider the matter." I thought that all we could then hope for, was to get the question duly considered by those who are most interested; and I felt perfectly satisfied that if that were done the result would be most satisfactory to you who expect benefit, and satisfactory also to those who will benefit still more, although they may not think so. The progress the subject has made is known to you all. There is scarcely an agricultural meeting now held at which the question of giving a fair and proper protection to the tenant farmer by affording security to his capital is not discussed. You are aware that, owing I must say almost entirely to the discussions of this club, the question has attracted so much attention as to have been brought twice before the House of Commons; and upon the second occasion it was eminently successful, because it led to the appointment of a committee which elicited a vast body of information from all parts of the kingdom. The very placing of such a body of information before the parties interested on both sides—nay, the mere circumstance of fifteen or sixteen gentlemen, most, if not all of them landed proprietors and county representatives, meeting together for several days and examining witnesses, and afterwards agreeing to a report in which the principle is admitted, is a great and an important point gained; and I feel perfectly persuaded that when other landed proprietors see what their brother proprietors in Parliament have done, and what conclusions they have arrived at, they will at least be induced to examine the question, and they will then see in what a clear and explicit manner it is shown, on the testimony of men whose practical acquaintance with the subject has rendered their opinion deserving of consideration, that the only measure which can place the British farmer in a situation to meet in some respects—I do not say in all—the difficulties which surround him, is the enabling him to invest his capital with the greatest security and to the greatest advantage. Gentlemen, it unfortunately happens that just at this moment I know of a case in which a practical farmer—a man admitted to be an excellent and first-rate farmer in his district; a man who has spared no trouble and no expense in the cultivation of his land; a man living in an agricultural county, who has occupied two farms, one for eighteen years the other for twelve, without having a word of difference with his landlord—has within the last month or two received notice to quit both his farms. He has during the period of his occupation expended £10,000 in artificial manures, oilcake, and other articles of that description. But he has received notice to quit; and he believes for no other cause than some squabble which has taken place between himself and the landlord's gamekeeper about rabbits; and in reply to his application to the landlord, he can get no other answer than that of being referred to his solicitor. Such is the position of that gentleman, with a part of his capital buried in the soil; for I defy any man who is a good farmer to avoid having in the land that which he has a right to take away upon leaving his farm, without injuring his landlord. Here is a man occupying land of considerable extent about to be turned out of his farm, and leaving his capital behind for some other person to enjoy; and that merely because he has had a squabble with the gamekeeper about a rabbit (Hear, hear). Now, gentlemen, that which has happened in one part of the country may happen in another. It is not enough to tell me, what I most willingly admit, that the landlords of this country are generally most liberal and noble-minded men. I believe that in no other part of the world can such men be found; but then amongst them, as in other classes, there are exceptions; and why should any man be exposed even to that exception? (Hear, hear). I am very glad to find that

the principle which I have advocated is making such steady progress. I am rejoiced also to find, from many circumstances, that this club is being regarded in a more favourable light by those parties whose property would be influenced by the establishment of any such tenant-right or compensation as we ask for. I am delighted to observe that the daylight of knowledge is breaking in upon them in respect to this question; and I am convinced that if you follow the advice of Mr. Bennett, if you discuss the question with temper and moderation, firmly and determinedly, with a determination to do justice to those with whom you are at issue, as well as to seek it for yourselves, you will succeed in attaining your object, and that the result will be to benefit yourselves, to benefit the landed proprietors, and to benefit the country at large. In conclusion, I beg leave to thank you, gentlemen, for drinking "Success to the London Farmers' Club."

The Hon. Mr. WILSON said: Gentlemen, if I rose before with confidence to propose a toast which, in the result, met with your favour, I cannot doubt that that which I have now to propose will meet with your hearty concurrence: it is the "health of the Gentleman who now so worthily fills the office of Chairman" (cheers). I have had the pleasure of knowing that gentleman for many years, and I can state with confidence that he is a thoroughly honest man, that "noblest work of God." He is, too, one who has taken a great interest in the cause of agriculture; he is a successful breeder; and he is a promoter, so far as it is in his power to be so, of all things which are useful in his own neighbourhood. I have, therefore, no hesitation in proposing the toast for your acceptance. Your Chairman has requested that I would make one or two remarks; and, though I am sorry to take up your time, I feel it to be my duty to comply. In the first place let me state that there is not a member of this club who is a more hearty supporter of it, so far as he can be so, than the humble individual who now addresses you. I became a member of the club very early; many years ago, before it was formed, I stated at an agricultural meeting that it was my earnest desire that a club should be established in London, which would afford the agriculturists in all parts of the kingdom an opportunity of meeting together, and of communicating to each other that information which it was necessary to have diffused upon topics connected with agriculture. As to the question which has been so much referred to by Mr. Bennett—namely, that of tenant-right—in which so much interest is now felt throughout the kingdom, I cannot but state my firm conviction that if that question had been brought forward in the moderate and sensible manner in which Mr. Bennett has introduced it to your notice, I do not believe that it would have found among landlords a single enemy. There is another topic to which I am desirous of adverting, and which, I think, should be frequently discussed on occasions like the present. Measures have been passed taking away the protection which many of us thought essential to the interests of agriculture. In alluding to this question, I am not about to enter at all upon the subject of the corn laws; but I think it right that at meetings of the farmers of Great Britain men should speak openly and plainly on matters which affect their own interests. Among those which affect us most materially are the burdens we have to sustain. Whether or not this is the proper time for advocating an alteration, I am not prepared to say; but this I will say—that it has been my firm opinion for many years—it is so still—that the malt-tax is one of the most unjust taxes which could be imposed on the farmer; and I think we ought, when the time shall arrive at which we see an opportunity for its being done, we ought, I say, to be united as one man in an endeavour to get rid of that unjust impost. If that tax was unjust ten years ago, when a certain modicum of protection was enjoyed, still more oppressive must it be now to prevent us from using the produce of our own soil for purposes for which it may be employed beneficially. Well, gentlemen, there are other burdens, some of which have been alluded to this evening. There are the county-rates, the poor-rates, the highway-rates, and various other taxes, imposed upon us; and the observations which I made upon the malt-tax are still more applicable to these. I am happy to say that the Government of the day has now admitted the principle which we advocated some ten years ago—that it is just that the country at large should bear at least a portion of the burden of the prosecution of criminals. When it is evident that the manufacturing interest has produced nine-tenths of

the pauperism of this country, and that it pays but one-tenth of the contributions for its support; when we see that, without imputing blame to any particular class—from the mere congregation of great numbers together in manufacturing towns, the great proportion of crime arises in such districts, and not in agricultural districts—when such is the case, we cannot but rejoice that the Government of the day has admitted the principle, and relieved us from one-half of the expense of criminal prosecutions. They have admitted the same principle in consenting to pay the medical men of the unions out of the consolidated fund. Looking at these results, I say to the farmers of England—Rest not! Lie not down to be sheared, like the sheep which you bring to market; but be united to a man, and continue your exertions until some of those burdens which press so unjustly upon you shall have been removed (Hear, hear). Without entering, as I said before, upon a measure which has already been passed, deprecating, as I do, anything like discussion upon what is now law, because it is our duty to obey the law—I think it right that every man in the kingdom should know and should consider the effects of that law as it relates to his own interest or to that of his class. I will just allude to the importations of cattle since the passing of the tariff in 1843. The importation of oxen, cows, bulls, and calves, was in round numbers (I quote from the parliamentary return) in the first year, 1,500; in the following year, 4,000 and odd; in the next year it quadrupled, being 16,000; in the year afterwards it was 45,000; and in the year 1847, as far as the returns are made up, it was 75,717. If we look at the importation of sheep, we find that in 1843 the number was 217; in 1844, 2,417; in 1846, 94,600; and in 1847, 142,000. With this increase in the importation of foreign cattle, there has been a vast diminution in the official value of our exports of manufactured goods. In 1847, the amount was less than in 1846 by £2,285,000; and in the year 1848, up to the last returns, by £1,200,000. I must apologize for troubling you with these details. Let me now assure you that there are no meetings which I attend in the course of the year with so much satisfaction as I attend those of British farmers. I know there are many, who, from modesty or from some other cause, do not like to attend meetings like the present; but I must say that I never attended a meeting of British farmers at which I was not gratified, and from which I did not return home more determined than ever that as long as I lived it should be my endeavour to unite in a common bond of interest the landlord and the tenant, the poor man and the employer. Questions have been brought before this Club respecting the settlement of the poor man. My opinion is that he ought to be on an equality with the rich man, so far at least as to have the power of removing to whatever place he pleases (cheers). Why should you draw a distinction between a man who by industry has been enabled to save sufficient to hire a £10 house, and another who has not been so fortunate? I would entirely do away with settlement (Hear, hear). I would throw the poor-rate upon the consolidated fund, and make every person in the land contribute. Last year, while £9,000,000 was levied in the form of poor-rate or right, upon property of the value of £40,000,000, property amounting to £200,000,000 is exempt. Why should not that £200,000,000 be brought into play? The only feasible objection which I have heard to it is, that if you place too much in the hands of the commissioners you will not ensure an economical management. To that objection I would give this reply: Let each parish be charged according to the average, which it has been paying into the Exchequer for the last three years; let it pay one-third or one-fifth, or one-eighth, or any proportion which might be sufficient to ensure economy; and let the whole kingdom be assessed for the remainder. I beg to thank you for your attention, and, in conclusion, I hope you will drink with proper enthusiasm the health of your worthy Chairman.

The toast having been drunk with the honours,

The CHAIRMAN said,—Gentlemen, I feel deeply sensible of the kind manner in which you have drunk my health. I can assure you that I take great interest in everything which concerns agriculture; and I congratulate the committee of the Club on having established a medium of communication for farmers belonging to different parts of the country, through which, when they come to London, they are enabled to interchange their opinions, and to discuss subjects of importance connected with agriculture (Hear, hear). With regard to the subject of tenant-right, I will not go into that after what we

have heard from Mr. Bennett and Mr. Shaw. Those gentlemen have explained how the question now stands; and I feel quite sure that the reading of the evidence given before the committee of the House of Commons will convince all considerate landlords of the importance and the necessity of making a change in the present system. I have taken the chair this day solely from a sense of public duty, being desirous to support a society whose object is to improve the agriculture of the country, and thus to benefit all classes of the community. Allow me again to thank you most cordially for the honour you have done me, and to assure you that I wish you all health and happiness to the end of your lives.

Mr. CRIBBERT JOHNSON said,—I rise at the request of the Chairman to propose, as a toast, "The Royal Agricultural Society of England." I do so with the more pleasure, because I feel that during the most prosperous years which have marked their career, they have adhered most carefully, most energetically, and, let me add, most successfully, to their motto—a motto which I am sure will always fall most musically on the ears of English farmers—namely, "Practice with Science." Whatever doubts, gentlemen, whatever difficulties, political or otherwise, may occasionally intrude themselves into meetings like the present; whatever necessity there may be for those eloquent warnings which gentlemen heard from Mr. Bennett on the one hand, and from our Chairman and those by whom he is surrounded on the other, to avoid carrying into your disputations and discussions anything like acrimony, there will, I am quite certain, be no occasion to warn you against disputing on questions relating to the application of science to agriculture (Hear, hear). Gentlemen, the Royal Agricultural Society adopted this motto, which I have mentioned, at the suggestion of the great men who formed the little nucleus from which it emanated, many of whom, as for example, Lord Spencer and Mr. Handley, are now gone from the scene of their labours; it was adopted also with the warm approbation of my friend, William Shaw, to whom, I believe, more than to any one else, that society owed its foundation (Hear, hear): the founders of the institution, feeling that so long as its members adhered carefully to that motto, carrying into the proceedings and researches science in its application to agriculture, illustrating one by the labours of the other, so long might the society expect to lead a long and honourable career. Such, gentlemen, I state fearlessly, has been the actual result. I am old enough to remember the day when the very mention of the word science as it applies to agriculture, in a public meeting would have been met with roars of laughter. I am old enough to remember a period when it would have been said that chemistry was all very well behind the blue bottles in a chemist's shop (laughter); but that to talk of bringing chemistry to the aid of farming was to talk of an absurdity. I need only remind you, gentlemen, of the progress which a few chemical substances have made—the introduction, for instance, of guano, and the still more direct triumph of chemistry in the introduction of super-phosphate of lime, and notwithstanding that the idea was once so much ridiculed in the putting of sulphuric acid on the land, and adding it to bones. I need only remind you of these things to convince you that science, under the auspices of the Royal Agricultural Society, has done no mean things for agriculture (cheers). And let me add, without pretending to wear the mantle of inspiration, that science will hereafter do still greater things for farming. I feel quite sure that the field is not nearly exhausted. When I see the results of the labours which have been performed, in the pages of the Royal Agricultural Society's Journal, I feel quite sure that the persons who have engaged in such labours are treading in paths which cannot but tend to the profit and honour of the professors of agriculture. They will add profit to, while they are elevating, the professors of the most noble of all sciences—that of agriculture. Gentlemen, I will not trespass longer on your attention, but will propose "Success to the Royal Agricultural Society of England."

The toast was drunk with enthusiasm.

Mr. R. SMITH, on rising to respond in behalf of the Society, said: The learned gentleman who has just addressed you has science at his fingers' ends—science in abundance; you, gentlemen, have practice at your fingers' ends, and, in addition, you have perseverance at your hearts. Gentlemen, when the formation of the Royal Agricultural Society was proposed, I at once agreed to it; and I also concurred in the

selection of that splendid motto, "Practice with Science." The Society was originated at a period when the tenant-farmers, as a body, much preferred to see practice take the precedence of science; but time has rolled on, science has done great things, and many discoveries have been made through the ingenuity and talent of our fellow-men. As regards the Royal Agricultural Society, I need not refer to the past to show you what has been done; I need not tell you what has been done by the exhibition of cattle and of implements, or by the distribution of the Journal twice a year to something like 7,000 subscribers. Let me ask you, however, what should we be at the present moment in England without a Royal Agricultural Society? (Hear hear). Take it away, and then you will learn the value of such an institution. But, while we are thus encouraged by the application of science to practice, let me remark that we are at present in a position to reap entirely the fruits of our own enterprise and industry. This has been brought more clearly to my mind during the short time that I have been engaged in a new occupation myself. I may say that, having been called to fill a particular situation in life in which I am required to stand between landlord and tenant, I should not be ashamed to show to any individual on the broad acres of England the agreements which I offer to those who take farms. In conclusion, I would observe that I have long felt a great desire, and do so still, that the farmers of England would more frequently congregate together to discuss matters in which they feel a common interest; and I regret that there is not greater unanimity among them than we at present witness (Hear).

Mr. SAMUEL BENNETT proposed, "Success to the Smithfield Club." He said, as there is no man upon earth whom I esteem more than our worthy Chairman, it would ill have become me to refuse his request that I would propose this toast. I cannot but recollect that we are met at the present moment under peculiar circumstances. On the one hand we have great cause for thankfulness—thankfulness that we are Britons (Hear, hear). If ever there were a period in the history of our country when its inhabitants had cause to be thankful on that account, the present is such a period (Hear, hear); and looking at the events of the past year, I must say that I do not believe there is a British farmer in this country who would not join in supporting the Queen on the throne with the last drop of his blood (cheers). It is a most melancholy thing that low prices should, as it were, compel the farmer to oppress the poor. It is impossible that it should be otherwise when we have such wretched prices for our own produce, and when the produce of the world is let in. I trust, however, that as we have shown ourselves to be Britons, we shall endeavour to stem the torrent for a little while. It must be evident to every thinking person in the country, and especially so to the legislature, that we cannot possibly maintain our present position without some alteration of our burdens; but if we must bear the burden for a season, we will bear it with the greatest degree of fortitude and calmness that we are able to command. We have been constantly reminded of free trade. I do not dislike the expression so much as some farmers have appeared to do; but I say that at present we have nothing like free trade. Give us free trade, and we care not for the whole world; give us an equalization of the burdens which press upon the cultivators of the soil, and we are ready to meet any country. But, gentlemen, can it be said that we have free trade when our manufactured goods (many of them at least) which leave the country pay a duty of 20 or 25 per cent., and in some instances even 30 per cent., and we receive foreign corn at a merely nominal duty? (Hear, hear). This is not reciprocity, it is not free trade (Hear, hear). Now, with regard to the Smithfield Club; it has, I believe, been equally beneficial to the producer and to the consumer. I know it was said that the animals exhibited are too fat; no such thing. If we had not these examples of fat animals, we should never know what an animal was capable of doing. The fattening is necessary to get at the different breeds of animals, and to bring each to perfection. (Hear, hear). Believing that the Smithfield Club is conducive to the interest of all classes, I have great pleasure in proposing the toast.

Mr. W. F. HOBBS said: Mr. Chairman and gentlemen, it is with much pleasure that I rise to return thanks on behalf of the Smithfield Club. So long as that club is supported by the landowners and farmers of the kingdom, meeting together as

they now do, and so long as it receives the approbation of the members of this club and the country at large, it need not be under any apprehension as to the accomplishment of the object for which it was formed, namely, that of supplying the metropolis with the cheapest and the best meat. I perfectly concur in the remarks which have fallen from Mr. Wilson, respecting the malt tax; I do consider that tax to be one which the graziers and farmers of this country ought to endeavour to get rid of. Independently of the position in which we are placed with respect to rice trade, I maintain that we ought to be allowed to use our own corn in whatever way we please for feeding purposes, instead of being compelled to spend annually upwards of £2,000,000 for oil cake and other things of that description, which are not so valuable as malt. I agree with Mr. Bennett's remarks as to the desirableness of our not readily taking offence; and let me add that I will do nothing willingly to give offence. (Hear, hear). As regards agriculture, I do not see how its improvement is to be effected while it continues to be the fashion to have only a yearly tenure. I cannot concede to the gentleman who has left the room (the Hon. Mr. Wilson), that if this question had been pressed on the attention of landlords with more moderation, what we require would have been granted. Having felt great interest in this question, and having gone before the Committee of the House of Commons on Agricultural Customs, I must say that we asked only for that which was reasonable and right; and I think that the blue book, that memorable book of which so much has been said, and which so much pains was taken to withhold from the public (Hear, hear)—I think that will convince every reasonable man that the tenant farmers have acted with moderation in this matter, and have used only sound argument in explaining to landlords what it is that they require. I am sorry to say (I have heard it myself) that the expression which is now most freely used by the landlords of England is like this—"We will not be dictated to by the tenant with regard to the letting of our land." I am sorry also to have heard that they declare that they will not be dictated to, as they term it, by this club. I do not see how there can be anything unreasonable in our asking for that which his Grace the Duke of Richmond has declared to be nothing but justice to the tenant farmer. I will not detain you longer at this late period of the evening, especially as you well know my sentiments on this great subject. I will firmly and determinedly, though I hope respectfully, persevere; and I am proud to find the members of this club so united this evening with regard to the great objects which they have in view. I will only, in conclusion, repeat the advice of Mr. Wilson, that you will not rest until you have obtained your rights.

Mr. SHAW, of Northampton, proposed "Success to the Local Farmers' Clubs." remarking that there could hardly be a more fashionable toast in the present day, seeing that such clubs had become common all over the country. As regarded the question of tenant-right, although he had the pleasure of living under a very good landlord, he still felt on principle a necessity for having greater security.

Mr. BEADLE responded to the toast. He said: If I had had the slightest conception that I should be called upon to acknowledge this toast, I should have been prepared with a little more knowledge of the transactions of those clubs than I now possess. Therefore, if I only treat the subject generally, you will excuse my doing so. Now every gentleman must admit that nothing can be of more importance to the agricultural interest and the farmers of the United Kingdom than the existence of what I may designate our local parliaments. It is through them, gentlemen, if, knowing your duty, you have the courage and the industry to attend them, that you make known to the whole world what are your wants, what are your complaints, and what are the remedies which you seek; and I do hold it to be exceedingly important that in every locality, not only farmers, but every class in the country should have an opportunity of making known their real position. Now, if I can learn what is the atmosphere in which farmers will have to vegetate for the next few years, that atmosphere will be a gloomy one, and therefore it is especially needful that there should be places where they will have an opportunity of making their complaints. The farmer is engaged in one of the most interesting and important occupations in which man can be employed, that of providing food for the people; and if certain difficulties surround you as a body, you are bound to state what those difficulties are, and to suggest means for

their removal—I will even go further, and say, that with a due and proper regard for the rights of others, I would never consent to sacrifice my own. That you will have difficulties to contend against, gentlemen, in future, every one I think will admit; and I think one difficulty—I have sometimes heard it mentioned as matter of reproach, but I have never yielded to the imputation—one difficulty arises from the superior condition in society in which the farmer is compelled to exist. You have, gentlemen, as farmers, been thrown into a superior position in society; and I have yet to learn that it should not be the ambition of every man to maintain his position amid all the difficulties which may beset him. If you compare your position with that of your grandfather's or great grandfather's you will find that you have difficulties to meet which they knew not and could not contemplate. And how are you to bear up against these obstacles? Not by the displacement of a few shillings' worth of labour, nor by descending to hold your own plough or fill your own dung-carts (Hear, hear). You may labour at that from morning till night, and you will only have displaced in some neighbourhoods 1s. 2d., in others 2s. Gentlemen, that is not the course for you to take (Hear, hear). You must be up and stirring; you must improve your minds and enlarge your intellects; you must increase your scientific knowledge; you must become better acquainted with nature's laws; you must know better how to carry out effectually the operations on which success in your occupation depends; and you cannot secure and do all that by sitting in your chimney corners, nor yet by driving a waggon (cheers). I am quite sure, gentlemen, that these observations will be received in the spirit in which they are uttered (Hear, hear). They emanate from a practical farmer. I have been for years engaged in practical farming; and if I have superadded to that another business, which may call for a good deal of my attention, I have lost none of my affection for that class to which I originally belonged. Let me impress on your minds that there is no way in which you can better accomplish the object which you desire to accomplish than by instituting farmers' clubs where there are none; and where they exist, by diligently working out all the advantages which may be derived from them. It is a matter of reproach, and has been made so over and over again, that you cannot get farmers together—that they are spread over a wide surface, and that—now do not be offended, gentlemen, at what I am going to say—that they are selfish in their habits (Hear, hear). Whether the charge be true or not, I will not say; but it is said that nothing will bring you out of your holes and corners (laughter, and Hear, hear); that you will stay at home and grumble, but will not congregate for the purpose of securing your rights (Hear, hear). Now, gentlemen, those who first originated farmers' clubs had one great object in view, which was to induce you to get rid of the reflection thrown upon you by giving you a place to meet without calling upon you to come to London, without asking you to go to York, without tempting you to visit Jericho (laughter). You can now meet within five or six miles of your homes when you go to market, at an expense of half-a-guinea a year, and five or six hours of your time; and if you will all do that, and will diligently set to work to discover what is the nature of your difficulties, and what are the remedies for them, as well as the most improved methods of carrying on your occupations, instead of coming once a year to the London Farmers' Club to make us all regret the grumbling tone in which you speak, you will come with your eyes wide open, come in better spirits, and you will say—"They can't kill us, though they have tried" (cheers). I don't ask you for one moment to forget the difficulties which stand in your way; but I want you, like Englishman, to look a difficulty full in the face, and to conquer it. That you can do that, gentlemen, I am satisfied, and that the local clubs are one means of enabling you to do it I am equally satisfied. I do, therefore, on the part of those clubs, having been the instrument of originating one and of assisting others, return you my best thanks for the compliment you have paid us; but we shall value your works much more than we do your compliments (Hear, hear, and cheers).

The CHAIRMAN proposed "The Committee."

Mr. THOMAS briefly returned thanks.

The CHAIRMAN proposed "The health of Mr. Overman, the first Chairman of this Club," which was cordially responded to.

The CHAIRMAN then proposed "The health of the Secretary, Mr. Corbett," who briefly returned thanks.

The Chairman then retired, and was succeeded in his office by Mr. S. Bennett, when Mr. Mechi addressed the meeting, after which the company separated.

MONTHLY DISCUSSION.

The usual monthly discussion took place at the Club Rooms, Bridge-street, Blackfriars, on the 6th December. The following subject was introduced by the Chairman, Mr. Shaw, of the Strand—"On the Pernicious Consequences resulting from the Payment by the In-coming to the Out-going Tenant for Tillages and Manure made on the Farm, according to the custom of some districts, and commonly called 'Tenants' Rights.'" The attendance of members was numerous.

The CHAIRMAN, on rising to open the discussion, said—Gentlemen, I feel very strongly that the subject which I have proposed to bring before you this evening is one which would be much better treated by some practical person acquainted with valuations, and with the necessary proceedings between in-coming and out-going tenants. But I know that there are always present at the meetings of this club a sufficient number of persons who are competent to speak practically upon the matters discussed; and if I were not conscious that such is the fact, I certainly would not have undertaken to bring forward the question for this evening. This question varies very considerably from any which I have attempted to lay before you heretofore, on the subject of Tenant Right; but *prima facie*, from the appearance which it assumes on the card, it would seem—it has seemed to some—to negative certain propositions which I have previously made. I trust, however, that in the few observations which I shall address to you, and by reference to the authorities to which I shall allude, I shall be enabled to show that there is not that contradiction between the proposition which I now make and others which I have advanced previously, which at first sight there may appear to be. The question, as propounded on the card, is—"On the Pernicious Consequences resulting from the Payment by the In-coming to the Out-going Tenant for Tillages and Manure made on the Farm, according to the custom of some districts, and commonly called 'Tenants' Rights'" Knowing that there is in some districts a custom existing of payment from the in-coming to the out-going tenant for half dressings, tillages, and such-like matters known by the name of tenants' rights, and highly prejudicial to the tenants in those districts, I was anxious to direct attention to the subject, not only in the hope of exposing the abuse and inducing its abandonment, but also to correct a misapprehension which I believe to exist in the minds of some, that "Tenant Right," and the custom known as "Tenants' Rights," are synonymous terms; I therefore submitted the question standing upon the card to the committee of the club, and having met their approval it stands for discussion this evening. In a very short time after the series of subjects upon this card were made public, ample proofs were afforded me that the apprehensions which I entertained as to the confusion existing in the minds of some persons in respect to these subjects were well founded. Letters came pouring in upon me from all sides, some expressing surprise at my bringing forward such a proposition, others asking for an explanation, and not a few censuring such an inconsistent and unaccountable course of proceeding on my part, in thus changing my opinion on the subject of "Tenant Right," and pointing out the injurious effects it would have on the progress of that great and important principle. So far from inducing me to regret the step I had taken, I felt much gratified at the effect it had produced in setting men's

minds to work upon the subject, and in eliciting their feelings and sentiments upon it. Gentlemen, my opinions are not changed upon "Tenant Right;" I am, however, glad to note how much and how rapidly other men's minds have changed, and are changing. Happily, however, for the people of this country, happily for the national weal, that change is in the right direction, and either by custom or legislation, "Tenant Right" must, ere long, become the law of the land. The items which are usually computed in the "Tenants' Rights," to which I am anxious to direct attention are, dressings, half dressings, tillages, half tillages, fallows, half fallows, and the like. These may be divided into two classes—charges which consist of labour only; and charges for manure in substance, or expended on the land, and assumed to be only partially exhausted. As regards labour, it is clear that the proper performance of the seasonable and requisite labour in ploughing and preparing the land at a fair and reasonable price must be beneficial to the incoming tenant, unless he be so circumstanced as to be able to perform these operations himself. An in-coming tenant, however, may, and frequently does, live at such a distance from his new occupation as to render the performance of the work with his own men and cattle inconvenient; or he may have work to perform on the farm he is about to quit, for the in-coming tenant. It cannot be questioned that if such arrangements could be made for the out-going tenant to perform the requisite operations of the season, to be paid by the in-coming tenant, it would be advantageous, provided the work was performed in a *workman-like manner and on reasonable terms*. It is, however, indispensable that the work should be well performed. Every tenant thus changing from one occupation to another would pay and be paid for his labour, and the receipt would meet the expenditure. I am, however, of opinion that all labour operations should be matter of agreement between the in-coming and out-going tenant, and not the subject of custom, unless they are submitted to a strict scrutiny both as to the execution and cost. A right of entry should be given to the in-coming tenant with the use of a portion of the buildings for his cattle, so as to enable him to carry on the necessary operations, if he desired and found it convenient so to do. Were this my own individual opinion, I should have hesitated ere I ventured to bring it forward with so much confidence, but I am enabled to refer to several practical authorities in support of my views. Amongst these I will quote the observations of Mr. LAYTON COOKE, in his book on "Valuations," and in which, speaking on this subject, he says—"The valuations alluded to include charges for fallows, half-fallows, dressings, half-dressings, leys, fodder, manure, coppices or underwood, and hedge-rows. If the land in the districts in which this custom prevails were in better condition than that in the other parts of the kingdom, if the cultivation were more perfect, or any ulterior benefit were likely to accrue from it, there might be some reason, though an insufficient one, for adhering to it; but experience proves that land free from these extraordinary charges, particularly land of an inferior quality, is cultivated with greater spirit, and with infinitely greater success, in districts where this custom is unknown. Nor is this a result that it would be unreasonable to expect, as the effect of locking up a portion of the occupier's capital must unquestionably be to limit the number of competitors for land, to retard agricultural improvements, to abridge the profit of the tenant, to reduce the income of the proprietor, and to prejudice the gross value of the estate. Though obviously inimical to the interests of all parties, this practice has by frequent occurrence become so much a matter of course as almost to escape the observation of those to whom it is of the greatest importance. Of the tenants'

dues above specified, the fallows are paid for according to the quantum of labour bestowed upon them, that is to say, according to the number of times the different operations are *stated to have been repented*, whether they have been *judiciously or economically executed or not*; to this charge are added the rent and taxes. Half-fallows are charged on land that has borne one crop of corn subsequent to its being fallowed. The charge for dressings includes manure produced upon the premises, and the cost of the removal and distribution thereof. Half-dressings are charged upon land from which one crop has been taken subsequent to the manuring, and if on turnip land fed off with sheep; this comprehends also a charge for folding. Any manure that may be unappropriated is also subject to charge. An acreable charge is imposed for leys, varying in amount according to the number of years the land has been seeded. The fodder, straw, and chaff, are included in the inventory. The coppices or underwoods are paid for down to the stub; viz., for each year's growth of the different falls or periodical cuttings; and the wood in the hedge-rows, beyond what may be sufficient to reinstate the fence, is, in some instances, also an object of valuation. The aggregate of these items frequently represents a sum bearing a large proportion to the amount of the farmer's capital, and affords opportunities, which are not always lost, for practices of the most disreputable description. It is assumed that no one would embark in agricultural pursuits unless he anticipated a profit equal to at least 10 per cent. per annum on the capital employed; he would, consequently, be unwilling to part with any portion of his capital, unless he obtained for it a rate of interest commensurate with this expectation. The only means he has to secure an equivalent for the amount absorbed by these valuations on taking a farm is to deduct the interest thereof from the annual value of the land, free from such charges, and the reduced sum would be the rent of land subject to these valuations. The following statement shows the effect produced by the extraordinary charges alluded to, and, to a certain extent, accounts for the difference in the value of land of similar quality in districts where these valuations prevail, compared with those in which they are unknown—

The rent of a farm of 200 acres, unfettered by valuations, £	
at 30s. an acre, is	300
If the extraordinary charges average £3 per acre, the sum to be paid by the incoming tenant is £600, and the deduction of 10 per cent. thereon is.....	60

Which reduces the rent subject to valuations to..... 240
 If applied to the fee simple, the reduction it causes in the value of the estate cannot be mistaken—

£300 per annum, at 30 years' purchase, is..	£9,000
£240 per annum, at 30 years' purchase, is..	7,200

Causing a deficiency of.. 1,800

in the value of the fee simple, and producing a loss to the proprietor of 20 per cent. on the value of the property, whether retained in possession or disposed of, and three times the amount of the sum he is presumed to have originally received for tenant dues. The question is, however, put in a more favourable point of view than it would generally assume; for as the principal items of valuation consist of labour and other acreable charges, not dependant on produce, the amount might be, and frequently is, as high upon inferior soils as on those of greater fertility, and diminishes in a great degree the value of the land: for instance—

Rent of 200 acres, free from these charges, is	£150 equal to 15s. per acre.
Interest on £600 as before, is ..	60 equal to 6s. per acre.

Reduces rent, subject to valuations, to..... 90 equal to 9s. per acre.

being a reduction of 40 per cent. on the value of the estate; and in cases where the valuation of tenants' dues, upon a similar description of land, exceeds £3 per acre, or where the land is of a still lower quality, it occasions a fearful diminution, involving possibly an amount equal to a moiety of the value of the property. Tenants who have paid for these items on entry are entitled to be reimbursed on quitting; but a landowner could not appropriate his surplus capital to a better purpose than to paying the amount of these inventories, and re-letting his estate free from all such incumbrances, at proportionably improved rents." The counties in which this species of valuation is principally found are Kent, Sussex, and Surrey. In a work published some time ago by Messrs. Kennedy and Grainger, "On the Customs of the various Counties of England," the same view is taken. It says that in many instances every exertion is used to make up a bill without reference at all to the value of that for which the money is paid; whereas, in other parts of the country, a man sees and knows that he has value received for his money. I believe it will be admitted, on all hands, that in the districts to which I allude, in the words of a gentleman who was called to give evidence on the subject before the Agricultural Customs Committee, "a fraud is committed upon the incoming tenant when he comes in, which, in self-defence, he himself commits in turn when he goes out." Now, gentlemen, you are aware that there has recently been an inquiry on the subject of agricultural customs, and that a great many practical men have been examined, some of whom have been accustomed to valuations, while others are extensive farmers, who have long given their attention to the subject. I shall, in order to support my view of the injustice and bad working of this system of valuation, briefly call your attention to a few extracts from the evidence of some of those gentlemen. Mr. Barnes, of Kent, in giving his evidence before the Agricultural Customs Committee last session, said—

"In the Weald of Kent, the payments made there to the outgoing tenant are for the underwood down to the stubb, the fallows, including rent and taxes and manures, and generally speaking half manures, but they are in some cases now being bought off by the landlords."

The fact is, these valuations have been found so onerous, from their not being productive—unlike that which we want in the case of tenant-right, namely, that a man should receive compensation for that which he has put into the soil—that no one can say that the benefit is at all commensurate to the amount of payment. The most important evidence on this subject was given under rather peculiar circumstances. I apprehend it will not be treason against the House of Commons—at all events, as the House is not now sitting, I shall not stand any chance of being placed in the custody of the Sergeant-at-Arms—it will not be treason against that house to say that the gentlemen who composed the Agricultural Customs Committee as a whole were anything but friendly to the subject brought before them (Hear, hear). I do not know whether we can say that there were more than three members zealous in the cause; perhaps there were one or two who might be doubtful, and all the rest were dead against us (hear, hear). Fortunately, however, we were able to bring forward a phalanx of competent witnesses, who stated facts within their own knowledge and which were incontrovertible. Of the fifty-one or fifty-two witnesses called, you will find that about forty-nine were called by the advocates of tenant-right; and that they all supported that view of the question. When it came to the defendants' turn to call witnesses, they brought forward two or three; and I will give you a specimen of the manner in which they attempted to cast obloquy on

the question of tenant-right. They called gentlemen who faithfully and clearly described "tenants' rights" in their own district, and who also inadvertently most severely upon those "rights." But mark, gentlemen, what was the object of those who called them? Why to confound tenants' rights with tenant-right; and to damage the great question of tenant-right by showing, on the evidence of one or two practical men, how unjustly and unfairly it operated in a particular district! Now, the strong evidence on this subject was that given by Mr. Clutton, a gentleman residing in the neighbourhood of Reigate. Mr. Clutton's experience in such matters is well known; he is known to be a man extensively engaged in his profession, and in whom the greatest confidence can be placed; and though I have not the pleasure of knowing him, I am prepared to say, after a careful perusal of his evidence, that it appears to me to have been given with the utmost straightforwardness and fairness, and it is, I have no doubt, in full accordance with his experience. It answered not, however, the purpose for which it was intended. The attempt was so glaring that he was the last witness called: although they had only called one or two before, they then closed the inquiry. Now, on the question which I have brought before the club—that of the injury which tenants suffer in these districts from this species of bastard tenant-right, and which it has been attempted to mix up with the real tenant-right, for the purpose of mystifying the whole subject—on that question I will read to you the evidence given by Mr. Clutton, and I have no doubt it will tend to convince you of the correctness of the position with which I started. Mr. Clutton is asked—

In the county of Surrey is not there a tenant-right existing to a very great extent? Yes.

What is the prevailing custom of compensation that exists? I will describe to you the custom.

Do so, if you please? Where the full custom of the county is spoken of, and where the tenant speaks of being paid a full valuation, according to the custom of the country, that means that he is paid for dressings, and half-dressings, of dung, and lime, and sheep foldings, for ploughings and fallows, including the rent and taxes of the fallows, half-fallows, and lays.

Naked fallows? Yes, whether naked or otherwise; seed sown with the spring corn.

That is the seed of the clover or rye-grass? Yes; the underwoods down to the stem, hay and straw at a feeding price, the hay and straw being at a market price where the half dressings are not paid for; these valuations are settled by two valuers, or their umpire.

Have you stated to the Committee the whole of the articles for which compensation is generally given in Surrey? Yes, by custom.

You have stated it promotes a system of fraud and falsehood among the farmers, and even extends to the labourers; will you state in what way it has that effect? It takes place principally in the half-dressings; by which I mean, and which is generally meant in the county, those manurings from which only one crop of corn has been taken. Where manure has been put on at a distance of time it is exceedingly difficult to check the quantity or quality of the dressings, and we find that very false returns are made of it.

Both of the quantity and of the quality? Yes; both of the quantity and of the quality.

You find in many cases where farms are about to be given up, they scatter down an inferior and smaller quantity of manure, and claim for it as dressing? They work up to a quitting.

They work out a false account? They work out the farm, and put in inferior manure.

To receive payment for it as if it were of good quality? Yes; having been so imposed upon at starting, they feel justified in playing the same tricks upon their quitting; it is frequently done.

Where the tenants have a right of remuneration for dressings and half dressings, are they paid for the cake as well?

They are paid for the manure, the value of which is thereby increased.

The value of the cake is taken in the value of the manure; Yes, but not as a proportion of the cost of the cake.

In consequence of the extended use of cake, has it risen in price to the consumer? Yes.

Do you attribute it to that cause? No doubt.

With regard to manures, do you find that there is any difficulty in ascertaining the value of manure when it is in the yard; it is more in the half dressings and the whole dressings that you think the difficulties and disputes occur? There is not much difficulty in ascertaining the value of the manure while it is in the yard; there is a great deal of difficulty in ascertaining the value of the manure after it has been carried out and mixed with the soil, even that from which no crop has been taken; the difficulty is increased of course with half dressings.

Do you find a disposition among the tenantry to lessen those payments, by desiring the landlord to take the dressings and half dressings? They are desirous of having them bought up.

Again, Mr. Clutton says—

Then as to the half-dressings, meaning dung applied in a former year, you stated you had great difficulty in ascertaining the quantity and quality that had been applied? Yes.

Inasmuch as it has been made on the premises, you have no test to go to—no tradesman's or merchant's bill, as you would for bones, but you are obliged to rely upon the evidence of the tenant and his labourers? Yes.

That you consider an objectionable custom? Yes.

With regard to the payment for naked fallows, though they belong to rather an obsolete mode of farming, probably it has a fair though unavoidable claim, as long as that system exists? Yes; naked fallows are not very much practised; but whether they are naked or bearing a green crop, they are equally paid for.

Is it not the case, that in other counties, where root crops have been substituted for the naked fallows, though the ploughings and harrowings may be allowed for, no one would think of allowing for the rent and taxes on the turnip crop? No, I think it is peculiar to Surrey.

Therefore that is a claim arising out of an old practice of farming, which, although the motive is gone, has somehow or other been allowed to continue in Surrey? Yes.

Then of course you consider the half-fallows still more objectionable and unreasonable? Yes, I do.

And what you chiefly object to in the custom of Surrey is the half-dressings and the half-fallows? Yes, that is the principal objection.

Do you find that appraisers are appointed by tenants to go over the farms, and tell them how to make a high valuation? Yes.

You have known that? Yes.

To make the highest possible charge? Yes; they go over to tell those tenants how they may get up their valuations.

You have found that those allowances have been so onerous on the incoming tenant, that in some instances landowners have been induced to buy them up, and discharge their estates, because they were found practically to limit the choice of tenants, and to lock up the capital of those who had been induced to take their farms? That has been done extensively.

That landowners have bought them up? Yes, particularly the half-dressings and half-fallows; those being the items of valuation in which the tenant feels he is most liable to be imposed upon, and where there is the least check.

You say it has limited the choice of tenants and locked up capital; do you mean that farms are not so readily let in Surrey, owing to this heavy tenant-right? It has a tendency to lower the rents of the farms.

Do you find the rent of land in that district is lessened as compared with other parts of England where you have been employed as an agent? Yes.

Within your own knowledge you state that fact? Undoubtedly.

Now, I would have you pay particular attention to that point. That is the material difference between these valuations and the system of tenant-right as we understand it. The farmer should in all cases be required to

produce his bills, and to show what quantity of cake and bones had been used; but in the case referred to by the witness, it does not appear necessary that it should be shown that any artificial manure at all has been purchased and applied. Anything that can be scraped up in the shape of manure, anything which can possibly be called by the name, is spread over the land; a charge is made for dressing or half dressing, and there is no possibility of ascertaining anything with respect to the value; custom gives effect to the charge. After being asked the question which I have read, with respect to tradesmen's or merchants' bills, Mr. Clutton's examination continues—

Do you not find that the disadvantage of the Surrey tenant-right is, that the same money is paid for the bad farming as for the good farming? Yes.

That is the mischief of the tenant-right in Surrey? Yes; if the paying for the tenant-right ensured our getting what we pay for, there would be no objection to it; but we know from practice that it is not possible.

A Mr. Boniface, of Sussex, who is the agent of the Duke of Norfolk, is then examined. He is asked—

Then the payment for dressings is for the manures? Yes; made on the land, and from which no crop has been produced. Half-dressings comprise the dung from which one crop has been produced. So with regard to lime, where no crop has been produced, or if it be in the heap on the farm, it is paid for at the full cost. If it has produced one straw crop, then it is half the cost.

You say that you have a difficulty sometimes in ascertaining what is the real claim for half-dressings? Yes.

What was the nature of the half-dressings; was it dung employed? Dung and lime. The difficulties I have experienced have been, first, as to the quantity applied, as to which you must take the statement of the person interested; and the next difficulty has been as to the quality of it.

Those were manures that had not been purchased? Manures that had not been purchased.

Where of course no bills could be brought forward to corroborate the statement? Yes, just so.

So that, you see, these gentlemen, both of whom were called, as I said before, for the express purpose of damaging the real question of tenant-right, point out most clearly the distinction between the one and the other. They say, that wherever evidence can be adduced, such as that of the bills, as to any expenditure for artificial manure or for cake upon the farm, they find no difficulty in estimating the value; they say that they are sufficient judges of the value of manure to set a proper value upon it where cake has been used. But the great complaint which is made has respect, it appears, to claims made where, as it is here pithily expressed, *no value has been received*. Now, with respect to the manure and the labour—the two principal things to which I desire to direct attention in reference to the question under discussion—I will just read one or two sentences from the evidence of Mr. Heseltine, of Lincolnshire, who is, I dare say, personally known to a great many gentlemen in this room; at least he is well known in Lincolnshire as not only an extensive but an experienced farmer. In a few words, this gentleman shows the Lincolnshire system to be, in two or three important particulars, that which I contend the general system ought to be—that for which the objectionable customs in the counties which I have named ought to be exchanged. With respect to labour I find the following question:—“The out-going tenant ploughs up the wheat stubbles?” The answer is, “If he agree with the in-coming tenant.” So that it is a matter of agreement; and in such a case there can be no doubt that the in-coming tenant will take care to have an arrangement by which he will have work properly executed, or value received, for his money. The custom, so far as I can understand the

expression, comes into operation only when there is no in-coming tenant. "If the out-going tenant had ploughed, he would be allowed to receive according to the custom of the country." That follows the answer which I have just read—"If he agree with the in-coming tenant." So that it is perfectly clear that where there is an in-coming tenant the custom does not come into operation; but if there be an in-coming tenant, the out-going tenant who has ploughed is entitled, according to the custom, to be paid. The witness adds, "The out-going tenant would be paid for all the labour he has done upon the farm *consistently with good husbandry.*" Now there is the material distinction. Although there is a custom existing in Lincolnshire by which the out-going tenant ploughs, yet that ploughing is the subject of an agreement between him and his successor, if there be one; and this again is further qualified by the stipulation that the labour performed must be "*consistent with good husbandry*" (Hear). Now the evil of which I have to complain in reference to this question is, in fact, a very simple one. You are of course aware that when the question was placed upon the card, the evidence from which I have quoted had not been given. My opinions on the subject were based upon Messrs. Kennedy and Grainger's work, published some few years ago. What I desire to fix your attention upon this evening is, the contrast between the two sorts of tenant rights. In the one case there is no means whatever of ascertaining what is the quality of the manure, or what quantity has been put on the land; neither is there any means of ascertaining whether the work has been well executed or not. On the other hand, under the system of tenant right which we advocate, you can have information on both points. By the production of the bills, and from the testimony of experienced men, you have evidence as to the outlay which has been made; and as regards Lincolnshire, which I hold to be at the present moment the county to which, above all others, we may look for an example of what tenant-right has done and what it can do—in the case of Lincolnshire, I say, you have it clearly pointed out to you, that though there prevails a custom which gives the in-coming tenant payment for labour, the matter is still open to an arrangement between the out-going tenant and the in-coming tenant; and, at all events, the work must be performed consistently with good husbandry. Gentlemen, I intimated to you at the outset, and I beg now to repeat, that I have always felt that this question is one which should be dealt with by men practically engaged in the profession of valuing; but, having taken great interest in the question of tenant right, and having at length become convinced that there was great mystification with respect to the two species of tenant-rights, if I may so term them—the one of which I call tenants' rights, the other I designate tenant-right—I thought it would be useful to afford a body of men like yourselves an opportunity of considering the subject, and of eliciting that information which we are anxious should emanate from this club, and go forth to the agricultural world, in order that all may in future be able to distinguish between that which is good and that which is bad under the name of tenant right. And I have been confirmed in my opinion as to the propriety of the course which I have taken—however imperfectly I may have performed the task—by the circumstance which I have just mentioned, namely, that there has been lately the most ingenious attempts to mystify these two questions, and to damage the real question of tenant right, that the ingenuity of fourteen or fifteen experienced members of Parliament could possibly have devised (Hear, hear). Gentlemen, having made these remarks, I shall sit down, fully convinced that the discussion on this subject will call forth, from practical men, observations and information of far

greater value than it has been in my power to place before you.

The Rev. J. B. WARREN said: I consider the question which has been introduced this evening a very important one, affecting, as it does, not only the tenant, but the landlord. I am glad to find, too, that the question of tenant-right—using that expression in its common acceptation—is now resolving itself into a question of fair dealing, as between tenant and tenant, as well as between landlord and tenant. It is a question which we ought to consider in a temper which at all times becomes those whose grand object as agriculturists it should be to increase the produce of the land fairly, honourably, uprightly, and for the benefit of the people at large (Hear, hear). It strikes me that, in the way in which the subject has been introduced by Mr. Shaw, it is fairly open to discussion as a question between tenant and tenant, so called. And I would, in a very humble spirit in reference to this matter, appearing here in the double capacity of landlord and tenant, submit to you whether, when we are considering this question, we should not, first of all, endeavour to cast out the beam in our own eye, before we attempt to remove the mote out of our brother's eye. If we enter upon the discussion of the question without such a feeling, we shall be very apt to be misled. I have often felt, and I do feel more and more strongly, when I hear this subject discussed as it affects the rights and interests of agriculturists, that they of all others ought in this country to be upheld and respected; for they are the labourers in the soil, and it is the soil which maintains the people (Hear, hear). I think, therefore, that all matters relating to the cultivation of the land should in these troublous times have precedence. The great point now to be considered is the rights of tenants—tenants so called, in respect of their holdings. But we have also to regard the rights of property. We are not by any means to overlook the way in which parties become tenants (Hear, hear). The landlord has surely a right to deal with his property fairly towards himself; but then he is also bound not to abuse his property to the hindrance and hurt of those who depend upon it for their living. And when we look to the landlord for the occupation, we have a right to say to him, "You should mete out to us the same measure that you expect to be meted withal. You ought not to receive our money, in the shape of rent, unless you give us a fair opportunity of making that rent, as we are bound to do" (Hear, hear). I speak rather feelingly on this subject. I am the occupier of some land, which is as good as any in the county of Essex. Some of the land which I hold was formerly said to be the garden of Essex; but I do feel—I feel it as a Christian minister; and I do not say this at all out of disrespect to a man who is now departed, but with a view of speaking the truth. I say it is a cruelty to have land on any terms, good land, some of the best in the county, so managed, that it requires years to put it into such a condition as will grow you a fair return for your outlay. I mean, of course, a fair rent to the landlord, and that remuneration to the tenant which he ought to receive: for you are not to "muzzle the ox that treads out the corn." The tenant has a right, in my humble judgment, even before that of the landlord—a right to be paid for the sweat of his brow (cheers); but, at the same time, it is not for a moment to be supposed that the landlord is not to be respected also in all his rights (Hear, hear). The point to which I would especially direct attention is the way in which land is managed. As regards my own farm, when I first occupied it, its condition was very similar to that described in the quotations which Mr. Shaw has read to us. I had a quantity of straw, such straw, indeed, that it was almost a shame to call it by that name. When I went

into a field to shoot, a year before I took the farm, I was up to my knees in weeds; and I give you my word of honour, and my bailiff would give evidence to the same effect, that when I burnt the weeds, in a field of ten acres, to which I more particularly allude, I spread ten loads of ashes per acre; you may imagine, therefore, how many cart-loads of weeds there must have been in that field. As to the manure to replenish the earth, the straw was thrown down, and, there being no stock scarcely, beyond cart-horses, this manure was valued to me as good manure; whereas any chemist, after analyzing it, would have declared that it was worth little more than the ashes of the straw would have produced. Consider the case of a tenant having to pay for such manure as manure of the best description, and that, too, in the very first year, which is the most difficult of all to any tenant, because he has so much to pay on entering into possession. Nay, if he have not a good season, this payment throws him, as it were, on his haunches, and he scarcely knows how to proceed. Under such circumstances, he has the greatest difficulty in obtaining any assistance; for the condition of the land is well known, and every one is aware that it cannot produce in the next year, or perhaps for years to come, what it ought to produce, considering the outlay necessarily made by the in-coming tenant. I do consider that it is very important to consider what is the condition of the manure when you take a farm; I do not hesitate to say, as regards this subject, and I think this point ought to be more fully understood, that landlord and tenant should be as one when they have to come before a court of justice. If a tenant abuses the land, tenant-right would surely give the possessor or the in-coming tenant a right to compensation for the damage which has been done. If there is to be justice at all, justice should award damages for injury done to the land. Whether it be one talent or ten talents, you have no right to abuse what has been entrusted to you; you must employ it for good; and if you bury it in the soil, you must expect to have it taken from you. But if you do worse than this, if you leave the land in such a condition that if the in-coming tenant farm at all he can only do so at a loss, he has surely a right to a remedy. Some gentlemen have exclaimed this evening at the idea of such a return as 10 per cent. being obtained by tenant farmers; considering that we are told in Scripture that some talents produce ten, twenty, and one hundred-fold, I should think it strange indeed if we could not command so small a return as 10 per cent.; and I cannot but conceive that nothing but gross mismanagement could prevent us from doing so. Surely such a state of things could only arise from the want of due consideration from the profligate state of the times. It is to be feared that many men, who would have abundance and to spare if they would but take care of it, waste more than they consume, and then complain that they have too little! Of course, while we consider tenant-right in reference to the public we ought also to consider it in reference to private parties. The question is one which should be dealt with fairly, and I do think that if we are to have a jury of disinterested men, it must be formed of half and half. (Hear, hear, and laughter.) When the land is in such a bad condition as we know it must have become in some parts of the country, through the customs which prevail to the injury of such property, how, I would ask, are you to find new tenants for it? Is it to be expected that the landlord will buy up the valuations, if I may so express it, in order to blind the eyes of the in-coming tenant? It never ought to be so. Except under peculiar circumstances, the landlord ought not to be expected to buy up tillages. There is one point in reference to tillages which Mr. Shaw has not touched upon, though, in my opinion, it is extremely important; I refer to the manner in which

the work is performed. There are two ways of doing such work; if you plough well, deep-stir the land, and have proper grubbers, you get from the land a sufficient amount of produce; but if you do the work at a bad time out of spite to the landlord; or if, again, being dissatisfied at having to go out of possession, you neglect cultivation, and do not care whether the work be well or ill performed, great injury will generally arise; and it is very important that the in-coming tenant should know how the tillages have been performed. I would only say, in conclusion, that it appears to me that the difficulties in the way of the in-coming tenant are considerable; and I do think that, considering the increasing population, there ought to be a commission appointed to go round and procure by day information to be discussed, if they please, at night. At all events, I wish to see all parties awake and alive to a question which becomes so important when we see the population increasing by thousands; and I would add, that we ought to consider this increase a blessing, instead of turning our population out of the country, as it were, to go and seek a living abroad. Let us aim at such a state of things that we shall be able to say, "Blessed be God, that with an increase in population He has given us an increase of happiness;" and, if we are guided by what we read in Scripture, we shall come to the conclusion that such is the proper result.

Mr. BEADEL said: Mr. Shaw, in introducing the subject, let fall some observations which have induced me to rise on this occasion. He said the subject was one which belonged peculiarly to valuers; and as I happen to be included, whether fortunately or otherwise, in that class, I feel bound to make one or two remarks. In doing so, I will endeavour to confine myself as far as possible, strictly to the subject stated on the card, leaving other subjects, or other ramifications of this question, to be discussed on future occasions. The question, as stated by Mr. Shaw, is, "The pernicious consequences resulting from the payment by the in-coming to the outgoing tenant for tillages and manure made on the farm, according to the customs of some districts." If I rightly understand Mr. Shaw's meaning, his observations applied particularly to three counties—Kent, Surrey, and Sussex. He certainly glanced also at Lincolnshire as a pattern (laughter). He first endeavoured to draw a distinction—and I think the distinction is a marked one—between what he has designated this evening as tenants' rights and tenant-right. Now, whatever I may think on the subject of tenant-right, I will reserve my opinions on the question for a future occasion, and will confine myself to what is mentioned on the card, namely, tenants' rights; that is, all such matters and things as the out-going tenant expects to be paid for by the in-coming tenant. Mr. Shaw considers that the custom which prevails in this respect in the three counties specified is objectionable, and I am quite sure that in this opinion every Englishman will concur when he knows that what the tenant is called upon to pay for is what he can neither see nor value. I think there can be no difference of opinion amongst us on this point; but it must be exceedingly objectionable that a person hiring a farm, on coming into possession of that farm should be called upon to pay for that which has been done without seeing it and being able to form an opinion of its value. I quite agree in the evidence given by Mr. Clutton that there is a great deal of deceit frequently practised in reference to such matters. It so happens that I have been engaged professionally both in the county of Surrey and in the county of Sussex, and I have frequently assented to things without feeling at all certain that I was doing right: but there was no avoiding it, because no direct evidence could be obtained (Hear, hear). The next point which I gathered from

Mr. Shaw was this—that what you can look at and handle there can be no objection to pay for. Now this was consolatory to me as an Essex man. In that county we do not pay for anything but that. Though I would not pretend for a moment that Essex can vie with Lincolnshire, yet I must say that we do not there pay for half-dressings and half-fallows, and in some very large districts it is not customary even to pay for labour and manure. I do not find as the result of my experience that this circumstance at all militates against good and husbandman-like cultivation of the land (Hear, hear). Mr. Shaw suggested that the landlord was the proper party to buy up tenants' rights. Now on that subject there may be some difference of opinion; but it really appears evident to my mind that landlords are the only parties who can buy them up, and for this simple reason: the valuations, whatever they may be, upon a farm have grown out of a custom, and the custom could not be taken to any one but the party who originally let the land to the holder. It is exactly like the case of a rectory and a vicarage. A vicarage is in fact something which was granted away from a rectory, and a similar observation will apply to the custom of which I have been speaking. I perfectly agree, therefore, with Mr. Shaw that the landlord is the proper party to buy up the valuations, and I am also satisfied that the sooner landlords do buy them up and put an end to the present system the better will it be, not only for the tenantry, but also for the proprietor. For it is to be remembered that it is not live but dead capital which we are now considering. It is capital which does not fructify; it is comparatively unremunerative, and it remains just where it is until the in-coming tenant becomes an out-going tenant, and having been, as it were, cheated himself, has an opportunity of returning the compliment by cheating the gentleman who succeeds him (laughter). If the landlord were to buy up such matters he would secure a better class of tenantry. A person who comes to look at a farm in this position finds that it will take so much more capital than another farm of the same extent, and this may deter him from taking that which is offered. By abstracting so much from the floating capital you prevent the farmer from employing his capital beneficially to himself and the landlord. The landlord himself is injured, for every man must admit that if a farm is well and properly cultivated the landlord is as much benefited as the tenant. We all know that if we have a poor farm of our own, that which prevents us from keeping up the rent is its bad condition. If it were properly cultivated, the manures properly made, and the fallows properly done, there would be no trouble in letting it, because the inert capital required would be so much less than in the case of a farm out of cultivation, and because you would not have to live so long upon trust. I am now stating my own opinion as the result of experience, and I am quite willing to be a target for others to shoot at (Hear, hear). I will not, however, trouble you with many more remarks. As regards the difference between tenants' rights and tenant-right it has been drawn by Mr. Shaw, who has stated that by the former he means those things for which the in-coming tenant has to pay on entering into possession; whereas, the matters included under the term tenant-right possess this advantage over those just mentioned, namely, that they are tangible, permanent, and visible. So far tenant-right may be entitled to consideration but that the two things are not identical, I deny. I do not go the length of my friend, Mr. Shaw, in asserting that the gentlemen who examined the question in the House of Commons, by amalgamating the two questions, as it were designed to throw dust in our eyes; but it is quite certain that, in what they said, they were talking about tenants' rights,

and that in doing so, they did, in fact, confound them with tenant-right. That subject may, however, be discussed at some future time: I refrain from entering into it at present. I will only say, in conclusion, that the more you reduce the amount which the tenant has to pay on taking possession of a farm, the more you reduce the necessity for his advancing a large amount of capital which is to be inert, the more will you benefit the tenant, and in so doing, benefit the landlord.

Mr. STOKES: Suppose you do not find a tenant for a farm when it becomes vacant, who, in that case, pays the tenant's rights?

Mr. BEADEL: The landlord. That occurred in two instances last Michaelmas. We were not able to let the farms, and the landlord paid, not tenant-right, but tenants' rights; that is, he paid the valuation which would have been paid by the in-coming tenant had the farm been let.

Mr. LATTIMORE: There is one point on which I certainly agree with Mr. Beadel, and that is, that the getting rid of the troublesome question introduced this evening rests entirely with the landowners. The question before us is simply this, whether the existing custom, which has nothing to do with tenant-right (Hear, hear), and which has been suffered to grow up by the consent of the landlord and the passive assent of the agent, is attributable, as a fault, to those parties or to the tenant, who, in order to get possession of the farm, is obliged to submit to the condition imposed. I know, from practical experience, or at least on the testimony of friends of my own, who have gone into Surrey, the pernicious effects of entering upon farms under such circumstances. A gentleman on my left (the Rev. J. B. Warren) has made some observations with respect to the former bad condition of land to the possession of which he himself has succeeded; this land being, I believe, in Essex. Now, I would just put this question to that gentleman—under what circumstances was the land in question held by the previous tenant? If we can learn from him upon what terms the former tenant held, we shall be able to judge better as to the merits of the case, and we may think that some additional rights were necessary to enable the party to cultivate the estate in a proper manner.

The Rev. J. B. WARREN: He and his father had been tenants for 20 or 30 years.

Mr. LATTIMORE: On what terms?

The Rev. J. B. WARREN: The terms were most liberal.

Mr. LATTIMORE: Was there a lease?

The Rev. J. B. WARREN intimated that such was the case.

Mr. LATTIMORE: This is almost the only case of the kind of which I have heard. Such cases are certainly the exception, and not the rule. The observation was made by one of the preceding speakers, that a tenant could not obtain an advance of money upon a farm in such a condition as that described. Now I would put it to you whether, under present circumstances, this object is likely to be effected. The existing state of the law is well described by the evidence of Mr. Stewart, who is certainly an impartial witness. He says, the old notion was that the agricultural tenant was a mere husbandman of the land, and his claim as regarded his holding was an exceedingly weak one; long terms, or leases, being looked upon generally with suspicion. Now, under those circumstances—and mark, it is to a great extent the present state of the law—you can hardly expect any man to exert himself to put land into a good condition; into such a condition, that is, that the successor may take possession with advantage to himself. To illustrate this, I would mention a case which lately came under my own notice: I was in Scotland last year, when a lease ran out which was held by an excellent practical farmer; and

this gentleman found that, in consequence of the high condition of the farm which he had occupied, so high were the biddings at the end of the lease, that there was no chance whatever of his remaining in possession; and he was, therefore, compelled to quit the farm. Now the position in which that gentleman was placed certainly operated upon the minds of his brother farmers in the Lowlands. They said, "We have heard a good deal of tenant-right, and it is surely wanted here: such a tenant-right as all honest men would desire to carry out." Every one saw, in fact, that what was wanted to complete a good system of cultivation in Scotland was an equitable tenant-right; that while leases laid a good foundation, something more—that which is called tenant-right—was necessary to secure fertility to the soil (Hear, hear). If a law had existed, under which tenant-right was enjoyed, perhaps we should not have heard, this evening, the complaint as to the former condition of certain land in Essex. I, for one, am not prepared to admit that we should be justified in passing a severe vote of censure on any man for leaving land out of condition, unless we had ample proof before us that he had full security for any outlay, and could therefore entertain a just confidence in making it. Now the same gentleman to whom I have just referred has made some remarks with respect to the rights of landlords. I am quite sure that we wish for equal justice to both parties (Hear, hear). As observed by Mr. Beadel, the landlord would be benefited by an improvement in the position of his new tenant, if I should not rather say by the enjoyment of security on the part of the old one. But I would just ask whether the landlord may not give all that can be desired.

The CHAIRMAN hoped the speaker would endeavour to confine himself to the real question before the meeting.

MR. LATTIMORE: I will do so: I believe the question is the pernicious consequences that result from the existing state of the law. Now I believe the law has grown up from the want of an equitable acknowledgment of the rights which attach to the tenant farmer's capital. As to the mode of getting rid of the evil, it rests with the landlord himself. I frankly admit that on reading the question as it stands on the card, it appeared to me to have a somewhat contradictory character, and to be somewhat calculated to mislead landlords. A sort of reply appears to be furnished by the evidence of Mr. Clutton. I thought, when I read that evidence, that it evinced a little bit of the science of land-craft; we have had priest-craft and king-craft in other ages, and I thought within myself, "This, perhaps, is the age of land-craft" (laughter). Mr. Clutton's evidence went to show the difficulty of doing justice to the landlord. Now, I agree with Mr. Beadel that the landlord would always be benefited by doing justice to the tenant; and if there be any absurd custom in existence which operates against the tenants' interest, the removal of it is the best way of doing justice to the farmer, always remembering that two blacks can never make one white. I argue, then, that it rests entirely with landlords and their agents to get rid of this obstruction, and to put us on a sound and equitable footing. As regards the claims of the out-going upon the in-coming tenant, I maintain that there should be one simple, general law. As there is a law of debtor and creditor to regulate the ordinary commercial transactions of the day, so also should there be a law with respect to the question under consideration; which would prevent all mistakes about the value of what is paid for. As "value received" for "goods delivered" must be expressed in commercial dealings, so should there be "value received" in the case of the farm; the evidence of practical men being required to settle the claims of the out-going tenant in respect of

improvements on the estate. Now, gentlemen, if we divest our minds of the mystery in the evil sometimes involved in reference to this question, we shall come to the conclusion that if any evil exists under the present system it is not in the power of the tenant to remove it; and I will venture to remark, as regards the districts where these various customs have grown up, that the majority of farmers whom I know would be glad to get all the farms to be disposed of to-morrow, if they could have security for the outlay to be made upon them. What a man has bought he has a right to sell: this has been said by candidates at an election (laughter). If we can get this matter simplified, and placed on a solid and substantial footing, we shall have the brushwood cleared away, upon which we may plant the stately oak, which would grow up for the honour and advantage of this country (cheers).

MR. HAWKINS: We are in Suffolk in the same position as they are in Essex; we only pay there for what we receive—mucks, tillages, &c., and I think it is fair that the tenant should receive remuneration on that account. On some farms it is, I know, the custom to perform only a part of the tillages. On the estate upon which I reside we only give two clean earths and a half. Mr. Hawkins then alluded to the remarks of the Rev. Mr. Warren in reference to the bad condition of a farm in his occupation, and deprecated the making of such remarks.

The CHAIRMAN interfered, and deprecated all allusion to matters of a personal nature.

MR. HAWKINS: In some parts of Suffolk the manure made in the last year belongs to the landlord; but I think the system pursued is rather reprehensible, for the tenant who goes into possession of the farm often finds very little manure, and what there is, is of such a description that it is hardly worth having. The tenant would be in a much better position if, instead, he had to pay for manure which was made for him. We all know that where you pay for seeds, tillages, hay, and thrashing to the out-going tenant, it is natural for the farmer to make as much as he can at the expiration of his term; I do not say unjustly, but in fairness to himself. A grazing farmer will not keep so much stock in the last year, when there is no tenant right, as he otherwise would. This circumstance must, of course, induce him to mow more of his seed for hay, and to leave a larger crop than the in-coming tenant requires. There are undoubtedly some things which require to be altered, but I do not think that in my county we pay, as a general rule, for more than we receive.

MR. BENNETT: In proceeding to address to the meeting a few observations on this subject, I experience considerable embarrassment, inasmuch as I concur, to a great extent, in the opinion of Mr. Lattimore, that the evil which has been stated from the chair is one which landlords have it in their power to remedy. I foresaw that, when I first saw the printed announcement of the subject of this evening's discussion. The matter does not appear to affect the farmers of England in general, but it places them in difficulties as regards their removal from one part of the kingdom to another. It is very important that they should know what customs prevail, and what they would have to pay out of their own latitude. Last summer I was called upon to go over a farm in the neighbourhood of Epsom, and a very valuable farm it was. However, it was ascertained that the terms on which a tenant left were so favourable to him, and so unfavourable to the incoming tenant, that it would require a capital larger by £1,500 to take it than it would require to enter upon a farm of the same size in Bedfordshire or the midland counties. Under such circumstances I felt called upon to address the landlord as to the impolicy of losing a most desirable tenant (for such

was the result) through such a state of things, and I put it to him whether it was not desirable that he should buy up such extraordinary tenant's rights, and thus enable a person to take the farm under the same circumstances as he might take one in other parts of the kingdom. But gentlemen are not always disposed to give a thousand or fifteen hundred pounds without appearing to receive any value. Considering that it is merely a question of an extra amount of capital to be found by the tenant, you will not find many landlords disposed to purchase these tenant's rights. The subject may be looked upon in two points of view. The custom is not so mischievous to the landlord as it may at first sight appear. No one but a man of capital can take a farm so situated. So far, there is an advantage to the landlord: a person without capital cannot creep into a farm under such circumstances, and thus the landlord enjoys greater security than he otherwise would do (Hear, hear). I do not regard that result as detrimental to the interests of agriculture. It is, however, desirable to have a greater evenness of custom throughout the country; and that a man should, on going into a farm, have "value received" for what he pays is only common justice; but I am not prepared to go so far as our excellent Chairman did in saying that a party has the same claim whether he have done his work badly or not. I never would be a party to the paying of the same amount for work performed in a wretched and slovenly manner as for work performed in a husband-like manner (Hear, hear); and I cannot understand how any one would think of thus fooling his money away. If a party called that ploughing which, in my judgment, was not ploughing, I should deal with the case accordingly. Let him call it what he pleased, it would be matter for consideration. There is no tenant-right that you can conceive under which we should not be open to difficulties of that kind: even supposing the Legislature were to pass an act establishing the principle of the right of the tenant to payment for unexhausted improvements, it must always be open for the consideration of men of business whether a claim was just or merely a visionary one, which could not be supported. I think that rather more has been made of what a man has frequently to pay than circumstances altogether warrant (Hear, hear). Mr. Shaw has made a remark in which I most fully agree, as to the desire which was manifested to swamp the question of tenant-right when it was before the Legislature last year. The kind of questions which were put shewed clearly enough that the object was to throw discredit on the whole question; and every person who was examined before the committee, if he would honestly state his feelings, must confess that he never went into a court of justice where he was more severely cross-examined than he was on the question of tenant-right (Hear, hear). There did appear to me to be more of that than a fair and proper enquiry would warrant. There seemed, in fact, to be a great desire to damage the question altogether, and to shew its utter impracticability (Hear, hear). It is stated, gentlemen, that the thing is impracticable—that the question of getting fairly at what a man ought to pay for is impracticable. Why the same thing was said with regard to the commutation of tithes (Hear, hear). And why did Parliament interfere in that case? Was it not because justice and the proper cultivation of the soil required it? Was it not that squabbles between the owners of land and the occupiers of the soil might no longer take place, and that if men will not come voluntarily to what is right and fair, the legislature must bring them to it? (Hear, hear). I contend that if, as farmers, we can shew that we have invested anything in the soil which we have not had an opportunity of taking out of it, we are the creditors of the landlord and the public (Hear,

hear). If after tenant-farmers have expended money in the improvement of the soil, any circumstance arises to cut off their connection with it, and they have no opportunity of taking out of the soil what they have invested, the common law of the land ought to give them a fair and equitable remuneration for what they leave to their successors. Gentlemen, to say that the object is impracticable, is to say what is not true, and it is to throw dust in the eyes of the farmers of this country. I say it may be done—done with as much justice to the landlord as to the tenant. I fully concur in the observation which has been made, that we ought to look at both sides of the question. I know that a landlord may be, and is, damaged by bad and slovenly cultivation; and, as I have stated before, I see no objection to strengthening the landlord to secure good farming. But there is no fairness in merely calling upon the tenantry to cultivate the land well, as is done at agricultural meetings throughout the country. It frequently happens that when a landlord's health is proposed, he will toast agriculture and exhort tenants to good farming; but then he refuses to give them security for good farming—we will not go into that question; and this, I think, is a fair ground of complaint against himself (Hear, hear). A circumstance occurs to my mind at this moment, which I think did much to direct the attention of your Chairman to this subject of tenant-right. Some years ago, Mr. Shaw came down to Bedfordshire, and he took an opportunity of catechising a party whose land, after being ploughed, exhibited a great many shoe-strings, which, he said, he had not expected to see in Bedfordshire. After he had made a few remarks of that kind, some of us, who felt the spirit of John Bull rising within us, turned round and asked him whether there might not be some cause for what he found fault with. One gentleman, a landlord, stated that having been accustomed to follow the hounds, he had not till recently been aware that there was so much bad farming on his estate; it had not produced, he said, more than £1 per acre, but having then got a farm into his own hands he had made it produce four times that amount. The question of the position of the tenant was then entered into, and it was admitted that if he had in fact done his utmost to improve the soil, the landlord might take possession of every penny's-worth; so that there would be no just right to call upon the tenant to improve until he had obtained security. There is one subject I feel bound to introduce, rather as a matter for inquiry than with any other view. When the subject of the diseases of cattle was brought before the last meeting, a gentleman present happened to say that he thought it was a dreadful thing for the farmers of England that such a horrible cattle-plague should be allowed to extend through the kingdom. On making this observation he was called to order. Now if at an ordinary meeting of this kind farmers are not allowed to go into the consideration of an evil which is the greatest ever known in this country, being no less than the poisoning of the beautiful flocks of this country—if farmers, I say, are not allowed to make the slightest reference to such a matter, I must say I think that some alteration is necessary. I do not know whether a fresh constitution of the Farmers' Club will be required, but I am certainly of opinion that matters immediately connected with the well-being of the farmers of this country are proper subjects for discussion.

The CHAIRMAN: Gentlemen, I am quite sure you will excuse me for a moment. If Mr. Bennett refers to the report, he will find that the observation about not alluding to politics did not come from the chair. When I addressed the meeting after the discussion, I said that I would not follow my friend by introducing politics; but the remark with respect to politics, of which he complains, was made by another party. With respect to the powers of this club, it has a perfect right to discuss any question. I consider that, having fixed a subject for discussion, however extraordinary it may appear, it has a perfect right to discuss it. But I am quite sure Mr.

Bennett will agree with me that we best promote the objects we have in view if, when we have agreed to discuss one question, we do not go into another. (Hear, hear.) The question which we had to discuss on the night in question was pleuro pneumonia, in respect of its treatment medically, scientifically, and practically. It was not whether it be proper to import foreign cattle, or whether the disease did or did not arise from a change in the laws; and I consider that if I had at once stopped any attempt to introduce such a subject as that, I should have been performing my duty much better than I have done to-night, in suffering two or three speakers to diverge from the matter in hand.

Mr. PARSONS: Being the only representative of Surrey in this room, I feel called upon to notice the slur cast upon that county with respect to its customs. The customs of Surrey have not, I think, been fairly stated. I have heard a good deal said about dressings and half-dressings, and Mr. Beadel has told us of a farm in the neighbourhood of Epsom where the payments required to be paid to the outgoing tenant were exceedingly heavy. I do not think the customs are understood. Having been born and bred in the county of Surrey myself, I must say that they are not those which have been described this evening. As regards the precise question before us this evening, I must say that I do not see how any pernicious consequences are likely to arise from the fact of the incoming tenant paying for seeds. The average payment is £5 per acre for the turnips and the seed, and pernicious consequences I cannot admit. Good certainly arises from the custom, as regards the relation between landlord and tenant. In the first place, the fact of a tenant paying for seeds on a farm shows the landlord that he has sufficient capital, and I cannot admit that capital so employed is dead. I say it is most necessary and useful that the incoming tenant should pay for such valuations, even for the sake of keeping up goodwill between landlord and tenant; and I believe that if this custom were abolished, great injury would arise from the abolition, as regards the agricultural interest. This, surely, ought to be avoided. We are already overburdened with poor-rates and other incumbrances; and instead of raising discontents amongst each other, we should try if we cannot agree among ourselves to act for the common benefit. The season has been a most adverse one, and the law has been so much altered, that we scarcely know what is our real position; we cannot tell how farming accounts will stand next year; but there is every reason to believe that they will be worse rather than better. I must say that I think it would be better to let the subject alone till we see how the new law, which comes into operation next year, will affect the interests of the tenantry.

Mr. MECHE: What about long fallows and hard dressings?

Mr. PARSONS: I beg to say that they do not constitute the general custom. I wish to observe, as regards draining, that the practice is either for the landlord to drain, as the Duke of Bedford does—in which case he charges 6 per cent. on the amount he expended—or the landlord finds the materials. I refer to two landlords especially, Col. Wyndham and the Duke of Richmond: Col. Wyndham does all the draining himself, and charges nothing; the Duke of Richmond you all know to be a good landlord; I need not, therefore, say anything about him. I do not wish to see landlords and tenants divided; I would rather see them acting together; and I must repeat that the county of Surrey has been much misrepresented, as regards the customs which prevail in it.

Mr. BODDINGTON: I beg leave to offer a few observations on the subject under discussion. I must say, that when I first saw the card I felt that the Committee

intended to make the question a grand matter of agitation, and the Club itself a sort of centre or focus for that agitation. But in the modified form in which the question has come before us to-night, it does not appear as though there would be any great degree of agitation: in fact, in its present form, I think the question is a very harmless one, and I think it is very doubtful whether any act of Parliament will be passed in reference to it; and even if there be, I do not see how you are to set aside private arrangements between landlord and tenant. I think that the putting of the question in the form in which it appears before us will divest the minds of landlords of any apprehension which they may have entertained, that you intend to have a finger in the pie, or, in other words, to touch the fee simple. I certainly think a great deal of unnecessary apprehension has existed. A gentleman remarked (referring to Mr. Mechi) at the dinner last year, that tenant-right was a mistake.

Mr. MECHE: I never said so.

The CHAIRMAN: We are discussing customs, not tenant-right (Hear, hear).

Mr. BODDINGTON: Then I repeat my opinion, that the question as it stands is a most harmless one. Wherever I go I find that tenants are pretty well satisfied: they do not express any desire for an alteration; and I think that ultimately this question of tenant-right will be entirely swamped by that which we shall have to discuss before long—of tenants' wrongs (Hear, hear).

Mr. MECHE: I have only one word to say. In the county of Surrey it has been found practically that the compulsory allowance made for a certain number of ploughings is occasionally very injurious to the incoming tenant; for there are many persons who prefer growing a heavy mangel wurzel crop on a single ploughing, and it is not right that such persons should be compelled to pay for five ploughings. That is one case in which compulsory payments act very injuriously.

Mr. PARSONS: I believe that it only occurs where it has been mentioned in the lease.

Mr. MECHE: I have always understood that it is the custom of the country.

Mr. ELLMAN: I have been waiting some time in the hope that some of my brother farmers would be induced to take part in the discussion, and anticipate what I had to say. But as that has not been done, and as allusion has been made to Surrey, Sussex, and Kent, perhaps it would not become me to leave this room without taking part in the discussion, and introducing what I think ought to be urged. As the three counties mentioned are more injured, if there be any injury, than other parts of the country, it does certainly appear to me astonishing that there are not more individuals here to-night belonging to those counties to take part in the discussion. I do not mean to infer from that, that the farmers of Kent, Surrey, and Sussex, are lukewarm; neither do I intend to imply that the question which has been introduced is not worthy of their attention. But, gentlemen, we have been stirred up to the quick for so long a time that we cannot safely trust ourselves to enter upon any question lest we should diverge into what some persons might call a political topic. I do not understand so much the difference between tenants' rights and tenant-right as some gentlemen who have spoken to-night. I must confess that I was somewhat startled, as His Grace the Duke of Richmond once was, at the word "tenant-right;" but when I heard the explanation of the Chairman that it was not intended to discuss the question which has been agitated so much throughout the country, namely, the tenant-right question, which has been taken up by two different parties in a very different sense, and perhaps with very different

feelings, I felt that I had been mistaken in my apprehensions. I do believe that the question has been misunderstood, and I am exceedingly glad to find now that the word employed on this occasion has reference to the settlement between the outgoing tenant and the incoming tenant. Perhaps I should have been better prepared to go into the question if a different word had been employed; and if the matters in question had been introduced, not as tenants' rights, but as matters of custom in the counties in question. With regard to the custom in the county of Sussex, I do not think we have there so much to complain of as regards the payment for valuations by the incoming tenant; we have not so much to find fault with in that respect as we have in reference to some other matters which affect us in that county. Now, being myself a tenant, having been so for some time, and being also a small landlord, I confess I do not see that any great hardship is at present inflicted on the tenant; nor do I think that the tenantry generally in Sussex would be very much benefited by a change in the system. The system prevailing in Sussex appears to me not to be one which any person, having entered into an agreement, can fairly complain of. He enters into the question before he engages the farm; and he thus knows perfectly well what he has to trust to, and what he has to pay. He knows very well that if the landlord were to take the payment upon himself, he would charge the tenant with the amount; and whether he pay the landlord, or whether he pay the outgoing tenant, makes very little difference to him. But, if I understand the matter rightly, fault is found that there is a want of capital to pay these valuations. I perfectly agree with the opinion of Mr. Hine, as expressed in his pamphlet, that farmers have not that capital to invest in the soil which manufacturers can command. That is the mischief—the want of capital. Well, then, if it turns upon capital, we must consider why it is that tenant-farmers do not possess capital; and how am I to consider that question without going away from the subject of valuation. But I will not depart from this subject; feeling quite sure that if I were to mention anything about Sir Robert Peel's bill of 1844 the Chairman would stop me. But it is impossible to discuss this question fully if we are confined to what are commonly called "tenants' rights" (Hear, hear). I perfectly agree with my friend on my right that the question is a perfectly harmless one, and I think persons will consider us lukewarm in the cause for entertaining so harmless a question. For reasons, into which I need not enter, there is not at present the best feeling between landlord and tenant; and, perhaps, the more we go into questions of this nature the less likely is it that there will be any improvement in that respect. I believe the whole of the aristocracy would be most ready and happy to meet us in order to settle this question, but they know not how to do so (Hear, hear). Perhaps they have not studied the question of valuations. It is only for want of knowledge on the subject that they do not meet us. I think if we could bring it home to their minds that it is necessary to have some alteration on the subject of these valuations, or anything else, they would be perfectly ready to meet all our reasonable wishes. I repeat that, so far as the county of Sussex is concerned, I do not think there is anything to complain of with regard to the payments by the tenant; but at the same time it would be exceedingly useful if in the county of Sussex, as well as in any other county, the landlords would lend the tenants a portion of the capital necessary on taking to the farm (laughter). I should be very glad, for example, if a landlord would relieve me from the expense of valuations (laughter). It is perfectly right for him to do so if he thinks proper, but I do not think it would be right

for me to require it, or to attempt to enforce it from him after entering into an agreement (Hear, hear). I hope that this question will be settled without quarrelling with landlords, for I believe that landlords are disposed to meet us amicably, at least through their agents.

Mr. MENCH: Give us your opinion of dressings and half-dressings.

Mr. ELLMAN: As I said before, there is nothing in the county of Sussex to be complained of, except that the farmers of the county, like those of many others, have not sufficient capital to farm the land. With regard to dressings and half dressings, I decidedly consider that if I had been at the expense of dressing my land for wheat, which is the practice in the Weald of Sussex, having sown in the spring of the year the seeds, I consider that those seeds would be much benefited by the manure. If the taking be at Lady-day, there is of course a clear advantage to the in-coming tenant, and he has a right to be paid. If, on the other hand, he takes, at Michaelmas, such manures as would benefit the in-coming tenant he expects and is willing to pay for. I am not sure that the valuation should not take into account other unexhausted improvements in the land. It appears to me to make no difference whether a man, in the case of 20 acres, only exhausts ten, or whether he expends £50 in draining; in either case he is equally entitled to receive payment for what he has done. It matters not what it is; the in-coming tenant or the landlord must be benefited by the improvements which the out-going tenant leaves on the farm, and I consider that all these things should be included in the valuation. I believe that if we were to talk a little of security, which some persons call tenant-right, in which the whole community is interested; if we were enabled to obtain security for all the improvements which, as tenants, we effect and leave behind, there would not then be so much complaint about the payments made by the incoming tenant to the outgoing tenant. Let the question be put fairly before the community at large. It is not, in fact, a question which is confined to landlord and tenant as regards the interest which should be felt in it; it extends to all classes; and I believe that if there were a general disposition to deal with it in the right spirit, a conclusion would soon be arrived at. I have spoken to landlords as well as tenants on this subject; and I have found the former as much disposed to give, as the latter are to demand, security: they appear, in fact, equally anxious for the settlement of this question. I do not apprehend that there will be that difficulty in settling the general question as some people imagine. But as regards the valuation question, it should, I think, have gone a little further, and included all unexhausted improvements, whether paid for by the incoming tenant or by the landlord.

Mr. CARTER: I feel called upon to make a few remarks with regard to the county of Kent. We have heard that county connected with Sussex and Surrey. I am happy to tell you that the customs and covenants existing between landlords and tenants in the county of Kent are most beneficial in practice. We are not there subject to any half-fallows or half-dressings; we are merely called upon to pay for workmanship.

Mr. BODDINGTON: Does the in-coming tenant take to the whole of the wheat crop?

Mr. CARTER: We leave at Michaelmas, and consequently there is no occasion for that. It is not done except when it is matter of arrangement between the outgoing tenant and the in-coming tenant. Perhaps the Weald may constitute an exception, but in the greater part of this county, certainly in all that part which is best cultivated, the custom is what I have stated.

Mr. HOBBS: When I entered the room I had no in-

teution of addressing the meeting, feeling quite sure that the subject would be so well introduced from the chair that no explanations would be required from me. But as most of the gentlemen who have spoken have so much connected the subject of tenants' rights with that of tenant-right, I feel called upon to make a few remarks. I am not surprised that gentlemen should have taken the course they have done, for I agree with Mr. Ellman that the subject of tenant-right is the most important one that we can discuss at the present time. Nevertheless, I do consider that it is the duty of the Chairman to see that we confine ourselves as much as possible to the subject on the card, namely—"The pernicious consequences resulting from the payment by the in-coming tenant to the out-going tenant for tillages and manure made on the farm." It would appear from the wording of the question that the Chairman is aware that it is in some districts called "Tenants' rights," otherwise I am quite satisfied that he would not have introduced it in the manner that he has done. I am quite sure that those who have taken up the important question of "Tenant Right," would not have used that term this evening if they had not found it generally employed in the districts where the customs which have been referred to are found to exist. It was more with a view of explaining the difference between the two kinds of tenant-right, than from any other motive, that such a course was pursued. I was not present when Mr. Shaw introduced the subject this evening; but from the remarks which have fallen from members of the club, who have spoken this evening, I gather proof that the committee did right in determining to bring the subject under our notice. Not two gentlemen who have spoken this evening have given a similar account of the practices which prevail in their districts; therefore I conclude that the matter is one requiring alteration, and worthy of the attention of the club. I think you will all agree with me, that the main object which we should keep in view is, the affording facilities for the investment of more floating capital in the soil. It has, I believe, been stated by Mr. Shaw, that a great part of the capital of the tenant-farmer is invested as fixed capital by the payment of tenants' rights in those counties where the practice prevails to such an extent; and if, as I believe to be the fact (and I think all present will agree with me on this point), if it be a general complaint in the country that there is too little floating capital invested in the soil, it is clear that by liberating a portion of the fixed capital, and turning it into floating capital, we shall have done something towards obviating the evil complained of. If a portion of the capital so situated were released, and brought into operation in some other form, there can be no doubt that the whole country would reap the benefit. But, gentlemen, I will not detain you any longer at so late a period of the evening, particularly as many of you have to attend a lecture of the Royal Agricultural Society. Let me say, in conclusion, that I agree with Mr. Beadell that this question is an important one, even in relation to landlords; and where landlords have capital at command, I think they would do well to employ it in releasing their tenants from this burden on their capital. I know that in my own county, for example, farmers are frequently called upon to make four or five ploughings, whereas in growing green crops, such as mangel-wurzel, if they were allowed to resort for that purpose to improved methods of husbandry, the result would be more beneficial to the landlord, to the tenant, to the labourer, and to the public at large. Mr. Ellman has mixed a good deal to-day with the landlords in the show-yard; and I am glad to find, from his statement, that the landlords, as a body, are ready to meet us on the question of tenant-right.

Mr. ELLMAN: I would not have it supposed that I

am come from the landlords to state on their behalf that they are prepared for a settlement of the question ("Hear, hear," and laughter). I tell you candidly that I have always been against them on the question of tenant-right; and I must say that, whenever I have in conversation explained the nature of what was demanded, I have never met with a single landlord who has not acknowledged that the tenantry in general stood in need of greater security.

Mr. WM. SHAW: I come from Northamptonshire, and I have only one or two words to say on this subject. I must say, first, that I think if by means of the improvements of the day, one good scuffing be sufficient, it must be very absurd to have four or five ploughings. I cannot defend the custom of my own country, for it is one under which a tenant who leaves a farm in a bad condition receives just the same as another tenant who leaves his in a good condition. I think it is much to be regretted that, in any part of the country, a person who drains his land, or feeds his cattle on oil-cake, should receive no more than one who has farmed in the worst manner.

Mr. WALTON said: I represent Hampshire; and, though, in my opinion, there is no tenantry superior to that of my own neighbourhood—(I live near Winchester)—yet I regret to say that we have no security. Even two years' manure we are compelled to leave behind; we receive nothing except for sanfoin. It is, in my opinion, much better for a farmer to pay for improvements effected on a farm, when he enters into possession, than to take a farm in bad condition without having to pay for improvements. We want a remunerating valuation for what is left. I have known many in-coming tenants take to farms which have been badly managed, which have required much more capital to bring them into good condition than would have been necessary to pay for two years' unexhausted improvements. It is my firm conviction that if landlords paid a fair proportion of the taxation of the country, and if the forests which abound were cleared, there would not be so many poor for us to support.

The CHAIRMAN, in replying, said: I am very glad that Mr. Hobbs has reminded me that many of us may be desirous of going to the lecture of the Royal Agricultural Society; independently of which, the time has arrived when we usually close our discussions. I will not occupy your time with more than two or three sentences. I, for one, feel very much gratified at this evening's discussion, although I dare say many of you feel disappointed; and sure am I that those who think this subject quite a harmless one feel most disappointed. ("Hear, hear," and laughter.) There are some circumstances which have afforded me great satisfaction, and none so much as this: that with all the desire which gentlemen have evinced to keep close to the question, they could not possibly keep away from that paramount question which we have not been discussing to-night. (Hear, hear.) That circumstance shows that I was, to a certain extent, right in putting this question on the card, and thus endeavouring to keep up the spirit of the real tenant-right; and if this question be such a harmless one, I trust it will at least do no harm. (Hear, hear.) There is one mistake which I am anxious to correct. It has been said that I have charged gentlemen who appeared before the Committee of the House of Commons with having sought to distort the question of tenant-right, and to throw odium on it through the medium of tenants' rights. Now I should be sorry if such a statement went forth uncontradicted. If I said anything which bore that construction, I must certainly have expressed myself very imperfectly. What I said was, that certain witnesses appeared to have been called for the purpose of mystifying

tenant-right, and in order that persons might not see the difference between tenant-right and tenants' rights. It was against the leaders that I made my charge, and not against the gentlemen who gave evidence. I gave Mr. Clutton full credit for having delivered his evidence like a man of business, and I have not the slightest doubt that everything which he stated, so far as his knowledge extended, was correct. At all events this discussion has given gentlemen from Sussex, Surrey, and Kent, an opportunity of speaking on this question; and one thing is now clear, viz., that if the customs of those counties are as good as some have described them to be, those of a very large portion of the country are very bad indeed (Hear, hear). I was also very glad to gather from Mr. Ellman—and I cannot suffer that to pass unnoticed—that a change is taking place in the minds of the landowners in reference to the question of tenant-right. Of all things, that is what we are most anxious to see; and if he can by his eloquence induce landlords to consent to an alteration, I am quite sure that we could not do better than by putting our hands into our pockets handsomely remunerate him for his services in prevailing upon landlords to give security to the tenant farmers. I do not know whether any gentleman is prepared with a proposition; but, if not, I wish to submit one, and I would remark that it applies especially to those districts which I have named. What I propose is affirmative of the question on the card: "That certain payments by the in-coming to the out-going tenant for tillages and manure made on the farm, according to the customs of some districts,

and commonly called 'Tenants' Rights,' in the opinion of this Club are pernicious in their consequences."

Mr. W. BENNETT suggested that the word "covenants" should be substituted for "Tenants' Rights."

Mr. THOMAS: Before you put the question, Mr. Chairman, I would remind you that it is taken for granted in the resolution that tenant-right is the panacea for all the evils which have arisen. I have not heard, since I took my seat in this room, a single word about the propriety or necessity for leases.

The CHAIRMAN: That is a distinct question.

Mr. THOMAS then read the question on the card, and said: I considered that one of the questions to be mooted this evening was whether any alteration could be recommended by this Club in the mode in which tenants leave their farms; but when I allude to this subject I am told that I am perfectly out of order.

The CHAIRMAN: I did not say that you were perfectly out of order. I thought you were going to enter on the question of leases, and it was solely with a view to prevent that, that I interrupted you.

Mr. THOMAS: I regret that the opinion of an honest tenant farmer should be stifled, but I bow to your decision.

After some conversation, the following resolution was adopted unanimously:—"That there are certain customary payments by the in-coming to the out-going tenant in some districts which are pernicious in their operation."

This terminated the discussion.

THE SMITHFIELD CLUB DINNER.

The annual dinner of the Smithfield Cattle Club took place on the 8th December last, at the Freemasons' Hall, Great Queen-street. His Grace the Duke of Richmond, the president of the club, filled the chair, and upwards of 150 gentlemen surrounded the festive board. The noble chairman was supported on his right by the Earl of Yarborough, late President of the Royal Agricultural Society of England, and by the Earl of Chichester, the present President of that Society, on his left: and amongst the general company assembled we observed—The Hon. Dudley Pelham; Lord William Lennox; Sir F. Lawley; Colonel Sibthorp, M.P.; Major-General Wemyss; Hon. H. W. Wilson; J. V. Shelley, Esq.; H. Wilson, Esq.; Harold Littledale, Esq.; John Kinder, Esq.; T. R. Barber, Esq.; H. Brandreth, Esq.; W. F. Hobbs, Esq.; Messrs. T. Umbers, Stokes, Grant-ham, Willinton, Muskett, J. Webb, S. Webb, C. Thompson, W. Shaw, &c.

The cloth having been removed,

The noble CHAIRMAN rose and said: Gentlemen, I rise to propose to the members of the Smithfield Cattle Club, and to their friends here assembled, that they should drink to the health of our gracious sovereign the Queen (cheers). Gentlemen, her Majesty has always proved herself to be most anxious for the welfare of her people, and in her domestic life she has practised all those moral and religious duties which adorn womankind (cheers). Loyal, we the Smithfield Cattle Club, and I may say too the farmers of England, ever have been, and I believe ever will continue to be (cheers). Gentlemen, amidst the wreck of monarchies, the confusion and the anarchy which unfortunately prevail in so many parts of the civilized world, we, I think all of us, have deep reason to be grateful to an all-wise and gracious Providence that our lot has been cast to live in the land governed

by Queen Victoria (cheers). Proud, gentlemen, we must be of our free institutions, which I hope and trust, and confidently believe, will long preserve the monarchy of this great empire for the weal of all classes of our fellow-subjects, in peace and good order. Gentlemen, I give you with three times three "The Health of Queen Victoria," and may she long reign over a free, a happy, and a contented nation (cheers). The toast was drunk with three times three and one cheer more.

The CHAIRMAN.—The next toast upon the list which I am about to propose to you, is "The Queen Dowager, his Royal Highness Prince Albert, the Prince of Wales, and the other Members of the Royal Family." It gives me great satisfaction at all times to propose at any meetings in this country the health of the Dowager Queen of England, who is so well known, even in the remotest parts of the country, for the universal kindness of heart which she has ever exhibited (Hear, hear). Gentlemen, I am happy to give Prince Albert, and I regret that it was not in the power of her Majesty and Prince Albert, this year, to attend our show-yard. I am delighted to say that Prince Albert continues to support the Smithfield Cattle Club in the best manner in which he can do so; because, depend upon it, that the example of an individual in high station, who sends his stock to be exhibited at our show-yard, is likely to be followed: and I am delighted to find that Prince Albert has gained some of your premiums on the present occasion (cheers). Gentlemen, with respect to his Royal Highness the Prince of Wales, one whose fate hereafter is of deep importance to this country, I look with confidence that, coming from a good stock and well educated, he will prove himself worthy of his illustrious parents, and govern the country hereafter in the only way in which it can be governed (cheers). The

Duke of Cambridge and the other members of the Royal Family, the sons of George III., ever have felt the deepest interest in the agriculture and agriculturists of this country; and I am happy to have seen the Duke of Cambridge so well, and enjoying so much the show-yard as he did this year (cheers). Gentlemen, it is not necessary for me to detain you further than to ask you to drink to "The Healths of the Dowager Queen, his Royal Highness Prince Albert, Albert Prince of Wales, and the other Members of the Royal Family."—The toast was drunk with three times three.

The CHAIRMAN.—Gentlemen, the next toast that I am about to propose requires no preface from me, for your attendance here to-day proves that you are deeply interested in the success of the Smithfield Cattle Club; deeply interested, because you believe that the exertions of this society do tend to the benefit of all classes of the community (cheers). Gentlemen, the show this year, as I am informed by those who are more competent than I am to give an opinion, is what would be called a "good show." But we cannot say that, in all classes of the cattle, we may not upon some former occasion have had an equal, if not a better one; but if I bow, as I do, to the opinion which has been expressed by the practical farmers, and those who have visited the show, with respect to the cattle, I think there is hardly one who visited that exhibition who was not pleased to see so very good a show, and so great a competition in the sheep classes. Upon the whole, then, I believe it to have been a good show; and I think the meeting here assembled proves that the society is going on well. But in these days, when men require more than the outward show to be convinced whether a society is sound or not, I may tell you that I heard to-day, with the greatest possible satisfaction, of the flourishing state of our funds (cheers). Gentlemen, I believe that the premiums which have been advertised to be given in the year 1849 will be paid without trenching at all upon the subscriptions of that year. And that is what I conceive to be trading upon a good and a sound basis (cheers). For many years I have had the good fortune to be present in your show-yard, and at meetings here, and I may say that I have ever found the members of the Smithfield Cattle Club most anxious that justice should be done to all competitors that came into the yard; but in giving this toast I ought perhaps to state that in such a society as this, whether flourishing or not, when animals are brought to the show for exhibition, we cannot be certain that amongst some of them one black sheep may not be found (Hear, hear). Gentlemen, the Smithfield Club, upon the advice of their stewards and their judges, found that great doubt was entertained as to the age of some of the stock exhibited in the yard; and they therefore pursued that course which I am sure you, as Englishmen, will think was the only one which they ought to follow. They called upon the individual who was so charged. They read to him the charge that had been made against him. They told him that, in accordance with the precedents of this club, upon such doubts being expressed (not by unsuccessful candidates, permit me to say, but by the stewards and the judges—men of the highest honour and integrity), they had appointed a committee to investigate the case. I, as the president, called in the individual. I stated to him that a committee would meet, and that he ought to be present to produce his evidence; and I recommended him at the same time to bring before that committee the books which he might keep. He replied that, after what occurred last year, and as great suspicions were then entertained, he had taken care to be quite right upon the present occasion, and would produce his books. The committee was appointed. He met them this morning. He produced the feeder of his pigs (Hear, hear). Gentlemen, he is not a farmer (cheers). Well, he met

the committee this morning, and upon being asked for his books he said he kept no books at all, and no memorandums. The committee inquired into the particular case before them, and called his feeder, and then the exhibitor, and upon his own evidence they were unanimously of opinion that he should be disqualified from taking the prize, because he had made a false return. The club then, I think most rightly and fairly, called him into the room, that he might hear the report read, and every word of the evidence which his man, in his absence, had given. He came; and upon his own evidence he was proved guilty. I deeply regret that this circumstance should have taken place; but the committee—and I entirely concur with them—thought that, if fraud exists, it is our business boldly and manfully to state to the world who the man is who disgraced the class he belonged to, and the club of which he was an exhibitor (Hear, hear). Gentlemen, he was not a member of this society; but I will narrate to you one part of the evidence, and will then leave it to the practical farmers whether they have any doubt upon the subject. He showed in two classes: in the first class he would have gained the gold medal, and the first premium. They examined him in reference to that; his story was a pretty fair one there; though, by-the-bye, it is not corroborated by his man, who did not hear the evidence which he gave. But then the committee most properly thought it right to test the other, in which he would only get the second prize; and there he admitted that the young sow had had pigs four days old, though he admitted signing a certificate that the pigs out of that sow were 14 weeks old, and that the sow had gone 16 weeks with pigs (laughter). Now, if anything in the world could be a better proof that "honesty is the best policy," it is the very case which I have now stated to you. I have thought it right to state this in giving the toast of "Prosperity to the Club," though of course it will be referred to in the award and report that will be made; because one of the only objections that I have ever heard made against premiums in agricultural societies is that they are liable to fraud. But there is no transaction of human life that is not liable to fraud; and if I prove to you that fraud has been committed, that it has been discovered; that it has been shown up, if I may make use of that expression, I think you will have reason to believe that the success of the Smithfield Cattle Club will continue. So long as the club is supported by the practical tenant-farmers of the country I have no doubt it will succeed, and I believe that the great body of them will agree with me in opinion that it is likely to promote great good in the country (cheers). I give you, therefore, with the utmost satisfaction, "Success and Prosperity to the Smithfield Cattle Club."—The toast was drunk with three times three, and one cheer more.

The Chairman then read the judges' award of prizes, and handed the several amounts to the respective winners. He next proposed, "The Health of the Successful Competitors in the Classes for Oxen and Steers," coupling with the toast, "The Earl of Leicester."—The toast was drunk with all the honours.

The CHAIRMAN gave, "The Successful Competitors for Cows and Heifers," and "Mr. Mann, of Fenny Stanton, who had gained the gold medal."

Mr. MANN returned thanks, and, in doing so, recommended the tenant-farmers to resort to the use of good bulls as one of the best means to improve the breed of their cattle (cheers).

The CHAIRMAN proposed, "The Health of the Successful Competitors in Long-wooled Sheep;" and Mr. WOOD acknowledged the toast.

The Chairman then read that portion of the report

which stated that the 10*l.* prize awarded to Mr. Whitfield had, for the reasons adverted to in his speech, been given to Prince Albert; and that the gold medal, also awarded to Mr. Whitfield, had, for the same reasons, been given to Mr. Barber (cheers).

His Grace next gave "The Successful Competitors in short-woolled Sheep, and Mr. Samuel Webb."

Mr. S. WEBB responded to the toast. Although he intended, at least for a time, to discontinue exhibiting his sheep, he should still remain a subscriber to, and member of, the Smithfield Cattle Club (cheers).

The CHAIRMAN gave "The Health of the Successful Competitors in Pigs," coupling with it the name of General Wemyss.

General WEMYSS acknowledged the compliment. As regarded his Royal Highness Prince Albert, whom he had the honour of serving, he believed it was not generally regarded as in accordance with etiquette to notice any member of the Royal Family as a subject; but he was sure his Royal Highness had given sufficient evidence to the agriculturists of England that he felt the warmest interest in their prosperity (cheers).

The Earl of CHICHESTER.—Gentlemen, I have been requested by the committee to propose to you "The Health of the President of this Club" (cheers). I was a little surprised at finding that so young a member as myself should have had intrusted to him such an important toast; but probably the committee were aware that, though a new member, I was not a new acquaintance of your noble president, but had had ample opportunities of knowing the value of his services, and of appreciating the wisdom of your selection in appointing my noble friend as your president (cheers). Before I had any connection with your proceedings I felt assured that this institution was one which claimed the active support of every true friend of British agriculture (cheers). I feel proud, therefore, at having the honour of being a member of your institution, and I shall always give my humble support to the promotion of that prosperity which, I am glad to hear, still attends the society. With these few remarks I call upon you to drink, "The Health of my noble friend the Duke of Richmond."—The toast was honoured with three times three and one cheer more.

The Duke of RICHMOND replied to the toast.—I have never (said his grace) been of opinion that the agricultural interest was the only one which ought to be considered in this great country; but I have always maintained the opinion that upon the prosperity of the agricultural interest was based the welfare and prosperity of all classes of the community (cheers). I am one of those who wish well to the manufacturing interest of our country. They are our great consumers. They are our fellow subjects. They pay allegiance to the same Sovereign. They are proud of the same institutions. Without their welfare, without the welfare of the commercial interests of this great country, we, the farmers, should indeed be at a loss; but, gentlemen, I cannot understand why the three great interests of our national industry should not be combined, one and all, in support of the basis of all, which is the agricultural interest of the country (cheers). I cannot better explain my views upon agricultural improvement, than by saying that I have witnessed in the last ten or twenty years very rapid strides towards that improvement. I see land which formerly could hardly be called cultivated, by a thorough good system of draining made to produce nearly double the crop that it did before. I believe that draining has been adopted to a very great extent; but I wish to see every acre of land that will pay for draining ultimately subjected to that process (cheers). And here I appeal to the monied interest of the country whether they had not better invest their capital in companies whose object is to promote drainage in their own country, than embark in speculations in far distant climes (Hear). When I speak to you of drainage I do so as a practical farmer, because I have a property in Scotland which I have largely drained; but I feel that if I had treble the capital I possess, I could make more money than most of the City men do now—that is, taking into considera-

tion their bad debts, which could not exist if they lent their money to the landed proprietors, who are willing to give them the first security for it. Whenever I travel about the country, it is my pleasure, as it is my habit, to go and visit the farms in the neighbourhood where I may for the time be staying; and I went the other day into a county (Lancashire) which is not famous for its farming; but I there saw some of the most astounding proofs that I ever saw of draining upon moss land. There were large tracts of country which formerly no horse could go over, and upon which I saw stubble which proves that the best of crops had been grown there, and a field of Swede turnips which would not disgrace some of the best land in Sussex (Hear, hear). I have made these remarks because I am satisfied that nothing is so calculated to give employment to the agricultural labourer, and to promote the interests of agriculture, as bringing new land into cultivation, and well draining the land which is in cultivation at the present moment (Hear, hear). There is not a gentleman here who can go to his home without seeing very many acres on his farm which would well repay the outlay for drainage. One other point to which I would advert, is that no farmer can properly farm land if the fields are not of a proper size (cheers). If the landlord will consent to drain he must cut down the ash trees; but if he will not do that I venture to say that those trees will effectually check every drain which he makes upon a field (Hear, hear). In conclusion, I thank you for the compliment you have paid me, and I trust the Smithfield Cattle Club may long continue to prosper (loud cheers). His Grace then proposed "The health of the Vice-Presidents, and particularly the Earl of Yarborough."

The Earl of YARBOROUGH, in replying to the toast, said that he did not know that anything had made him more alive to the importance of agriculture than the circumstance that, when a young man, he left Lincolnshire, and went into Devonshire to study, and, in doing so, left very large fields, to see the evils of very small fields (Hear, hear). In Devonshire he saw the inconveniences to which the farmers were subjected by having fields that were too small to be well cultivated, and so enervated by hedge-row timber that neither sun nor air could get into them. This was generally acknowledged to be an evil; and he hoped the day would soon arrive when it would be completely remedied. With regard to drainage, if encouragement were but given by the landlord, it was quite clear that the occupier was fully alive to the advantage to be derived therefrom. But to help him (continued the noble Earl), there must also be some security that the labour he is to bestow brings a return for his benefit, and gives him ample encouragement to prosecute improvements. I feel the importance of this, inasmuch as I happen to have property in a county where this principle has been generally acknowledged, as well as property in a country where, though it may be acknowledged, it has never been practised. I hope, however, that the day is coming when it shall not only be acknowledged, but when the landowners shall be ready to act up to it; for I am certain that it is for the interest of the landowner, for the interest of the occupier, and for the interest of all classes of the community, that they should do so (cheers). The noble earl concluded by again thanking the company for drinking his health.

The following toasts were then proposed from the chair:—

"The Judges," acknowledged by Mr. T. Umbers.

"The Stewards."

Mr. FISHER HOBBS, in returning thanks, said: My lord Duke and gentlemen, as senior steward I beg to return thanks on behalf of myself and my brother stewards for the honour you have done us in proposing our healths, and for the manner in which that toast has been received. I have used my utmost endeavours during the three years I have been in office to maintain the character of this Club; to effect which, I hold that part of the duty of the stewards, which consists in the appointment of the judges, to be the most important. I this year selected Mr. Chapman, a man of known integrity, and considered to be one of the best, if not the best, and most experienced judge of cattle in England. The gentlemen who were associated with him, Mr. Umbers and Mr. L. ft. are also men of high standing and reputation; and I am fully warranted in stating that their decisions have been based upon the soundest principles of judgment, honour, and integrity. I am glad to find that the opinion hitherto expressed by the public press, ridiculing our exhibi-

bition of stock, is becoming changed. And I feel persuaded that the more they mix among us, and the more they enquire into, and the better they understand our motives, the more highly will they appreciate the objects sought, and the benefits resulting from the operations of this club. It has been boldly stated that the fattening of the animals exhibited at this show resulted in serious loss to the feeder. I hold in my hand a correct and detailed statement of the cost of rearing and feeding the animal which took the gold medal last year, and I am prepared to show there remains, after paying all expenses, a profit of five pounds to the feeder. In retiring from the office of steward, I beg to assure you that I shall continue to do everything in my power to promote the interests of the club. Thanking you for the honour you have done me and my brother stewards, I have the honour to drink all your healths.

"The Honorary Secretary, Mr. Brandreth Gibbs, to whom they owed a debt of gratitude for the time and attention he had devoted to the interests of the club."

Mr. BRANDRETH GIBBS acknowledged the toast, and congratulated the Club, not only on the state of its finances, but on the popularity it had attained, numbering as it did amongst its exhibitors alike the prince, the noble, and the tenant-farmer. An additional cause for congratulation was the return of their noble president, the Duke of Richmond, whom they were all delighted to see amongst them once again. In concluding, he could assure them that his services as their secretary were entirely and cordially at their disposal (cheers).

"The Health of Mr. Brandreth, the Father of the Club."

Mr. HUMPHREY BRANDRETH, High Sheriff of Bedfordshire, returned thanks on behalf of his father.

The PRESIDENT, in proposing "Success to the Royal Agricultural Society," with which he coupled the Earl of Chichester, President of the year, observed, that although the noble Earl had not been in the habit of attending meetings of this Club, still he was associated with agricultural meetings in his own county. As an old friend, and knowing him to be zealous in the cause of agriculture, he had great pleasure in proposing him to fill the office of President of the Royal Agricultural Society, and he felt convinced that he would give the utmost attention to the duties of his office. His Grace adverted to the origin of the society, stating, that having witnessed the operations of the Highland and Agricultural Society of Scotland when residing there, he thought it strange that there should be no such Society in England; he named the subject to his friend, the late Earl Spencer, who brought the subject forward at a meeting of the Smithfield Club in this room. He himself had supported the proposition of his noble friend, which was also at the same time further advocated in an eloquent manner by their late lamented friend, Mr. Handley; and assisted by Mr. Shaw, whom he saw at the bottom of the table, the Society was thus brought into existence. He might therefore state that the Royal Agricultural Society had emanated from the Smithfield Club. He need scarcely enlarge upon the benefits which that Society was conferring upon agriculture. After some further remarks, His Grace concluded by proposing "The Royal Agricultural Society of England, and the Earl of Chichester."

The Earl of CHICHESTER returned thanks, and said that if he were not to make a few remarks in acknowledgment of the toast, he might appear ungrateful for the honour which had been conferred upon him, and which he could assure them he felt most deeply, however unworthy he might be to discharge the important trust of President of the Royal Agricultural Society, which the kindness and partiality of his agricultural friends had committed to him (cheers). The important society which he represented tended to circulate throughout the country a great deal of valuable information, to promote honest rivalry and competition, and that most important of all competition, the cultivation of the soil and the breeding of cattle; it also contributed most materially to promote, perhaps, a still more important object, and that was friendship between the different classes interested in the well-being of agriculture. It brought the practical mind of the tenant-farmer in contact with the better educated, though less practical, mind of the landlord. And he was quite sure, from his own personal experience, that it added to the happiness of both (cheers). In the course of that experience he had observed that great improvements had been effected, both in the science of agriculture and in the breeding of cattle, as well as in the relations

subsisting between the different classes of the agricultural community. And he believed that, whilst there was more of skill and of economy in the management of farms, there was also at the same time more of kindness and consideration in the treatment of the labourer (cheers). He had ample opportunity of knowing that in his own neighbourhood the condition of the labourer was greatly improved, and that he had improved both in intelligence and in his worldly circumstances, and was more contented than heretofore (cheers). He could only say, in conclusion, that, unworthy as he might be to occupy such a distinguished position as that of President of the Royal Agricultural Society of England, he could promise that, so far as diligence, zeal, and due attention to the interests of the society went, it would have, at all events, a President that would not be inattentive to its interests (loud cheers).

The CHAIRMAN then gave "The Butchers of the Metropolis," which was followed by

"Prosperity to the Manufacturing and Commercial Interests of this Country, and might they ever go hand in hand with the agricultural interest, their best and warmest friends."

Mr. LITTLEDALE responded to the toast; and "The Prosperity and Welfare of the Labouring Classes of the Country" having been drunk, the meeting broke up.

The dinner, provided by Messrs. Bacon, gave general satisfaction.

LIST OF THE PRIZES.

OXEN OR STEERS.

CLASS I.—The first prize of 30 sovs. to his Royal Highness Prince Albert; a silver medal to the breeder, Mr. Peter Davis, of Milton, near Pembridge, Hereford. The second prize of 15 sovs. to the Right Hon. Earl Spencer, of Althorp Park, near Northampton. The third prize of 5 sovs. to Mr. John Beasley, of Chapel Brampton, near Northampton.

CLASS II.—The first prize of 30 sovs. to Mr. W. Trinder of Wantage, Berkshire; a silver medal to the breeder, Mr. John Monkhouse, of The Stowe, Hereford. The second prize of 15 sovs. to Mr. Joseph Phillips, of Ardington, near Wantage, Berkshire. The third prize of 5 sovs. to Mr. Stratton, of Manningford Bruce, near Pewsey, Wilts.

CLASS III.—The first prize of 25 sovs. to his Grace the Duke of Rutland, of Belvoir Castle, Grantham; also a silver medal as the breeder. The second prize of 15 sovs. to Mr. John Clover, of Kirlington, near Newmarket. The third prize of 5 sovs. to Mr. R. Stratton, of Salthorp, near Swindon, Wilts.

CLASS IV.—The first prize of 20 sovs. to the Right Hon. the Earl of Leicester, of Holkham Hall, Norfolk; also a silver medal as the breeder. The second prize of 10 sovs. to Mr. John Manning, of Harpole, Northampton.

CLASS V.—The first prize of 15 sovs. to the Right Hon. the Earl of Leicester, of Holkham Hall, Norfolk; also a silver medal as the breeder. The second prize of 5 sovs. to Sir R. G. Throckmorton, of Buckland, near Faringdon.

CLASS VI.—The prize of 10 sovs. to Mr. Joseph D. Rob, of Catton, near Thirsk.

COWS AND HEIFERS.

CLASS VII.—The first prize of 20 sovs. to Mr. Thomas Griffin, of Borough Fen, near Peterborough; also a silver medal as the breeder. The second prize of 10 sovs. to Sir Francis Lawley, Bart., of Middleton Hall, near Tamworth. The third prize of 5 sovs. to Mr. Thomas Batson, of Kynaston House, near Ross.

CLASS VIII.—The first prize of 20 sovs. to Mr. Charles Bosworth, of Dishley, near Loughborough; a silver medal to the breeder, Mr. Christopher Scaife, of High Harrowgate, Yorkshire. The second prize of 10 sovs. to the Right Hon. Earl Fitzwilliam, of Wentworth Wood-house, near Rotherham.

CLASS IX.—The first prize of 20 sovs. to Mr. John Mann, of Fenstanton, near St. Ives, Hunts; also a silver medal as the breeder. The second prize of 10 sovs. to Mr. William Allatt, of Glington, near Market Deeping.

LONG-WOOLLED SHEEP.

CLASS X.—The first prize of 20 sovs. to Mr. Thomas Twitchell, of Wellington, near Bedford; also a silver medal as the breeder. The second prize of 10 sovs. to Mr. J. G. Bosworth, of Groetham, near Oakham. The third prize of 5 sovs. to Mr. R. L. Bradshaw, of Burley-on-the-Hill, near Oakham.

CLASS XI.—The first prize of 20 sovs. to Mr. John Wood, of Hodsock, near Worksop, Notts; also a silver medal as the breeder. The second prize of 10 sovs. to the most Hon. the Marquis of Exeter, of Burleigh Park. The third prize of 5 sovs. to Mr. Richard Newman, of Harrowden, near Bedford.

LONG-WOOLLED SHEEP (NOT LEICESTERS).

CLASS XII.—The prize of 10 sovs. to Mr. Robert Benan, of Donnington, near Stow-on-the-Wold; also a silver medal as the breeder.

CROSS-BRED SHEEP.

CLASS XIII.—The first prize of 10 sovs. to Mr. John Hitchman, of Little Milton, near Wheatley; also a silver medal as the breeder. The second prize of 5 sovs. to Mr. J. R. Overman, of Burnham Sutton, near Burnham-market.

CLASS XIV.—The prize of 10 sov. to the Right Hon. the Earl of Leicester, of Holkham-Hall, Norfolk; also a silver medal as the breeder.

SHORT-WOOLLED SHEEP

CLASS XV.—The first prize of 20 sovs. to Mr. Samuel Webb, of Babraham, near Cambridge; also a silver medal as the breeder. The second prize of 10 sovs. to his Grace the Duke of Richmond.

CLASS XVI.—The prize of 10 sovs. to Mr. Samuel Webb, of Babraham, near Cambridge; also a silver medal as the breeder.

CLASS XVII.—The first prize of 20 sovs. to his Grace the Duke of Richmond, of Goodwood, near Chichester; also a silver medal as the breeder. The second prize of 10 sovs. to Mr. Samuel Webb, of Babraham, near Cambridge.

PIGS.

CLASS XVIII.—The first prize of 10 sovs. to Mr. W. M. Barber, of Uxbridge; also a silver medal as the breeder.

CLASS XIX.—The first prize of 10 sovs. to his Royal Highness Prince Albert, also a silver medal the breeder.

CLASS XX.—The prize of 5 sovs. to Mr. Pusey, M.P., of Pusey, near Farringdon; also a silver medal as the breeder.

THE SOCIETY'S GOLD MEDALS.

The gold medal for the best ox or steer in classes Nos. 1, 2, 3, 4, 5, and 6, to the Right Hon. the Earl of Leicester, of Holkham-hall, Norfolk.

The gold medal for the best cow or heifer in classes Nos. 7, 8, and 9, to Mr. John Mann, of Fenstaunton, near St. Ives, Huntingdonshire.

The gold medal for the best pen of long-woolled sheep in classes Nos. 10, 11, and 12, to Mr. John Wood, of Hodsock, near Worksop, Nottinghamshire.

The gold medal for the best pen of short-woolled sheep, in classes 13 and 16, to Mr. Samuel Webb, of Babraham, near Cambridge.]

The gold medal for the best pen of pigs, to Mr. W. M. Barber, Uxbridge.

EXTRA STOCK.

The silver medal for the best beast in extra stock to the Right Hon. Earl Spencer, of Althorp Park.

The silver medal for the best long-woolled sheep in extra stock to the Right Hon. the Earl of Radnor, of Coleshill.

The silver medal for the best short-woolled sheep in extra stock to Mr. Samuel Webb, of Babraham, near Cambridge.

The silver medal for the best cross-bred sheep in extra stock to Mr. John Hitchman, of Little Milton, near Wheatley.

The silver medal for the best pig in extra stock to Mr. George Turpin, of Uxbridge.

COMMENDATIONS.

CLASS XV.—Mr. Sainsbury's pen of Southdown sheep. The Right Hon. the Earl of Chichester's pen of Southdown sheep.

CLASS XVII.—Mr. Fojjambé's pen of Southdown sheep.

EXTRA STOCK SHORT-WOOLS.—Mr. Sainsbury's Southdown wether.

CLASS XVIII.—Mr. Peto's pen of pigs.

CLASS XIX.—Mr. M. Newman's pen of pigs. Mr. E. G. Barnard's, M.P., pen of pigs.

EXTRA STOCK PIGS.—His Royal Highness Prince Albert's pig. The Earl of Radnor's pig. Mr. W. M. Barber's pig.

JUDGES OF CATTLE AND LONG-WOOLLED SHEEP.—Messrs. Chapman, Umbers, and Loft.

JUDGES OF CROSS-BRED SHEEP, SHORT-WOOLLED SHEEP, AND PIGS.—Messrs. Denman, Lingar, and Saxby.

B. T. BRANDRETH GIBBS, Hon. Sec.

EXHIBITION OF IMPLEMENTS, &c., AT THE SMITHFIELD CLUB SHOW IN DECEMBER, 1848.

At no previous show of this club was the number of agricultural implements, seeds, roots, &c., so large as this year; the extraordinary enterprize and ingenuity of the people of this country which seizes at once upon every improvement that effects the smallest abridgment of labour was never so manifest as at this exhibition. Crowds of visitors thronged the galleries from the commencement on Wednesday morning to the close on Saturday night. Indeed, to every mind imbued with the spirit of nationality, the contemplation of the number of agricultural implements, and the improvements effected within the last few years in many of them, was calculated to awaken feelings of the most gratifying description. To attempt a description of the vast number and variety of implements exhibited in the spacious galleries of the Bazaar would more than fill the whole of our paper. A cursory notice is therefore all we are enabled to give. Amongst the old established and extensive manufacturers of agricultural implements, who displayed their usual variety, we noticed Messrs. Garrett and Son, of the Leiston Works, Saxmundham. Of the many useful implements exhibited by them their patent horse-hoe appeared to attract the most attention; and, for the character of our agriculture, we were glad to note that the demand for that implement is greatly on the increase: the following also were much sought after—his drills for general purposes, portable steam-engine, patent bolting thrashing machine, patent lever drag rake and hand and pipe tile machine. Amidst the numerous implements exhibited by Mr. Crosskill, his clod-crusher continues to occupy public attention. At the stand of Mr. Grant, of Stamford, his patent lever horse-rake held its usual place. Amid the numerous articles exhibited at the stand of Mrs. Mary Wedlake, of Hornchurch, the gorse-bruising machine appeared to excite considerable attention. Mr. Gooch exhibited his winnowing machines, and barley hummellers; Mr. Cambridge, of West Lavington, his portable thrashing machine; Messrs. Barrett, Exall, and Andrews, of Reading, their various thrashing machines and ploughs; Mr. Busby, of Newton-Je-Willows, his plough, horse-hoe and grass-land cultivator; Messrs. Howard and Son, of Bedford, their ploughs and patent harrows. Messrs. Stratton, of Bristol, their patent Norwegian harrow. Mr. Chandler, of Stockton, his patent liquid-manure drill; Messrs. Smyth, of Peasenhall, their well known corn, seed, and manure drills. The executors of the late Mr. Gardiner, of Banbury, his celebrated turnip-cutting machines. Messrs. Ferrabee and Sons, of Stroud, their Ducie cultivator, Parsons and Clyburn's patent corn and linseed crusher, and other implements. Messrs. Wedlake and Thompson, of Hornchurch, their general variety of implements. Weighing machines were exhibited by Messrs. James and Co., of Whitechapel road; Messrs. Burchfield and Son, of SmithfieldMarket; Mr. Norrington, of South-street, Finsbury-market; and Dowling and Hamshaw, of Little Queen-street. Mr. Smith, of Kettering, exhibited his improved winnowing machines. Messrs. Smith and Co., of Stamford, exhibited their chaff-cutting machines and other implements; Mr. Gooch, his patent sack-holder; Messrs. Deane, Dray, and Deane, of Swan-lane, London-bridge, their various mills and patent tank cleaner; Mr. W. P. Stanley, of Peterborough, his steaming apparatus; Mr. Weir, of Oxford-street, his liquid manure pump and wire netting. Bishop and Co., of Cheapside, a registered drainage level; G. Howe, his patent transparent water-gauge—a most impor-

tant invention. Mr. Hayes, of Elton, Hunts, a patent pegg thrashing machine. Tile machines were exhibited by Franklin, of Ampthill, Beds; Ainslie, of Piccadilly; Tasker and Fowle, of Andover; Clayton, of Upper Park-place, Dorset-square; Thomas Martin, of New Cross, Deptford; Thomas Richards, of Taunton. Fire-engines were exhibited by Deane, Dray, and Deane, and Read, of Regent-circus. Mr. Cornes, of Barbridge, near Nantwich, exhibited his improved chaff-cutter; as did also Mr. S. Smith, of Northampton; Bruckfield and Son, of Smithfield; Smith and Co., of Stamford; and Williams, of Bedford. Hensman and Son, of Woburn, exhibited their thrashing and other machines; James Comins, of Southmolton, his improved registered plough; R. Coleman, of Chelmsford, his patent expanding lever harrow; Phillips, of Bristol, his much admired horizontal turnip-cutting machine. Roller and other mills for crushing seeds, were also exhibited by Hurwood and Turner, of Ipswich; Whitmee and Chapman, of John-street, Clerkenwell; and T. Lloyd and Sons, of Old-street-road, Shoreditch. Mr. Richmond, of Salford, exhibited amongst other useful agricultural implements, a very compact little chaff machine, mills for oats, malt, beans, &c., and some excellent linseed crushers. A curious root washer was exhibited by Mr. Wm. Crosskill, of Beverley, which promises to come into general use; by turning the handle the action of the barrel in the water washes the roots; then, by turning the handle the reverse way the Archimedean screw inside the cylinder empties out the contents: his Norwegian harrow also attracted much attention. Specimens of asphalted felt, for roofing, were exhibited by F. McNeill and Co., of Bunhill-row, London; and Thos. J. Croggon, of Ingram-court, Fenchurch-street. Thomas Edgington and Co., of Old Kent-road, London, exhibited their unrivalled rick-cloth and tarpaulins, &c.; as did also E. J. Davis, of West Smithfield. Some beautiful specimens of glass milk-pans, bee-glasses, &c., were exhibited by Phillips and Co., of Bishopsgate-street Without, and T. Cogan, of Leicester-square. Thomas Bigg, of Great Dover-street, Borough, also exhibited his unrivalled mixture—the “Sheep and Lamb Dipping Composition,” for effectually destroying the tick, lice, and all other insects injurious to the flock, preventing the alarming attacks of fly and shab, and cleansing and purifying the skin, thereby greatly improving the wool both in quantity and quality, and highly contributing to the general health of the animal.

An increased variety of seeds and roots was exhibited, and of the latter there were some most excellent specimens. Messrs. Thomas Gibbs and Co., Half Moon-street, Piccadilly, seedsmen to the Royal Agricultural Society of England, fully maintained their position by the infinite variety of the seeds displayed upon their stand and the superiority of the roots of every description used for cattle food. The high standing of this old-established firm affords a guarantee for the excellence of the articles in which they deal. We must not omit to notice that some specimens of the Giant Sainfoin were exhibited here, which attracted particular notice. Mr. Skirving of Liverpool exhibited some very fine specimens of his improved sort of yellow and red bullock turnips, some of the swedes weighing as much 28 lbs. each: upon “Skirving’s swedes” comment from us is wholly unnecessary. He also exhibited beautiful specimens of those new hardy ornamental trees, the Arancaria Imbricata, and Cedras Deodora. Mr. Grove, of Great Baddow, Essex, exhibited some specimens of mangold-wurtzel which for beauty were unrivalled, and which are well known in Essex. Messrs. George Gibbs and Co., of Down-street, Piccadilly, exhibited their usual show of seeds and roots. We must not omit to notice a stand of gutta percha articles adapted

to agricultural purposes; we will refer at a future day to the general use this article is likely to attain for other as well as agricultural purposes.

PATENT DEEP DRAINING MACHINE, AND PATENT DEEP SUB-SOIL AND PULVERIZING MACHINE.—The ‘implement department of the Smithfield Show has been rendered especially attractive this year by the exhibition of two powerful instruments—a patent deep draining machine, and a patent deep sub-soil and pulverizing machine, the inventions of Mr. Joseph Paul, of Thorpe Abbot’s Hall, Norfolk, a large practical farmer of known respectability. The deep sub-soil and pulverizing machine unquestionably takes precedence of all the several sub-soil ploughs and pulverizers of which there are upwards of twenty varieties, and cannot fail to double the value of nine-tenths of the land in England, not excepting the inferior old pastures, of which unfortunately we have too many. The scientific observer is instantly impressed with the applicability of these powerful instruments for the purposes for which they are intended, and the results which Mr. Paul has himself obtained by direct experiment demand the immediate attention of the enlightened agriculturist. Universal attention was directed to these inventions, and it was repeatedly remarked that if England is destined to grow enough for her population, it would be by some such power as Mr. Paul appears to have discovered. Mr. Paul also exhibited a diagram of a plough, which by a peculiar and most ingenious contrivance fills up the drain with rapidity and exactness.

We cannot omit to notice the exceeding good order and regularity of the arrangements in the Show Yard of the Smithfield Club, and for which we consider the Club is deeply indebted to the stewards—Mr. W. Fisher Hobbs, Mr. Chamberlin, and Mr. Torr, and especially to the Hon. Sec., Mr. B. T. Brandreth Gibbs, who must be indefatigable in his exertions to get through a labour of such extent in such a short period of time. We are apprehensive that the weight of his duties will be increased by the alteration requiring the cattle to be all in the yard on the Saturday, so that the judges may make their award on the Monday, and the yard open to the public on the Tuesday, instead of the Wednesday, as heretofore.

THE FOLLOWING IS AN ACCOUNT OF SOME OF THE SALES EFFECTED AT THE SHOW.

Name of Owner.	Animals.	Purchaser.	Price
Earl Spencer	Short-horned ox.	Mr. Oliver, of Southampton	£45
Mr. J. Beasley, of Chapel Brampton	Ox	Mr. Bancroft, of Great Grimsby	£40
J. Phillips, of Wantage	Hereford steer..	Mr. Marton, of Salisbury	38gs
J. Stratton, of Pewsey	Shorthorned steer	Mr. Smith, of Salisbury	35gs
J. Clover, of Culling	Do.	Mr. Wenzell, of Folkestone	40gs
J. Manning, of Harpole	Hereford steer..	Mr. Slater, of Kensington.....	
D. Rob, of Catton	West Highland ox	Mr. Alder, of Esher	
H. R. H. Prince Albert	Do.	Mr. Harris, of Isle of Wight.....	
T. Griffin, of Peterborough	Short-horned heifer	Mr. English, of Chelsea	
Earl Fitzwilliam ...	Do.	Mr. Blott, of Wellingboro’	
Jno. Mann, of St. Ives	Durham cow. . . .	Mr. Major, of Folkestone	
J. G. Bosworth, of Greetham	Leicester sheep	Mr. Drake, Mile-End-road	
Thos. Twitchell, of Willington	Leicester wethers	Mr. Randal, of London-road	
R. Newman.....	Do.	Ditto ditto ...	
Marquis of Exeter.	Do.	Mr. Johnson, of Bermondsey.....	

Name of Owner.	Animals.	Purchaser.	Price
J. Wood, of Work-sop	Do.	Mr. Glass, of Lambeth-walk	
Duke of Richmond	Sthdown.wethers	Mesars. Kirby and Hancock, Park-st. Grosvenor-square	
S. Webb, of Babraham	Do.	T. H. King, of Brighton	
Ditto ditto ...	Do.	Mr. Slater, of Kensington	
Duke of Richmond	Do.	Kirby and Hancock	
S. Webb, of Babraham	Do.	Mr. King, of Paddington-street ...	
Earl of Radnor ...	Coleshill pigs ..	Mr. Snelling, of The Minories	
E. Wilfield	Essex pigs ...	Mr. Budge, of The New Cut	
Sir Thos. Wichcotes	Durham steer ..	Mr. Shepherd, New Cut, Lambeth	£40
T. W. Fouracra ..	Devon steer ...	Mr. Barton, Brighton	38gs
Edwd. Frost	Shorthorn steer	Mr. Page, Cross-street, Hoxton	36gs
Wm. Jones	Hereford steer..	Righton & Farrow, Reading	37gs
Earl of Arundel & Surrey	Sussex ateer... ..	Mr. Page, Lambeth Walk	£42
Evam Williams... ..	Hereford ox ...	Mr. Randall, London Road	£36
Earl of Harwicke.	Durham ox ...	Mr. Robinson, Cambridge	£40
Mr. Trevor, senior.	Hereford steer..	Mr. Slater, Kensington	£40
Mr. F. Orton ...	Lincoln ox ...	Mr. Sutton, Dalston	£36
Earl of Aylesford..	Devon ox	Mr. Kirby, Park-street	38gs
Duke of Bedford..	Hereford ox ...	Mr. Slater, Kensington	40gs
Mr. Jas. Webster.	Hereford steer..	Mr. Major, Folkstone	35gs
Earl of Radnor ..	Do.	Mr. Fenton, Davies-st., Berkeley-sq.	40gs
Earl of Leicester..	Devon steer ...	Mr. Waite, Wormwood-st., City	38gs
Hon. Col. Pennant	Shorthorned ox	Mr. Glass, Lambeth Walk	£33
Marquis of Exeter.	Do.	Mr. Gun, Charles-st., Hampstead-rd	£35
Earl of Warwick..	Hereford steer..	Mr. J. Mann, Croydon	£38
Earl of Radnor ..	Do.	Mr. Bull, Chapel-st., Westminster.	34gs
H.R.H. Prince Albert	Hereford ox ...	Mr. Wender, Chelmsford	38gs
Earl of Aylesford..	Devon ox	Mr. Bull, Albion-place, Hyde Park.	36gs
Lieut.-Col. H. Owen	Pembroke ox ..	E. Collingwood, Lamb's Conduit-st.	32gs
Mr. T. Batson ...	Hereford heifer.	Mr. J. Frampton, Poole	£30
Marquis Northampton	St.-horned heifer	Mr. Sumerfield, Buckingham	30gs
H.R.H. Prince Albert	Do.	Mr. R. Hale, High-st., Marylebone	£32
Earl of March ...	Hereford cow ..	Mr. G. Cook, Cambridge-road	
Mr. Chas. Bosworth	Shorthorned cow	Mr. Maples, Ashbourne	£30
Lord Southampton	Durham cow ..	Mr. Morey, Crawford-st., Marylebone	
Duke of Rutland..	Shorthorned cow	Righton & Farrow, Reading	

although young men, have distinguished themselves by uniting scientific and literary attainments with practical knowledge of agriculture, will be a sufficient guarantee for its utility. As a specimen of the useful information contained in the work, we subjoin the following comparison of the cost of thrashing by steam-power and horse-power :—

STEAM POWER.

Purchase of a 6-horse steam-engine (210L.), and a thrashing and dressing-machine (85L.)	£	s.	d.
One year's interest at 10 per cent.	..	..	30 0 0
2½ per cent. for repairs .. .. .	..	..	7 10 0

Yearly charge on 5,000 coombs corn .. £37 10 0

An average Day's Work of Mown Wheat or Barley, 80 coombs.

	£	s.	d.
1 man to drive engine	0	2	6
1 ditto to feed machine	0	2	6
Young man to untie	0	1	6
2 men on stack, at 1s. 8d.	0	3	4
1 man and 1 girl to put straw out of the barn	0	2	6
1 man to pitch straw	0	1	8
1 ditto to load	0	1	8
A girl to riddle spoutings	0	0	9
1 man to attend to chaff, corn, and colder	0	2	0

8 cwt. of coals 0 18 5

Interest on capital and wear and tear of machine, at 1½d. per coomb* 0 6 0

1 4 5

80 coombs £1 14 5

5d. per coomb.

HORSE POWER.

Purchase of a 6-horse power portable thrashing-machine, &c.	£	s.	d.
One year's interest on ditto, at 10 per cent. .. .. .	..	..	90 0 0
2½ per cent. for repairs .. .. .	..	..	2 5 0

Yearly charge on 5,000 coombs corn .. £11 5 0

Average Day's Work of Mown Wheat or Barley, 65 coombs.

	£	s.	d.
8 horses, at 3s. per day	1	4	0
1 man to drive horses	0	1	8
1 ditto to feed machine	0	2	6
Young man to untie	0	1	6
2 men on stack	0	3	4
4 straw-shakers—			
2 women at 9d.	0	1	6
And 1 man	0	1	8
1 man to pitch straw	0	1	8
1 ditto to load	0	1	8
2 men to riddle	0	3	4
1 girl or boy to fill sieves	0	0	9
1 man to turn dressing-machine	0	1	8
1 ditto to fill ditto	0	1	8
1 girl to potter	0	0	9
1 boy to clear away corn	0	0	9

2 8 5

Interest on capital, and wear and tear of machine, at 0½d per coomb 0 2 8½

65 coombs £2 11 1½

Over 9d. a coomb.

We have been favoured with the sight of a portion of a work, "On the Agriculture of Suffolk," by Wm. and Hugh Raynbird, which will shortly be published. The reputation of the writers, who,

* A slight allowance is made in consideration of the steam being employed for other purposes than thrashing.

SCIENTIFIC AND AGRICULTURAL EDUCATION.

MESSRS. NESBIT'S ACADEMY, KENNINGTON, NEAR LONDON.

On Thursday, December 14, a most interesting examination of the pupils of the above Academy took place in the school-room, in the presence of a number of ladies and gentlemen, who had been especially invited to attend. The room was, in fact, well filled; and, from the interest manifested throughout by the audience, it was evident that the efforts of the Messrs. Nesbit in the cause of agricultural and general education had not failed to be duly appreciated. A printed programme of the proceedings was distributed amongst the company, comprising recitations of choice selections from the English classics, and an examination in Botany by C. Johnson, Esq., of Guy's Hospital; in Mathematics and Natural Philosophy, by J. Inray, Esq., M.A.; in Geology, by John Morris, Esq., F.G.S.; and in Chemistry, by A. W. Hoffman, Esq., Ph. D., Professor of Chemistry in the Royal College of Chemistry.

Amongst those who were present, were C. Copland, Esq., M.A., of Kennington; John Matson, Esq., of Hackney; J. Morris, Esq., F.G.S., of Kensington; J. Inray, Esq., M.A.; W. T. Iliff, Esq.; John Mease, Esq.; F. Rowton, Esq.; C. Johnson, Esq., Professor of Botany, at Guy's Hospital; G. Whiting, Esq., Editor of the "Maidstone Gazette"; W. Shaw, Esq., Editor of the "Mark-lane Express"; H. Trumper, Esq., Buckinghamshire; James Agate, Esq., Horsham; R. Prosser, Birmingham; Glass, Simpson, and Hooper, Esqs., &c., &c.

It had been announced that C. Pearson, Esq., M.P. for the Borough of Lambeth, would take the chair at six o'clock; but Mr. Pearson not having arrived at half-past six,

Mr. NESBIT said he was confident that something unexpected had occurred to prevent the attendance of Mr. Pearson at the hour for commencing. In order, however, that there might be no further delay, he would suggest that Mr. Rowton should take the chair.

Mr. ROWTON having complied with this suggestion, said that, after the delay which had already taken place, he would not detain the meeting by making a speech, but would at once call upon his young friend, Master C. Agate, to recite an opening poetical address.

Master C. Agate then recited a poetical address, appropriate to the occasion, written by Mr. Rowton.

The following selections were then recited:—"Glenalvon and Norval (Home), by Masters Hutley and Trumper; Le Menuier sans souci (Andr  ux), by Master Iliff; Marmion's Defiance (Scott), by Master Matson; Absalom (Willis), by Master E. Agate.

Each of the above recitations elicited warm plaudits from the meeting.

An examination in Botany was then conducted by Charles Johnson, Esq., of Guy's Hospital.

Mr. JOHNSON said that, as he had already examined this class at length on the subject of Botany, he should only then put a few general questions to the pupils, in order to ascertain whether they retained what they had acquired.

The examination in Botany was then proceeded with. It comprised questions as to the grand divisions of the flowering plants; the properties and characteristics of the rosaceous plants; the subdivisions of different plants, and their several peculiarities; and other questions of a similar character. The answers were given with marked promptitude, and in no instance appeared to require correction from the examiner. At the close of the examination,

Mr. JOHNSON said: I have to announce to the company that from a previous examination of the pupils on Saturday last, I found that Master C. Agate and Master L. Cottingham had distanced their competitors in the race; and that I have adjudged to them the prizes. Only a single prize was in the first instance offered by Messrs. Nesbit; but in consequence of these two young gentlemen approaching so near to each other in the progress which they have made, it has been determined that two prizes shall be given (cheers). To the statement that these two have distanced their competitors, I should

add that, generally speaking, the pupils have acquired quite as much knowledge of the subject as it was possible for them to attain during the short time that many of them have made it their study (applause).

The CHAIRMAN: We are now, ladies and gentlemen, to have a debate on the question—"Are the mental capacities of the sexes equal?" I have no doubt you all feel with me that there is something barbarous in disputing at all on that question; and that it is almost a pity such a question should ever have been debated (Hear, hear). Still, as the question has been and is discussed, the young gentlemen appear before us as adventurous young knights who are ready to break a lance; and I trust you, ladies and gentlemen, will all, with their assistance, arrive at a just conclusion (laughter).

It was then formally proposed by Master Thorne, seconded by Master Trumper, and carried unanimously, that Master Hutley should take the chair. This was the prelude to a discussion, which was carried on in a very animated manner; and the various points of which, as they were successively put forth by the disputants, received due acknowledgment from the assembly. After a pleasing display of juvenile eloquence, a proposition was carried unanimously, to the effect that the mental capacities of the sexes are equal.

Charles Pearson, Esq., M.P., having entered the room during the progress of the discussion, at the close of it Mr. Rowton vacated the chair in order to make room for him.

Mr. PEARSON then said: Ladies and gentlemen, I may safely assure you that the hour at which I have arrived is not indicative of the habits of my life. Since I have been connected with this borough, and even with the corporation which I have the honour to serve, I have scarcely ever been too late for any appointment; nor should I have been so this evening had I not by mistake entered the engagement in my memorandum-book for seven o'clock instead of six ("Hear, hear," and cheers). However, the loss is mine. I have been here long enough to listen to a very spirited debate, conducted according to the best principles observed in the greatest houses in this country—(laughter)—and I can only say that these young gentlemen have manifested an aptitude for discussion which does great credit both to themselves and to their instructors (Hear, hear). I confess that in the early part of the debate I thought the fair sex rather roughly treated—(laughter)—however, the cause of that was perhaps explained by one of the very acute speakers towards the close, when he told us that those who were describing the fair sex disadvantageously had an interest in giving the preference to their own (laughter). I could not help thinking of the fable, with which I daresay you are all acquainted, that an artist having painted a lion being conquered by a man, he stepped out of the room, when a lion looked in. Seeing the picture the animal said, "Ah! this is all very well: but it must be recollected that if a lion had painted this, he would have represented a lion conquering a man" (laughter). So also if an assemblage of young ladies had discussed this question, and if, without being perceived by them, we could have heard what they said, I daresay they would not have shown any mental inferiority in their manner of dealing with the subject (Hear, hear). However, the gallantry of our young friends came to the aid of the ladies; and, whatever prejudice might do at the beginning, gallantry settled the question in the end. We all know that ultimately our friends did full justice to the female sex. Whether the young gentleman who said, "We will take this to our hearts," meant by that to give a pledge that he and his fellow-pupils would by-and-by take the ladies to their hearts, I cannot determine (laughter). The mathematical examination will now take place. I most earnestly request the gentleman who conducts it, not to throw any part of the duty on the Chairman. Education has marched on with such rapid strides since I was engaged in my juvenile studies, that I must confess myself utterly incompetent to take any part in the examination. I

recollect being present once at an examination in one of our model schools, when a learned bishop who stood beside me said to me, "Mr. Pearson, will you examine the boys?" I replied, "So long as they do not examine me, I shall feel very much obliged to them" (laughter). From the specimen which I had witnessed, I really felt that the right rev. prelate himself might have stood in a bad position if he had been examined by, instead of examining, his young friends (Hear, hear, and laughter).

JOHN IMRAY, Esq., M.A., the mathematical examiner, said: Mr. Chairman, although you have professed your want of acquaintance with this science, let me say that you have shown what constitutes the principal element of mathematics—namely, good common sense; the science of mathematics being intended to draw out that part of man's nature more than any other. Mr. Imray then put to the pupils a number of questions, embracing some of the most useful points in the sciences of mathematics, natural philosophy, &c., not omitting the methods of ascertaining the superficial and solid contents of different bodies. In this case, as in the previous one, the result was highly creditable to the pupils. At the close of the examination, Mr. Imray said: I consider the questions which I have already put perfectly sufficient. Before I sit down I must mention that on Friday last I gave the boys a very long and difficult examination, and was highly satisfied with the manner in which they acquitted themselves. I perceived that they had not got mathematics, as it were, by rote; but really knew the meaning of what they had been taught, having been instructed upon a system which is far better than that followed by the majority of teachers. I submitted them to an examination, as I have done now, by voice. I afterwards gave them a few exercises in writing; and I must say that amongst those who did best in both these cases, Master Charles Agate signaled himself the most. Not that the others were much inferior; but still he was the best, and I believe, therefore, that the prize in this class has been awarded to him.

The CHAIRMAN: We are now about to have another proof that devotion to the severer studies has not disqualified for the lighter kinds of proficiency. Master C. Agate, who won the mathematical prize, and is, as we have heard, among the good the best, will commence.

The following pieces were then recited: "King John and the Abbott" (anonymous), by Master C. Agate; "The Burial of Sir John Moore" (Wolfe), by Master Whiting; "Adieu à la Vie" (Gilbert), by Master Hutley; Scene from "Cato"—the dialogue between Cato, Scipionius, Lucius, Decius, and Junius—(Addison), by Masters L. Cottingham, E. Agate, Trumper, Hutley, and C. Agate. The last recitation at this period of the evening was that of "The Well of St. Keyne" (Southey), by Master Matson, which elicited special marks of approbation from those assembled.

J. MORRIS, Esq., F.G.S., then conducted an examination in geology. The questions had reference to the object of the study; the different classes of rocks, stratified and unstratified, together with their position on the map; the fossils found in rocks of various classes; the geological positions of coal, salt, gypsum, and the chief minerals of this country; the principal divisions and properties of the cretaceous group; the depositions of substances useful in agriculture, and the agricultural capabilities of different soils; the geological peculiarities of the east and south-east of England; the characteristics of the Weald, &c. The Examiner said at the conclusion, ladies and gentlemen, I last Monday subjected the pupils to a long and careful examination; and I may say that I found them taking a deep interest in natural science; so deep an interest, in fact, that I trust it will prove of the greatest service to them in their future career. Besides affording us amusement this evening, they have also shown their aptitude for picking up information. I may mention that between the Masters Agate and Cottingham the competition for merit was so great that I found it difficult to decide; but having given them a series of written examinations, Master E. Agate appeared to me to have answered them in the most clear and satisfactory manner. I thought therefore that to him the prize ought to be awarded (Hear, hear).

The CHAIRMAN said: I am sure we are all delighted to observe that this branch of science, geology, is receiving increased attention in the present day. It is a matter of great importance to all of us that we should have the wealth of the

earth developed for the benefit of man; and to these young gentlemen the study is of infinite value. When we find that the population is increasing at the rate of upwards of a thousand a day, and is pressing on the means of subsistence in a manner which sometimes threatens the nation with the most severe distress, if not with the dissolution of the bonds of society, we cannot but feel that attention should be directed to the increasing by all possible means the productiveness of the earth. We have been told that he who causes two blades of grass to grow where one only grew before, is greater than the conqueror of nations. I believe that the study of chemistry in connection with agriculture, and the scientific examination of the geological properties and qualities of the earth, will furnish us with such advantages that practically we shall have not only two blades of grass growing where one only grew before, but a dozen ears of wheat where only one ear was before obtained (Hear, hear). I recognize in the case of some of these young gentlemen the names of persons who have distinguished themselves by their practical usefulness in society. The name of Hutley is one which many of you well know, and I believe the young gentleman present (referring to Master Hutley) claims kindred with the gentleman to whom I allude. England has long boasted of her farming superiority. I imagine that now she will add another sprig to her wreath, and that, by combining scientific research with great practical industry and experience, the agricultural interest will attain a yet higher position. (Cheers.) I think it desirable that we should give this expression of opinion, seeing that the young gentlemen do not devote their time merely to studies of an ornamental character, but address themselves here to objects which are really useful. (Cheers.) Whether their names shall hereafter be written in the book of time as doing honour to their race here, or whether they shall transfer the knowledge they may acquire to other countries, they may rely upon it that the information which they are now attaining will be of great advantage to them in whatever country or position they may be placed. (Hear, hear.) Public attention is now fixed upon emigration; and it may be that some of these young gentlemen will in after times be the founders of families in a portion of our colonies. "Dwell in the land and verily ye shall be fed" is a promise which I believe however will not fail us in the present day. I think that the broad acres of this land are capable of supporting twice the amount of the present population, provided science, industry, and capital be combined for the purpose of developing the resources of the nation; but still, whether they reside at home or abroad, these young gentlemen will find that in drinking here of the fountain of useful practical knowledge, they were partaking of that which must be of inestimable advantage to them at all periods of their existence. These young gentlemen, after indulging us with specimens of their proficiency, in geology, are about again to gratify us with some of the lighter forms of entertainment.

The following recitations were then excellently delivered:—"Loehivar" (Scott), by Master E. Cottingham; "Paddy Dunbar" (Hughes), by Master E. Agate; "Beth Geleit, or the Grave of the Hound" (Spencer), by Master Freestone; "Ben Battle" (Hood), by Master Trumper; "The Ocean" (Byron), by Master L. Cottingham; and the "Jackdaw of Rheims" (Ingoldsby), by Master Hutley.

Mr. J. C. NESBIT then said—Ladies and gentlemen, I am sorry to tell you, that owing to the circumstance of Dr. Hoffman's removal from his present residence, it is impossible for him to give his attendance here this evening for the purpose of conducting personally the examination in chemistry. But, in fact, he examined the pupils in their chemical studies last Tuesday evening, devoting several hours to the task, and he has made the award which was necessary to enable us to decide who shall have the prize. I will, with your permission, put a few questions to the pupils myself, in order to show you that they really understand the subject; but, of course, an examination conducted privately, and at much greater length than it could be on such an occasion as this, is much more satisfactory for the purpose of determining the relative merits of the pupils. Let me first read the following letter from Dr. Hoffman.

"Royal College of Chemistry, London,
Dec. 13th, 1848.

"DEAR SIR,—I have carefully examined your pupils in qualitative analysis, both verbally and by means of written ques-

tions, and have found them very much advanced in this branch of chemistry.

"I consider it my duty to mention the names of Messrs. C. J. Agate (first prizeman), Lewis Cottingham and G. Whiting, in particular, as having been prominent in the examinations. Unable to attend at the public examination, I may be allowed to congratulate you on the system of instruction which you have introduced into your academy, and on the success with which your endeavours have been attended. I am, my dear sir, yours faithfully,

"A. W. HOFFMAN."

The prize, therefore, has been awarded to my friend Mr. C. Agate, although Master L. Cottingham and Master Whiting are both mentioned by Dr. Hoffman as having approached very near to him in point of excellence.

The examination, conducted by Mr. Nesbit himself, comprised questions as to the modes of detecting manganese, nickel, cobalt, zinc, baryta, strontia, and many other substances; and also the quantitative estimation of phosphoric acid and the phosphates. The answers of the pupils were prompt and decisive.

Mr. J. C. NESBIT.—Mr. Chairman, ladies, and gentlemen, I do not think it necessary to intrude any further upon your time with our chemical examination; because I consider that the pupils having undergone a lengthened examination from a gentleman so well known as Dr. Hoffman—a gentleman who is himself one of the first professors of chemistry in this country—being a pupil of Liebig, and having conducted the laboratory at Giessen for many years—the good opinion, I say, which he has expressed is sufficient to shew that the knowledge which the students have acquired is anything but superficial (Hear). I would take this opportunity of making a few observations with regard to the general progress of these young gentlemen, and the manner in which they have been taught. With respect to the study of chemistry, I think we have done a great deal more within the last year than has yet been accomplished in any other similar establishment, or by the same number of pupils. During the last twelve months we have undertaken and prosecuted an investigation of very great importance to agriculture—no other than the analyzing of the fossils of many, if not of most, of the strata of this country, in order to discover the phosphate of lime or earth of bones—a substance so valuable to agriculture, that, by its assistance, the growth of a good crop of turnips may generally be secured. During the progress of this investigation, the pupils have performed upwards of 300 quantitative analyses, or analyses by weight; and the results have formed the subject of two communications to the Chemical Society, and have been read before the members; while another paper has been communicated to the Geological Society. I need not mention the average age of these boys; but you at once perceive that they are too young to have entered long on a career of scientific study, and you therefore feel that they have been diligent, and have employed well the opportunities which they have here possessed. It must be remembered that their time has not been devoted solely to chemistry. As you have seen this evening, mathematics and botany, and the general studies included in a good education, have not been neglected; and I may here mention, that in the surveying and engineering departments, the pupils have, during the past year, had many weeks' open air exercise in levelling, railway engineering, and surveying, and that, in fact, a portion of Kennington, amounting to nearly 80 acres, with the houses, streets, gardens, common, and other grounds, &c., has been accurately surveyed and planned by the pupils themselves, under the able direction of Mr. Cregan. With respect to botany, it is not necessary for me to offer any observations, the good opinion of Mr. Johnson being quite sufficient; and I dare say the gentlemen who examined the pupils in mathematics and geology will, by and bye, make a few remarks with respect to their advancement in these sciences. I wish here to add a few words myself on the principles of education. I believe that these principles are not at present so well understood in this country as they ought to be, either by teachers or parents (Hear, hear). With a great majority of the population of the three kingdoms, the three R's—*reading, writing, and 'rithmetic* (laughter)—constitute the sole idea of education. Now, however essential a knowledge of these subjects may be, it is only a means to an end (Hear, hear)—they are only the instruments by which a real education may be obtained: for education consists, in my opinion,

of such a course of study as shall discipline the mind, teach it how to think, and bring it into the best possible condition for acting, in the affairs of life, with energy, decision, and success. In order to effect this purpose, it has been usual to insist upon the studying of the dead languages. Latin and Greek have been used in this country as means of disciplining the mind and cultivating habits of thought: they have, too, certainly, been applied with considerable success; but it so happens, that however well the mind may have been thus disciplined, still, as regards the great mass of the population of this country, as respects those who are engaged in manufactures, and trade, and agriculture, the knowledge acquired by the study of the classics is of no use whatever, when they come to take part in the affairs of real life and business. Now, gentlemen, I have thought that, in the study of natural science, in the study of the works of the Almighty as displayed before us in nature, we have that which is capable of giving to the mind an equal, if not a superior degree of discipline, to that which it obtains by the study of the dead languages, and at the same time of conferring on those who engage in it a vast amount of information which will be practically useful to them when they enter the arena of life, whether they shall be engaged in the pursuits of commerce, agriculture, manufactures, or the arts. It is with this view that I have endeavoured to substitute, as it were, to some extent, the study of natural philosophy, chemistry, geology, and botany, for those studies which still, I regret to say, profitlessly occupy so large a portion of the student's time; and while I would not for a moment depreciate the value of a proper amount of classical literature, yet I do contend that the very long period which is usually devoted to such studies involves, in most cases, a lamentable loss of time, particularly as the period occupied in education is, in many cases, unfortunately so exceedingly limited. If youth devoted less time to the study of Latin and Greek, and more to natural science, they would enter the busy world with minds more enlightened, disciplined, and alert, and with knowledge more useful to themselves and to others. I believe that the study of natural science will both discipline the mind, and be useful to those who devote themselves to it in their subsequent career. I have no doubt that one or two of our friends will make a few observations on this subject. Allow me to make one more myself before I conclude. It is, that in the case of the mathematical examination, one young gentleman honourably retreated in consequence of the superiority of his knowledge to that possessed by the younger members of our community (cheers); a gentleman who having devoted a great portion of his time, having in fact almost exclusively directed his attention to the study of mathematics, has mastered that science to an extent surpassing the progress of any of the other students. I speak of my friend Mr. George Whiting. I think it right thus publicly to announce that had Mr. Whiting been examined with the younger boys he must have taken the prize, being far superior to them in that respect. He withdrew from the contest, well knowing that his mathematical abilities were of such a high order that it was not necessary or fitting for him to contend with his fellow pupils (cheers).

JOHN MATSON, Esq., Hackney, here rose in the body of the room, and said—Mr. Chairman, I beg pardon for intruding upon your attention, but I think it right that I should bear testimony to the very excellent manner in which my boy has been educated in this school. He has been here but little more than six months, and I am happy to say that so much has he profited by the instruction he has received that some time ago he delivered a lecture to the Literary and Scientific Institution of Hackney, and Mr. Rowton will bear testimony to the manner in which he acquitted himself on that occasion.

MR. ROWTON: I feel called upon, after the appeal which has been made to me by Mr. Matson, to state what was my impression with regard to his son's lecture. A few weeks ago I attended the lecture delivered by Master Matson at the Literary and Scientific Institution of West Hackney, of which I have the honour to be President; and I must acknowledge that the lecture was distinguished by a remarkable amount of knowledge, by great skill in detail, and by uniform success in a large number of experiments; not one of the experiments failed (Hear, hear). The lecture was likewise distinguished by a pleasing manner in the speaker, which reflected great credit on those who had trained him.

W. SHAW, Esq., of the Strand (editor of the *Mark Lane Express*), said: Sir, I should feel that I were unworthy of be-

ing my friend's guest on this important occasion, if I did not offer two or three remarks upon what I have had the gratification to see and hear this evening. I assure you it has called up many pleasing recollections; and I have reflected with considerable regret that when I was of the age of these lads, general education had not taken that turn which it now seems to be doing. Then, as my friend Mr. Nesbit says, we were nailed down to Greek, Latin, and mathematics, and had very little time for the acquisition of general knowledge. I think we are exceedingly indebted to those who, like our friends the Messrs. Nesbit, are infusing into our general system of education that species of knowledge which cannot fail to become practically useful in after life. I cannot help congratulating you, as a portion of this great nation, that in one of those higher spheres which we are proud to look up to, for both those who have been members of the universities, and those who have not, look up to them with respect—I am glad to find that in the university of Cambridge there has lately been an intimation given, that the system of education at present existing there is about to be reformed, and that that species of general knowledge which has been adverted to this evening will in future be attended to by those who have to fill the highest positions in this country (cheers). Such a fact cannot fail to interest all classes; and I agree with our friend, Mr. Nesbit, that there is nothing like practical knowledge, knowledge which will be useful in after life, as the basis of general education. I also congratulate Mr. Nesbit on his success in another point of view, namely, in reference to agriculture; a subject in which I feel great interest, having been engaged in it during nearly the whole period of my life. I am glad to perceive that attention is here paid to those sciences which are likely to be beneficial to our rising agriculturists, and I look forward to an improvement in that class quite as great as that which characterises any other portion of society (Hear, hear). I have long been of opinion that the only true way of improving agricultural education is by infusing better principles of education into existing schools (Hear, hear). I know there are those who are very zealous for the establishment of agricultural colleges. I should be sorry to say a word which could, in the slightest degree, damage any attempt which may be made to improve agricultural education; but having resided myself for a great many years in the country, I know how our schools are constituted and supported, and I have always been of opinion that the most satisfactory, the most expeditious, and the most certain mode of rapidly increasing the sphere of agricultural knowledge, is to endeavour to infuse a better system of teaching into the schools already existing (Hear, hear). I really think it would be far more difficult to establish new schools upon better principles, than to infuse such principles into those which are already in operation (Hear, hear). As an humble individual, I beg to express my warmest thanks to the Messrs. Nesbit, and I must say in conclusion that I think the highest credit is due to them for having adopted and developed so good a system of education (Hear, hear), the excellent results of which we have this night witnessed.

J. MORRIS, Esq., F.G.S., the examiner in geology, then said: Sir, I wish to make a few observations upon the position which we occupy this evening. After the interesting exhibition which we have witnessed, there can be no doubt that we meet on this occasion to herald the dawn of the human intellect and to advance its progress to greater maturity. The object is one of deep interest, especially when considered in connection with the great purposes of life, and with the great advance which science will, I trust, make for the benefit of mankind. It has been well observed by the celebrated physician Montfaucon that if there exist any means of making men rich and happy, and of giving them abundant nutriment and all the necessaries of life, it is by unveiling the riches which nature offers, and by diffusing the gifts which nature everywhere exhibits on her surface; it is by introducing a love of the natural sciences so beneficial to man, softening and relieving, as it were, his burdens, rendering him more happy, more peaceful, and more contented. I, therefore, do feel that the system pursued by the Messrs. Nesbit is one of deep interest to the whole community. While I am sure that classical literature is here deeply respected, while I am convinced that it ought to be thus respected, as making us, as it were, denizens of, and communicants with, the world within, still we ought to remember that it is natural science alone which can acquaint us with the external world, (Hear, hear). That appears to me to be the great distinction

between the two kinds of knowledge. I must say that natural science has other and higher advantages beyond the classics. Whether we look at chemistry, which by its synthetical and close mode of investigation disciplines the mind for analytical processes, or whether we look at zoology and botany, which teach the mind to be minute and careful in all its proceedings in after life, I think it must be admitted that those sciences are not less beneficial, practically, than mathematics, in unfolding the higher order of mental phenomena. Who can fail to perceive the advantages which natural science is calculated to confer? Who amongst us has not reflected that if those who have left this country for distant colonies had carried with them minds better cultivated, we should have reaped from their enterprise higher advantages? (Hear, hear.) How many plants yet remain unknown, how many deep recesses of the earth yet remain unexplored, which, had the natural sciences been cultivated earlier, might have administered largely to the wants of mankind? (Hear, hear; and cheers.) Must we not feel that as the European has advanced, as it were, on the tread or the footstep of the Indian or aboriginal race, had he possessed natural science and a mind better cultivated, his advance would have been hailed with pleasure and with joy, instead of being regarded as a bane and a curse to the whole native community? Who can tell what advantages the mother country might have derived from the spread of natural science? It has been aptly said by an author, that he who creates a thought does an immortal thing. As a pebble dropped into the silent lake produces an undulation which reaches the distant bank, so a thought cast on the broad field of the popular mind must everywhere produce its appropriate effect; and who shall say where its progress will be arrested—who define the spot on the shoreless ocean of the human intellect where its influence shall not be felt? (applause). Gentlemen, I do feel deeply the advantages of natural science. Amongst those advantages we must not forget its soothing influence upon the human mind. Surely, when we look around upon the vast magnificence which it everywhere opens before us, we cannot think that man, with all his intellectual appetites, and all his varied powers, was placed on this earth merely to be an idle spectator of the vast scene around him. To his intellectual energies all the recesses of the earth are open; to his untiring skill earth yields up her innumerable treasures; and the study of natural science creates in us deep respect and adoration for that Deity who governs all things, and has arranged all with so much symmetry and order. I trust, therefore, that the natural sciences will be increasingly taught in our schools, so as to prove beneficial to the rising generation. I do feel, too, with our President, that the young gentlemen who have been examined may leave an impression upon the book of time in after years, since their attention has been directed to that communion with the world without, to that sphere of natural science which affords, I am sure, the only guarantee and medium for the progress of agriculture and the advancement of the best interests of civilization. Much has been done to improve mechanical, mathematical, and physical science in past times; much has certainly thus been contributed already towards the well-being of the human race, but I still think that by directing attention increasingly to the world without, we may do much towards the further amelioration of the condition of the mass of the human race (applause).

J. IMRAY, Esq., M.A., said: Sir, considering the impressive, and I may say the eloquent, manner in which the sentiments of the last speaker have been expressed, it would not become me to give the same kind of testimony at any length. I will, however, say a few words—and very few they shall be—as to what I have observed in the Messrs. Nesbit's academy, and what I think may fairly be expected from it. I have known the Messrs. Nesbit for several years, during which time I have repeatedly had the honour and the pleasure of being present at these examinations; and I have witnessed with great interest and delight a progressive improvement in the system of teaching here adopted and carried out—a system which, after what has been said, I need scarcely remark appears to me to be the best, both as training the young mind to reason and judge, and as giving it that kind and that amount of information which will be most useful in after life (cheers). When I was at school, a great part of my time was devoted to the reading of Latin and Greek authors, and to the study and the accumulation in the memory of stories about heathen gods and goddesses, relating very little to their virtues, very greatly to

their vices (Hear, hear). This was then thought, and is considered still in some places, a proper and useful course for the young mind to pursue. I must say that I have a totally different impression of the matter. I cannot mention one hour in my life since that period in which I found such knowledge of any value whatever. Whereas the little information which I received on mathematical, mechanical, or natural science generally, has, at every turn, every day, and almost every hour of my life, proved useful to me (Hear, hear). I would not for a moment place side by side the study of mere words, committed to memory, with studies like that of chemistry, which, in their minutest details, as in their largest bearings, train the mind to the habit of just reasoning and of logical deduction (Hear, hear). Who will contend that the old system of education is one which ought to be continued? I must say that I hope before many years elapse a thorough reform will take place—in imitation of the system of this Academy—at Oxford and Cambridge. I am sure every one would hail such a change with the highest satisfaction. Whatever advantages there may be in the system already pursued, they are confined almost exclusively to the higher and wealthier classes; but though the studies which seem of inferior value are confined to a great extent to the classes beneath, yet the spirit of competition will of itself make the higher classes desire to obtain such knowledge; and the slight change which has taken place at Cambridge shows in what direction we are tending (Hear, hear). With regard to the particular department in which I have had the pleasure of examining these young gentlemen to-night, namely, the mathematical department, of all the studies calculated to discipline the mind, I consider that the most valuable, being adapted to give great powers of reasoning and of logical deduction. Wherever you find a man of good common sense, you find one who is calculated to make a good mathematician. Mathematics is nothing but the science of relations. It pervades all the sciences and prepares and disciplines the mind for the study of each. Seeing the proficiency of these young gentlemen in other sciences, I was prepared, in some degree, to find them proficient in mathematics; but I must say I was not prepared to find them so proficient as they actually proved to be. I had imagined that a few simple questions were all that I ought to ask or they could be expected to answer; but I confess that I found the case different; and I do not doubt that had I gone deeper I should have found their replies equally ready. This ought to be regarded with great satisfaction; and I am sure all those who see the advantages of such a system of education, the vast improvement which it is upon the old one, the mode in which it disciplines the mind, and the good uses to which it may be turned in after-life; every one who considers all these things must feel that we owe a debt of gratitude to Messrs. Nesbit for encouraging and carrying out such a system of instruction. I am confident that such a feeling will pervade all present. Every one who takes an interest in the future advance and prosperity of his race must entertain that feeling. When, instead of the attention being confined to old heathen authors, we see the taste equally cultivated by the study of every author dear to English literature; when we remember that Shakspeare had very little classical knowledge, and yet that no one ever exhibited taste superior to his; and when we see that, instead of being chained to an effete system, youth are here taught to look round upon nature, and to learn the relations of things, and to ascertain their qualities, the mind being trained in chemistry, botany, and the other physical sciences, we cannot but feel that they are likely to be placed in a better position than they would otherwise occupy for becoming useful to their fellow creatures, and for "looking from nature up to nature's God" (cheers).

The CHAIRMAN then proceeded to distribute the prizes, accompanying the act of presentation with a most appropriate and admirable address to the successful competitors. Addressing first Masters Lewis Cottingham and C. Agate, he said, he perceived from the paper before him that they had obtained the first prizes for botany, and he had, therefore, to present each of them with two volumes of the British Flora, by Sir Wm. Hooker. With the study of botany were connected great and obvious advantages. It could not, perhaps, in point of usefulness be compared with some other studies, but it was closely connected with chemistry, geology, and other sciences which bore upon agriculture; and in their progress through life those who were acquainted with it would frequently derive from it assistance

as well as receive pleasure. It would at all times be pleasant and agreeable to possess a knowledge of botany. In the early part of the evening they had heard a very excellent discussion on the relative powers and capacities of the male and female sexes. Let them strive to acquire a knowledge of botany, for not only would they by so doing render themselves agreeable to the ladies, but without great application they would find the latter more than their equals (laughter). He was happy to find that his (the chairman's) name received additional honour from the fact of its being inserted in the first page of the prizes.

Master Edward Agate then came forward to receive the prize for geology. After observing that this young gentleman, like his fellow pupils, had been subjected, on a previous day, to a severer examination than that which the company had heard, and that by the examiner full justice had been done to his merits, the CHAIRMAN, in presenting the prize ("Lyell's Principles of Geology"), proceeded to enlarge on the promptitude with which the answers had been given. The cultivation of clear and ready powers of utterance was, he said, in the present day especially, a matter of great importance, seeing that from the youthful band before him, and from similar bodies, would have to be chosen future legislators and the choosers of future legislators. To himself it was a source of delight to find that the present generation was likely to be succeeded by one which would possess greater advantages for framing the laws by which the property, liberty, and lives of all would be regulated. The Chairman then called for Master C. Agate, the successful competitor for the mathematical prize. He said he hoped that the study would have the effect of teaching and disciplining the pupil's mind. Let not so much success, however, weaken his sense of the importance of a close application. Talent was unfortunately, often made, by its possessor, a substitute for industry, which, in the long run, would be found the most useful of the two. In this case there must, however, have been a considerable amount of industry combined with a considerable amount of talent, otherwise such pre-eminent success would not have been obtained in different departments by one so young. He (the chairman) was not speaking at, but to, Master Agate (laughter), and he would tell him that probably all present in the meeting resembled himself in having in their eye some person who, having begun early in life with considerable talent, had now cause to regret that that talent had not been accompanied in the career of life with more industry. Let the pupil always bear in mind the fable of the hare and the tortoise, the hare representing brilliant talent, the tortoise plodding industry; and let him remember that notwithstanding the superior qualities of the former, it was the latter who won the race, the former having neglected to exercise that industry without which the brightest talent was ultimately of little avail. Doubtless in the present case this caution was not specially needed; but, at all events, the general principle which he had stated was one which all would do well to remember, and by carrying it into practice, he had no doubt Master Agate would attain to other and higher objects in life than even that which he had then secured.

Master C. Agate having again presented himself as the successful competitor for a third prize, the CHAIRMAN said he need not fatigue him or the company by repeating observations which if too often made might become painful. He felt quite satisfied that the success obtained had been deserved. He hoped that such repeated success would not excite any unpleasant feelings in the minds of other pupils, but stimulate them to renewed exertion. It evinced a strong sense of justice on the part of the managers of this establishment that they did not refuse to great industry and ability prize after prize when manifestly deserved. In many public educational establishments he had observed that when the same boy presented himself as a claimant for two or three prizes, the conductors were disposed to look around them in order to discover another nearly equal in merit, in order that all the prizes might not fall to the share of one. He was happy to find, however, that such a good feeling pervaded the minds of the young gentleman before him, that the managers of that establishment were not afraid of arousing any unpleasant feelings by awarding to the same young gentleman even a third prize.

Master Whiting then presented himself to receive a prize for general proficiency and chemistry. The CHAIRMAN, in addressing him, observed that not only had he been a suc-

successful claimant of the prize, but he had attained that power which a wise philosopher had told them was the greatest of all human efforts, viz., the power of conquering oneself; and very great credit was due to him for declining to compete in favour of those against whom he must necessarily have been successful. His merit was far superior to that of being a successful competitor with others; he had been a successful competitor with himself, and had consented to forego the high honour which he might have attained, thus evincing that highest and best honour, a disposition to see others attain similar success to that which had been deserved by himself. He had great pleasure in presenting to the pupil the volume he held in his hand, and he could not but consider it as the concentrated essence of the honours of all the classes (cheers).

Master Hutley next presented himself, and the CHAIRMAN said he had great pleasure in presenting to him a prize for his general progress in the study of the natural sciences. If destined to the pursuit in which his father was engaged, he felt no doubt that the advantages received in that establishment would enable the pupil to pursue his career in an honourable manner, and by means of science to add to the merit which already attached to his name.

Master Edmund Cottingham then came forward, and the CHAIRMAN said he had great pleasure in presenting to him two volumes. Although he had not obtained a prize for success in any particular department, still he was to have one for general proficiency, and that afforded the best evidence that his mind was actively engaged. Probably, however, he would in future attach himself more particularly to some one pursuit, and if so, he might fairly expect to obtain a prize under some particular head of study.

Similar prizes, accompanied by a similar address, were then presented to Masters Trumper and Thorne.

Master Matson having then presented himself, the CHAIRMAN said he felt some diffidence in addressing this young gentleman, having learnt that the pupil was himself a lecturer on chemistry (laughter). He ought rather, perhaps, to request the gentleman before him to take his (the Chairman's) place. It was impossible to over-estimate the advantage, in these days, of being able to express one's opinions clearly and perspicuously. Lord Brougham had justly said that the science of thinking upon our legs was a very important one (laughter). In the present day he did not know of any science with which it was more important to be acquainted than with that of chemistry; and he had now the pleasure of presenting to Master Matson a volume, as a reward for past and a stimulus to future exertion in that department of science.

The CHAIRMAN said he had now to present a number of prizes to the junior young gentlemen of the establishment, and he could do little more than name the claimants entitled to the good opinion of the assembly. The following pupils were included in this address:—Masters Iliff, Turner, J. Coombs, G. Johnson, Denton, Bowles, S. and Wyatt.

The CHAIRMAN said the observations addressed by him to the older pupils would, of course, apply in a certain degree to these, and he had great pleasure in presenting to them the prizes which had been awarded.

This concluded the distribution of prizes.

Mr. NESBIT then proposed, and Mr. ROWTON seconded, a vote of thanks to the Chairman, the latter gentleman observing that to the praise due to Mr. Pearson as the president of the evening must be added that due to him as a philanthropist and a friend of the whole human race (cheers).

The motion having been carried by acclamation,

The CHAIRMAN, in briefly returning thanks, expressed the extreme gratification which he had felt in being present on so interesting an occasion, as it had given him an opportunity of stimulating his young friends to persevere strenuously in their

literary and scientific efforts. He was happy to find in the borough of Lambeth an establishment like that of Messrs. Nesbit, where, by means of private enterprise, personal and individual exertion on the part of the youth of the middle classes would enable them to obtain a sound, useful, and practical education, bringing all the pursuits of scientific research to bear practically on the most important objects of daily life. It had been especially pleasing to him to hear Mr. Matson express, with a parental pride which was an honour to him, his obligations to the managers of this establishment, for the advancement of his son's education. That was an extremely gratifying circumstance; and before he sat down he would suggest the passing of a vote of thanks to Messrs. Nesbit, for their general exertions in the cause of education. Perhaps such a proposal would most appropriately emanate from Mr. Matson.

— MATSON, Esq., said he had great pleasure in proposing a vote of thanks to Messrs. Nesbit for the care and attention which they had bestowed on the instruction of their pupils.

G. WHITING, Esq., editor of the "Maidstone Gazette," in seconding the motion, said the Chairman had used the words "parental gratitude." As the parent of one of the boys who had been examined, he felt it imperative to add his humble testimony to the expressions of gratitude which had been used in reference to the exertions of the Messrs. Nesbit. Being connected with a newspaper which devoted a considerable portion of its space to the dissemination of scientific information, more particularly in relation to agriculture, he might venture to claim some pretensions to the character of an authority with respect to Mr. J. C. Nesbit's knowledge of agricultural chemistry. He had had the pleasure of accompanying Mr. Nesbit at different times from one end of Sussex to the other end of Hampshire, and he had found that gentleman everywhere received with unqualified approbation for his information on agricultural subjects. He believed there was no similar establishment where scientific knowledge in connection with agriculture was more simply conveyed or more accurately taught. He had, in common, no doubt, with all assembled, the most earnest wish for the success of the Messrs. Nesbit in the course which they had chalked out for themselves, and he felt great pleasure in seconding the motion.

The CHAIRMAN having put the motion, it was carried unanimously.

Mr. J. C. NESBIT said: Mr. Chairman, and Ladies and Gentlemen, it would be mere affectation if I concealed from you that I feel very deeply the kind reception which I have met with at your hands this evening. I feel this the more, because, from the time when my own education was completed in my father's school, I took upon myself the office and profession of teacher; and having continued in it up to the present moment, I have, for a lengthened period, been trying to discover, and I hope successfully, whether a newer and better mode of instruction might not be introduced, by means of which a more extensively useful and more scientific education might be afforded. (Hear.) My father is, as you well know, an old hand in the work of education—(Hear, hear)—having been engaged for more than half a century in the business of teaching, and having written and published a great many popular works used for practical instruction, as, for example, on mensuration, land surveying, arithmetic, &c. In conclusion, I beg to say that we shall always endeavour to carry out, and, if possible, to improve upon our present system of education; and while we attend carefully to the scientific departments, we shall by no means neglect the general education, and moral and religious discipline of our pupils.

The company then dispersed, exhibiting in their countenances visible testimony of the gratification which they had derived from the whole of the proceedings.

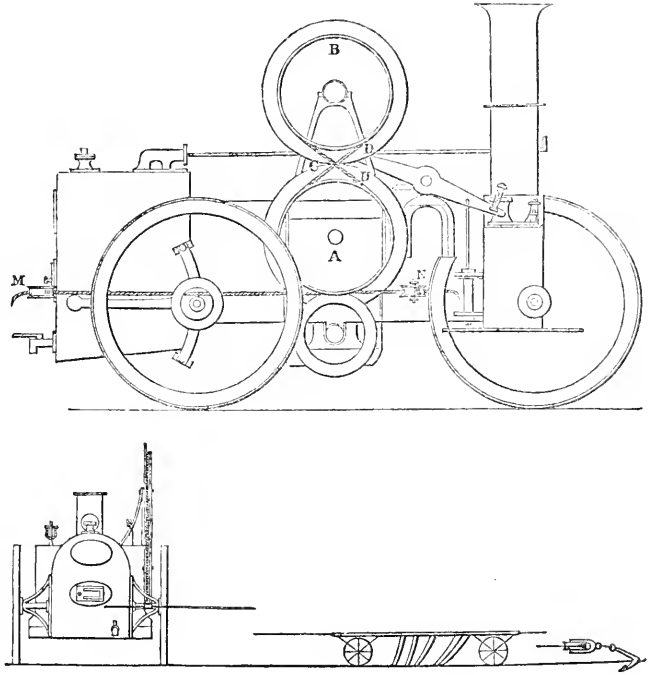
STEAM PLOUGHING, CANAL HAULAGE, &c.

Our attention has latterly been called to some experiments recently made on the farm of Mr. Tyler, near Stratford, Essex, on a steam locomotive engine, constructed expressly for agricultural work,

or steam haulage on canals, in conjunction with Mr. Andrew Smith's wire-ropes. They were constructed by Mr. Wm. Curwood, engineer, of White-chapel, under the patent of Mr. Osborn, King-street,

St. James's. Although the majority of our agriculturists still ridicule the introduction of steam-power for ploughing, and deprecate it as totally impracticable, it is gratifying to find there are men to be found who venture to step beyond the confined limits of present practice, and, aware of the universal power of steam, are anxious to second the inventions of science and the progress of the arts. In the first trial, a pair of these peculiarly-constructed steam-engines were placed opposite each other, about 120 yards apart, with a sufficient length of wire-rope between them, the surplus coiled round the beam of one of Lowcock's two-way ploughs. This trial, although not successful, proved that the conditions of the two modes of draught differ essentially—horse draught being upwards, and exercising a direct control by its proximity to the plough—whereas, the draught by steam-power was distant and downwards, and exercised no direct control on the plough; hence the experiment was instructive. Another trial was made, extending the distance to 210 yards between the engines when, with both a Kent turn-rest, and an Essex two-wheel plough, very good work was accomplished. The subsequent trials were made with a single engine—the wire-rope being returned through a pulley, anchored opposite the engine, and were equally successful as regards the work done. When a common swing plough was used, the downward draught buried it beyond the necessary depth at once. From these rude trials, with an engine of 10-horse power, which is locomotive, or can be drawn by two horses, we think there is little doubt of the practicability of the plan as now tested; but on the question of its economy, nothing but actual experiments, on a large scale, with suitable implements, can determine.

These engines possess great advantages in being applicable to thrashing, and other agricultural operations, and can be moved from farm to farm, or from field to field, with the greatest facility. They are of the usual form, but superior to any yet made for agricultural purposes, both as to arrangement and workmanship. The mode employed for taking up the wire-rope constitutes the patent. A pair of grooved riggers, 30 inches in diameter, with projecting circles, are placed tangent to each other—the projecting circles forming friction wheels. This pair of riggers is placed one above the other, by the side of the boiler, and secured to it on a frame by two strong iron straps, to which also all the gearing is framed. The cylinders are vertical, and encased in the smoke-box, giving motion to the crank-shaft by beams and



side rods. The crank-shaft traverses under the boiler, and communicates the necessary motion to the lower rigger by a spur and pinion wheel. On the opposite end of the crank-shaft are keyed, when wanted, a drum and boss, for a universal joint; and the engine is rendered locomotive by a pair of stub wheels and chains, connecting them with the crank-shaft. The compactness of the engine is admirable; for, while it is equal to 10-horse power, and performs three distinct operations, its compass is only 10 feet by $6\frac{1}{2}$ feet, the height of boiler being 5 feet. The wire-rope is wound round the riggers in form of the figure of 8, and all sawing and abrasion prevented; and this plan presents a great advantage in not requiring perfect tension, but will take up a slack rope without the least slip on the grooved riggers.

For canal haulage, this description of engine will be found highly advantageous, as, by its use, an unlimited number of barges in fleets can be hauled by one tug-engine working on the wire-rope laid down in the canal—a second line of rope being laid on the other side for craft going in the opposite direction, giving the same facility as a double line of railroad. The canal interest is one of the largest in the kingdom, there being 4800 miles of inland navigation; and that so much capital should be allowed to sink irretrievably under railway competition, when such obvious resources are at hand to raise the value of the property, can hardly be conceived; but something must be done, and that quickly.—Mining Journal.

T E N A N T - R I G H T .

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS,
WITH THE EVIDENCE.*(Continued.)*

March 30th, 1848.

MEMBERS PRESENT.

Mr. Barronghes	Mr. Henley
Mr. Colville	Sir C. Lemon
Mr. Evelyn Denison	Mr. Newdegate
Mr. Tatton Egerton	Mr. Pusey
Mr. Hayter	Mr. Stafford.

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of Mr. EDWARD PAGE.

CHAIRMAN.] You are an extensive land surveyor, and also a land agent, at Beverley, in the East Riding of Yorkshire?—I am.

Have you had occasion in the course of your professional occupations to make yourself well acquainted with the East Riding of Yorkshire?—I know most of the East Riding of Yorkshire; the principal part of my business has been in that riding.

Can you tell the Committee to what extent you have measured and surveyed the land in the East Riding of Yorkshire?—I think I have surveyed and valued nearly half the East Riding.

How many acres would that be?—Perhaps between 300,000 and 400,000 acres.

You are also agent for a very large property in the East Riding?—For a considerable property in the East Riding.

What is the extent of that?—About 15,000 or 16,000 acres.

What is the custom as between outgoing and incoming tenants in the East Riding of Yorkshire; the first with regard to acts of husbandry?—The off-going tenant, as we call him, is entitled to a way-going crop, varying from one-third to one-fourth of the arable, according to the description of land he farms; the way-going crop in the wold farms averages one-fourth part of the arable; therefore, if a tenant had 400 acres of arable land, he would have a right to away-going crop from 100 acres.

Mr. HENLEY.] What are your holdings?—Nearly universally Lady-day holdings.

CHAIRMAN.] Will you proceed with your statement?—Upon the wold part of the riding I think I stated that they had one quarter part of the arable land as a way-going crop; upon the stronger soils, Holderness, for instance, and the west side of the wolds, which is called Howdenshire, the way-going crop averages one-third part of the arable land.

I think the East Riding of Yorkshire is comprised of a high range of chalk hills running through the county; the strong land called Holderness, and another district of mixed land, but rather strong, on the west side of the wolds, is called Howdenshire?—It is; and in Holderness and Howdenshire, one-third part of the arable land for a way-going crop generally prevails.

Then the outgoing tenant sows the wheat?—He does; upon the wolds, the way-going crop is either sown after rape, turnips, or seeds, depastured the summer previous; he sows wheat, barley, oats, &c., as the case may re-

quire, and he leaves the crop at a valuation, to be taken by the oncoming tenant, who has to pay the amount of this valuation, deducting the average rent per acre of the farm upon which the way-going crop has grown, which is called the onstand, also deducting the expenses for ining and outing, which is reaping, leading, threshing, delivering, stacking, and every other expense attending the bringing of the corn to market; also deducting one year's parochial taxes for that part of the land upon which the way-going crop has grown. The oncoming tenant gets the straw and the eatage thereof; but he has to allow the off-going tenant 6s. or 7s. per acre or something of that sort, for the eatage of the straw.

To whom does the dung belong generally?—It is various; I should say three parts out of four belong to the land.

Has the outgoing tenant any compensation for the purchase of artificial manure, or artificial food for stock?—No not any.

Is there any compensation for draining or chalking the land?—Not any.

Is it generally the practice to employ those means of increasing the productiveness of the soil?—No, it is not. There has been a certain portion drained, and there has been a certain portion that has been chalked or marled, but not to any very great extent.

Your wold land may be divided into two parts, the southern part, which is lower, and on which the soil is of rather a calcareous character, and the northern or higher part, on which chalking is beneficial?—It all lies upon the chalk rock, and not far from it; it may be divided into two parts, that is, the thin soils of the wolds, which are not confined to any particular district either south or north, and the deep soils; as to the thin soils I do not believe that chalking would improve them; but I believe the deep soils would be greatly benefited by chalking.

Do you not marl a good deal of deep soil upon the highest wolds?—Not a great deal.

Do the turnip crops suffer from the want of chalking upon that land?—Yes, very much, both the turnip and corn crops.

How do the turnip crops suffer?—It fingers and toes; it is an unhealthy plant altogether; it never gets to any very great size; it grows thin upon the ground, and it is with great difficulty a crop can be got at all upon the very deep soils; the corn also comes up very thin; it never spreads; it is always of a very grass-green appearance, and generally very late in ripening; the quality of the corn is always inferior, as well as the quantity; it also produces a very large quantity of different kinds of weeds, such as catlocks, runches, and other weeds, more than lighter soils do.

Have you any doubt that those evils would be greatly diminished by the general adoption of chalking?—I think they would, for wherever the land has been chalked in a proper way, the evil has been entirely removed.

You stated, that on the wold farms there is no general practice of using cake for feeding cattle for the improve-

ment of manure?—No, there is not; there is some cake used, not to any great extent.

Is the making of manure neglected on the wold farms as compared with the wolds of Lincolnshire?—I cannot speak to that; I am not sufficiently acquainted with Lincolnshire to draw a comparison. I can only go from information I have received.

Then without drawing any comparison, should you say that the straw was made the most of in being converted into manure, or that it is sometimes left in the fields where it has been threshed with a movable steam-engine?—Upon the wolds particularly, they do not pay any great attention to making the straw into manure. Upon the large wold farms it is very often stacked and threshed in the fields; and I have seen straw that has lain in the fields for a twelvemonth afterwards; and of course it was very imperfectly made into manure.

Your attention is now called to the deep land of the East Riding; and first as to Holderness; is that district in your opinion as much drained as it ought to be?—No, it is not.

What is the usual mode of cultivation in Holderness?—The usual mode is two crops and a fallow, with few exceptions.

Two white crops and a naked fallow?—Yes, a summer fallow; where they have got the land drained they can grow turnips and rape.

The two white crops and naked fallows may be considered as the primitive mode of husbandry?—That has been the mode of husbandry in that district for hundreds of years, no doubt.

In your opinion, if the land were drained, could a more advantageous course of husbandry be followed?—I think very much so.

Do you think that much of that land would be capable of bearing green crops, instead of being subjected to naked fallows?—I believe so; I have seen it frequently, where the land has been drained it bears green crops of clovers and small seeds uncommonly well, both for depasturing and mowing; and in some cases turnips and rape are grown and eaten upon the ground.

Mr. NEWDEGATE.] Are those the white or the Swede turnips?—Both; Holderness is particularly adapted to the growth of Swede turnips; if the land were drained it is a good strong soil.

On the wolds are the swedes as extensively cultivated as in the Holderness country?—The swedes are not much cultivated on the high wolds; every farmer grows a few acres, to draw off for the use of his cattle in the fold yard.

CHAIRMAN.] They grow more common turnips?—Yes; white turnips.

Mr. BURROUGHES.] Do you grow any mangel-wurzel? No; not upon the wolds, nor much in Holderness.

CHAIRMAN.] As to the district that lies on the west of the wolds, is that as much drained as it ought to be?—No; it is not drained any more than Holderness.

In your opinion would its production be greatly increased by drainage?—No doubt it would.

Are you acquainted with the long tract of very unproductive sand land in Howdenshire?—I know there is a tract of sand land on that side of the wolds.

You are not particularly acquainted with that, are you?—I have improved 300 or 400 acres of sand land at Newbald, on the west side of the wolds.

Is that the portion of the district of flowing sand that stretches from the Humber up to Stamford Bridge?—No, it is not, but it is very sandy land.

How did you improve it?—It had never been cultivated in any way; it was ling and moss, and full of water. I was employed to improve it. In the first place, I drained it three, four, and in some cases five

feet deep (it was all sand even to that depth), and then I fenced it with quick wood, and posts, and rails. I also pared and burnt it, to destroy the rough stuff which was upon the surface; I then marled it with marl got out of the land; I then let it to rent.

How much marl an acre did you put on it?—Two hundred cubic yards.

You have mentioned to the Committee various modes of improvement which would tend generally to increase the productiveness of the different soils of the East Riding of Yorkshire; is it your opinion that the landlords have the means and inclination out of their annual incomes to carry all those improvements into effect?—I think they have the means.

Do you think they have the inclination?—Not all of them.

Then if the tenants had a greater security for the outlay of their capital in such improvements, is it your opinion that they would be induced to so expend their capital?—I think they would.

Those permanent improvements might be adopted to a very considerable extent, so as materially to increase the productiveness of the country, and the employment of agricultural labourers?—I believe that the East Riding is capable of being improved to a very considerable extent, and would employ a very great increase of agricultural labourers.

Can you speak to any other remarkable improvements that have been made in any part of the East Riding?—No, there has been none except good cultivation; many of the farmers cultivate the land exceedingly well, and they get bones to the wold land for the turnip and rape crops.

Mr. HAYTER.] Is the property chiefly let on lease, or from year to year?—From year to year chiefly.

CHAIRMAN.] In what state are the buildings ordinarily on the farms?—Tolerably good.

Is there any steam power?—No.

Are the farms large in extent, or small?—There are some few large farms, but I should say generally they run from 200 to 400 acres.

That is the ordinary run of the farms?—Yes.

Are you acquainted with the customs in any other adjoining district besides that you have spoken of?—Not very well.

So as not to speak distinctly to them?—No; I know some part of the North Riding, which is similar to what I have described respecting the East Riding.

And the same customs prevail as to tenant-right in that district as prevail in the district you have spoken of?—In an estate which I surveyed last year, of about 13,000 acres, the same customs prevail.

Mr. T. EGERTON.] When the chalking and marling is done, is it by agreement between the landlord and tenant?—I think the tenant does it at his own risk; I never heard of any agreement.

Mr. HENLEY.] The proportion of corn, you have told us of, is one-fourth part of the arable; is that one-fourth part of each description of corn sown?—No; supposing a man had 100 acres of arable land, when he left the farm he would have 25 acres for his waygoing crop, and he might sow that 25 acres with either wheat, oats, or barley, or whatever he chose.

Is he forced to take any proportion of each sort?—No, he sows whichever he considers most profitable.

Does the same answer apply to that portion of the district where one-third is taken?—Exactly so; just the same.

In Holderness is there much grass land held with the arable?—Not a very great deal; a great portion of the grass land has been ploughed out within the last 40 years.

And broken up into tillage?—Yes.

Are the farms large in Holderness?—No, not more than 200 acres on the average; perhaps not quite so much.

Are they occupied generally by men with a full amount of capital, or with narrow means as to capital?—Both ways; I should say they are not very wealthy farmers there.

Mr. T. EGERTON.] You have several large farms near Beverley?—Yes, we have some large farms.

That portion of the district which you are speaking of, you say great advantage would be derived from draining it; what opportunities have you of falls for draining?—In some places we have very bad falls, particularly in small estates, which are often surrounded by estates of large proprietors, whose outfall ditches are frequently very shallow, and they cannot go into the adjoining lands to deepen them.

Are you not obliged to make all your drains fall towards the great drains?—Yes.

The drains kept up by the Commissioners?—Yes, that is, the great sewers; they fall towards them; but they are kept in very bad condition, generally speaking.

Mr. NEWDEGATE.] The tendency of your evidence is, that the custom of the country in the North Riding extends usually to the waygoing crop, as between outgoing and incoming tenants?—I can only speak to that part of the North Riding that I have had something to do with; upon the estate I surveyed last year, the customs appeared to be as nearly like those in the East Riding as possible.

And the customs are exclusive in the particulars to which allusion has been made, with reference to tillages, and with reference to the right of the outgoing tenant to take the crop which would accrue from his own tillage?—Yes.

And the custom does not extend, does it, to drainage, to marling, or to chalking, which are the improvements which you think most requisite?—There is no custom to compensate the tenant for anything of that kind that he may do upon his farm.

You stated that in one of the middle districts you improved a farm extensively, where the soil was sandy, by drainage, by marling, and by enclosing it?—Yes.

To none of those improvements does the custom apply?—No, none at all.

Are those farms generally held upon lease or by agreement?—By agreement from year to year.

Are those agreements in general specific in the terms which regulate the compensation between landlord and tenant?—Yes, they are very particular.

Do you think they are uselessly particular?—I think so long as the present custom prevails, they are not more particular than is necessary; but I think that if the tenant had a compensation for the improvements he might be inclined to make, if he had security, it would be a better system.

You think therefore what is advisable is, that the compensation to the tenants from the landlord should extend to marling, and drainage, and chalking, which are not included in the custom of the country at present?—I do.

Do you think it would be advantageous that provisions for compensation for those purposes last alluded to, should be inserted in the agreements?—I do. I think it would be better, unless there was a general law to the effect to establish a custom of that kind; for if they are not inserted in the agreements, in the absence of a general law, the tenant cannot get anything.

But if they were inserted in the agreements, the

provision would be adequate?—Yes; if they were inserted in the agreements.

Must not there be a difficulty in framing a general law, applicable, for instance, to those three different characters of land which you have described, namely, the wold land, the sandy land, or middle district, and to the deep land, such as Holderness?—No; I do not think there would.

Because all that you contemplate by law are those permanent improvements, such as drainage, chalking, and marling?—Yes; also for fencing, and compensation for unexhausted manures.

But as you have described, the practice with reference to tillages varies very much in each of those particular districts?—Yes, it does.

Then it would be very difficult to apply a general law that would be applicable to the tillages of those districts, because they differ?—It would be very difficult to lay down a mode of cropping; one mode would not suit all the districts.

And that would be almost impossible to do by law?—I think it is almost impossible to do it in any way, because seasons change circumstances so much, that it is frequently advisable to alter the mode of cropping.

Would not it be desirable that compensation for such items as tillages and the rights of tenants to crops should be left to the special practice of the country, as it is with regard to the tillages and the right to the way-going crop, and feeding off the turnips and eating the straw: is not it desirable that that should be left to the custom as it exists?—There is no custom but the custom I have spoken of, in the East Riding.

The question means the custom you have spoken of; do you think it desirable that the custom should remain as far as it goes?—I think it should. With respect to the way-growing crop, of course that could not be taken away from the tenant, because he has purchased it of the person that he followed.

And you think that state of things is satisfactory as it exists, and is applicable to the different districts?—I think that the way-going crop should remain.

Then do you think it requisite that provision should be made for the recovery of compensation for the outlay of capital in drainage, marling, and chalking?—Yes, I think there should; it would be a great encouragement to the farmer to do what he does not do at present, namely, to improve his land; indeed most of the farmers who have capital would lay it out, if they had a reasonable prospect of compensation.

And you think that the compensation might be obtained under provisions inserted in the yearly agreements?—Yes, if they were inserted in the yearly agreements, of course the tenants would be safe.

Why has not it been done so?—I do not know; it has not been done in the East Riding; I do not know an instance of it.

Can you give any opinion as to the best means of inducing parties to insert those provisions for compensation?—I am afraid it would be a very long time, unless the legislature pass some measure to induce them to do so.

Would you recommend that the legislature should enact that it is necessary to every yearly agreement that compensation for improvements should be specified and allowed?—I think that that is necessary; the outgoing tenant should have no compensation till he did go away, but that when he has laid out his capital, and is to leave the farm, he should then be compensated.

Would you render it compulsory by law?—Yes, I think I would, and for this reason: if a man has spent his £2000 or £3000 in improving the land, and has not

the opportunity of getting it back again, I think there should be a law to compel the next tenant or landlord to make some compensation in fairness to the outgoing tenant.

Would you make such a law apply to existing agreements?—Yes, I should; otherwise they would be no better off than if the law did not apply to all.

You have stated that very few of those improvements in draining, chalking, and marling, have been yet undertaken?—Not a great deal.

Is it not clear that many agreements between the landlords and tenants exist without contemplating the improvements of this kind?—Yes; they have not been done, and we do not look forward to having them done at present.

And the agreements have been framed without provision for this change, which was not anticipated?—They have.

Do you think, then, that the tenants and the landlords would like to bind themselves under the operation of a law which changed their position and violated their agreements?—I am confident that the tenants would, and I think a good many, but not all, of the landlords would.

You think that the tenants generally would approve of the making of a law which would alter the terms of the agreements?—Yes; I think they would on this ground: they would feel secure in laying out their money; and many have a great inclination to do so, but they do not like to do it under yearly holdings.

If you were to give this power to recover compensation for improvements, would not it be just also to give the landlord the power to recover compensation for the dilapidations which may take place upon those farms?—Yes, I think it would: they have the means of recovering for dilapidations at present; I have known several actions brought against tenants for dilapidations, where damages have been recovered.

And have you not known that there is a very considerable delay and difficulty in that process?—There is always.

To what dilapidations do you refer?—Fences and cross cropping the land; that is, taking more crops than the agreement specifies; in fact, breaking the agreement or breaking the custom of the country.

There is considerable delay, however, in the recovery of compensation for the dilapidations?—It is a very unsatisfactory mode of recovering for dilapidations.

In fact, have you known any cases where the tenant has become insolvent after having committed considerable dilapidations, and where the landlord has found himself precluded from indemnity by other creditors getting the stock off the farm?—Yes, I have known that.

Therefore you think that in the case of dilapidations, as in the case of compensation for improvements, some more speedy process of recovering the rights of parties is required?—I think there should be some easy process of settling the account between the landlord and the tenant, when he quits, both as to the claims of the tenant upon the landlord for the capital that he has invested, and also for the injuries that he may have done the estate by any means whatever.

From your knowledge of the district with respect to which you speak, can you form any opinion of what would be the most desirable form of having this compensation for dilapidations or improvements assessed and recovered?—I think there is no such likely form as having them assessed by arbitration, in the usual way, by arbitrators and an umpire.

Then in estimating the amount of dilapidations and the tillages as is now practised, under the custom of the district you speak of, is it usual for the arbitrators

to give a detailed account of the items upon which they have based their valuation?—It is not; they do it in a very unsatisfactory way according to my opinion; they merely state that the valuation of the way-going crop amounts to so much money, to be paid on such a day, as the first payment.

And if you were to give the decision of those arbitrators the force of law, should you not consider it necessary to make them arrange their valuation according to a more satisfactory principle?—Yes; I think there ought to be a fair statement of the articles that are to be compensated for, and of the injuries the tenant may have done, and a fair balance of the items mentioned, with the value of the items upon their valuations.

So that in case either party thinks himself aggrieved, he may be able to have this valuation revised in a proper and efficient manner?—Yes; if any such error was made, there ought to be some way of revising it.

In some cases where disputes arise the arbitrators have failed to appoint an umpire?—They have.

In the case of such a failure as that, to whom would you refer the final decision of the case; that is, to what court?—I do not know; there ought to be some means of having an umpire appointed; I cannot say at present what, but in that case certainly it ought not to fall to the ground. There ought to be some person, or some body of men, having the power of appointing an umpire.

Do you intend that this valuation of those items shall extend, not only to the tillages and the way-going crops, but also to the heavier improvements of draining, marling, and chalking?—I certainly do; they are very expensive improvements.

Do you think it would be wise to separate those heavier and more expensive improvements from the valuation under the custom as it now exists?—I think that the same valuers might value the articles under the present custom, as well as the other improvements; I think one valuation might do for the whole.

Who would you consider as the party liable for the valuation, the landlord or the incoming tenant?—I should consider the landlord, or the land. Sometimes it may happen that the incoming tenant may be here to-day and gone very soon after.

You state the landlord or the land; do you mean the landlord himself, which, in the case of a tenant for life, would mean the landlord's personalty, or do you mean the estate?—I mean the estate.

And you are aware a difficulty might occur from the laws of entail, which at present would render any agreement entered into by a landlord, who was only tenant for life, invalid after his death?—I am not aware of that; it may be so; I am not aware of it. But I take it upon this ground, that if a tenant made 100 acres of land worth double what it was before, I think that land ought to be liable to compensate the tenant for such an outlay.

You apprehend that the estate should be liable for the improvements made upon it?—Yes, it would be like adding so much more land to it.

MR. HENLEY.] You have stated, that in your opinion it would be more advisable that this should be done by legislation, rather than by private agreement between the parties?—It would take a long time before such private agreements would be entered into; they would go on as they are going on for a long period before they would be granted.

You have also stated, that any law that should be made, should be retrospective as well as prospective?—No, I think not; I think it should commence from the present time; it would be unfair otherwise.

It is now quite clear that you think it ought to be prospective, and not retrospective?—Yes.

Is it your opinion that the amount to be assessed should depend upon the capital expended by the outgoing tenant, or upon the advantage derived by the incoming tenant?—I think it should depend upon the expenses of the outgoing tenant, that is upon the capital laid out.

Whether it was beneficially expended or not?—An arbitrator ought to have the power to award compensation, accordingly as the money had been judiciously or injudiciously laid out.

If there is to be a law, it must decide whether it is to be upon the capital expended; or would you leave it to decide that it should be left to the arbitrator to settle that question?—I think it should be left to the arbitrator.

Which is your opinion; should it be upon the capital expended, or upon the benefit to the man coming in?—I think it ought to be upon the capital expended, with respect to marling, draining, and such like improvements: it would be according to the time that the money had been laid out; if the land had been improved for six or eight or ten years, I consider that the tenant, in a great measure, would have got his capital back again.

You have stated, that in your district of the East Riding of Yorkshire, chalking the thin soils, in your opinion, would not be beneficial?—I think it would not.

In the event of a man chalking that district from a mistaken judgment, ought the incoming tenant to pay for that?—I think he ought not.

That should be left to the discretion of the arbitrator?—I think it should.

Then, in point of fact, the principle upon which the valuation should be made must be left to the discretion of the arbitrator, as well as the question of the value?—Yes, I think so, in a great degree.

What period ought the draining to be paid for?—I made agreements about twelve months ago for three farms in Holderness. The landlord had not the means of finding the money, and the tenants agreed that they should find the tiles, and do all the labour under my inspection, and to my satisfaction: if they remained on their respective farms for seven years they were to have no compensation for the outlay; but on quitting before that time they were to be paid for a portion of the outlay, according to the number of years unexpired.

In your opinion ought that to be fixed by law, or ought it to be left to the arbitrator to decide?—I think the principle should be settled by law, but not as to the number of years.

What advantage is there to be derived from the law settling these matters between man and man, instead of their being settled by private agreement?—It would make no difference, if they were settled either way. I believe if the tenant could have any security that he would get compensation, it would not be the law that would make him do it; he would do it under any circumstances.

What is the practice with regard to buildings; who puts the buildings up?—The tenant does nothing but keep the buildings in tenable repair, and the same with respect to the fences and gates.

Does he find any materials?—No; all that belongs to the landlord. The painting, the mending of the fences, and the repairing of the gates, belongs to the tenant; but if any new gates are wanted the landlord generally finds them.

In the case of new roofings will the landlord do that?—As to the new roofs, the agreement says the

tenant is to keep the buildings in repair; main walls, main timber, and damage by fire and tempest, only excepted.

In your opinion should the law that is to be, according to your judgment, made for the future, over-ride private agreements or not?—The private agreements, and the customs which I have stated as to the way-going crops, I think the tenants ought still to retain them, because they have purchased them at some time, and they ought to have compensation beyond that for all outlays.

To put the case clearly, supposing a law were made that the tenant should be entitled to receive money for marling, draining, chalking, or fencing, as you have stated, and the farm was let to him upon a low rent, upon condition that he should make those improvements upon a term of years, should the law over-ride that agreement?—No; he would get compensation under the agreement.

Then private agreements ought not to be over-riden by the law?—Not in that case; it would be unfair if they were.

Mr. HAYTER.] You say that the principal portion of the land is let under yearly agreement?—Yes.

There are some cases where there is no agreement at all in writing?—Yes, a great number.

When there is no agreement in writing, is the custom such as you have specified?—It is.

So that the custom exists, independently of the agreement?—It does; it makes very little difference whether a man has an agreement or not, the custom decides.

Then the agreements you have alluded to are rather expressive of the custom?—Yes; they particularize the custom.

That custom arose, did it not, from the supposed justice to both landlord and tenant, upon the existence of it?—Yes; no doubt it did.

Are you to be understood to say, that if that custom which now exists was extended in the manner you mention, that the extension of that custom would be also beneficial to both landlord and tenant?—Yes, I think so.

The alteration you propose in the custom would proceed upon the same principle of justice to the landlord and to the tenant?—It would.

Would there be any difficulty in arbitrators coming to a clear understanding of the amount they would have to assess between the incoming and outgoing tenant, if that principle were to be adopted?—I think there would be very little difficulty indeed. I have no doubt that the present custom that prevails in the East Riding was an admirable custom at one time; but since the improvements made by the introduction of bone manures and the use of cake, I think that the custom wants extending, and compensation making, in order to induce people to take the advantage of improving their lands by those means.

You believe that, as that custom became law from the then state of husbandry, as the state of husbandry is altered it is desirable that there should be another custom consistent with the existing state of husbandry?—Fifty or 60 years ago it was a very good custom; it is not extensive enough at present.

In your recollection has the custom varied at all?—Very little.

It has been the constant custom during the period of your practice?—It has.

Mr. COLVILLE.] You have stated that in any legislative interference between landlord and tenant, you do not propose it to be retrospective?—I do not.

And you have also said that no wise man would lay out money unless he had security for it?—I have.

Why then cannot a tenant, in hiring a farm from a landlord who has the control over his own estate, make such agreements with him in hiring that farm, as to secure him in the outlay of any capital he may make?—I know some very good landlords, and yet they do not wish to break in upon the present customs. I have had tenants applied to me to have those customs introduced; and I have mentioned it to the landlords, but without effect.

But a tenant having his money in his hand, and going to hire a farm, what is there to prevent him dictating to that landlord upon what terms he will take his farm?—The landlord would not let it on terms dictated to him by a tenant.

Then he need not take it?—Certainly not.

Then an injury would be done to the tenant?—Yes, there would be injury done to the tenant if he could not get a farm.

CHAIRMAN.] You spoke of some land you had greatly improved, which you had made into a farm when it was no farm before; was it your own land?—No, it belonged to Mr. Clough, a banker at York.

Have you a lease upon it?—I did not take it, but I improved it for the landlord, and I let it afterwards to Mr. Clough's tenants.

Did it remunerate you?—It cost £16 an acre improving; it was not worth one penny before, and I let it for 27s. an acre.

You have been asked about chalking the wolds, and you have stated that some of the land is improved by chalking, and some not; are you of opinion that a man who had to chalk in the first instance on his own account, would be likely to make any mistake as to what part of the land required chalking, and what did not?—I think he would not.

That is thoroughly well understood?—Yes, that is thoroughly well understood.

You have spoken as to the possibility of making private agreements for those purposes between the landlord and the tenant; you have not investigated the legal question as to what parties are capable of making those agreements?—Not in the least.

MR. NEWDEGATE.] You say that some draining has been done in that district you speak of; has it been well done?—No, it has been generally badly done.

And supposing the drainage to be badly done, would you give, under the circumstances of making those bad drains, any compensation to the man who made them?—No, I would not give any compensation if he did them badly, except the expense of the tiles, because in that case the labour is all lost.

If a man threw away capital and labour upon his farm, you would not entitle him to recover a full compensation for it?—No, I would not.

Evidence of Mr. JOHN OUTHWAITE.

CHAIRMAN.] You and your brother are practical farmers in the North Riding of Yorkshire?—Yes.

In what neighbourhood?—Near to Catterick Bridge.

You have obtained the prize of the Yorkshire Society for the best cultivated farm in that district?—Yes, in the year 1844.

What description of land do you occupy?—Mine is partly gravel, but probably one-fourth part is strong soil, soil that was not at all adapted for growing any green crops till it was thoroughly drained.

What is the extent of the farm?—Four hundred and eighty-five acres.

The strong land was not productive when you first took it?—My father took it in 1812, and then he used to cut a head ridge across the middle of the field, and

one part of the field he sowed with grain crops, and the other would remain open fallow in small ridges; and in some instances the water was washed off the surface of the land, and delivered itself into the low land and went away in the gravel; there was no draining previous to that time.

Have you improved that land yourself?—Yes.

In what way?—By drainage: there was no means of getting the water away without taking it through an open cut for two miles to the river, which would be an enormous expense; we have drained the lower part of the farm by making what we call swallows, digging down a hole in the land into the gravel where there have been materials to make the road, and nothing but clay or gravel without any soil amongst it; and when we came to dig into that, we filled it up with stones, and delivered our water into those places, and so got rid of the whole of the water in the strong land in that way.

Can you pen sheep on your strong land?—Yes, quite the same as the other part of the farm.

Have you used artificial manure and artificial food for cattle?—Yes, for these last ten years; I have expended upwards of £250 a year for artificial manure.

And artificial food?—Yes, about £100 a year I pay on the average for that; from that to £150.

Do you keep beasts?—Yes, I feed a good many beasts in the stalls in the fold yards.

You have heard the last witness describe the custom between outgoing and incoming tenants in the East Riding; are the customs the same in the north?—Not exactly; the custom generally in our county is one-third away, but there is partially in a few instances where the person has two-thirds of the way-going crop; and where he has that two-thirds, generally their agreement is, that they do not pay any offstand; they have it clear. In 99 out of 100 cases, the tenant that leaves the farm has one-third of the land away, by paying the average rent of the rest part of the farm.

It is a Lady-day entry?—On the 13th of May; it is Candlemas for the ploughing land, that is the 14th of February, the entry upon the ploughing generally, what the incoming tenant has to take, and then all the meadow land and grass is entered upon till the 13th of May; they go with that, the 6th of April, with the pasture land.

Whom does the dung belong to?—It belongs to the outgoing tenant up to a certain time; there are different agreements; there has been a very great abuse lately where there has been no agreement; up to these last few years back it was the custom for the outgoing tenant to have it to Martinmas; some people claim it later than that.

Speaking of the dung-heaps on the farm?—They belong to the incoming tenant after such a period.

To what did your former answer apply?—To the time how long the tenant had the manure up to; that was the question I understood that was asked, "What period did the incoming tenant claim the manure from?" and I said it differed. They have it in some instances up to one period, and in some cases up to another.

If the outgoing tenant has the dung to a certain period, how does he apply it.—To his away-going crop.

Then the remainder of the dung belongs to the incoming tenant?—Yes; it belongs to the incoming tenant.

Does the outgoing tenant receive any compensation for the improvement of that dung by any oil-cake he may have given to his cattle?—Nothing whatever; and in many instances the tenant leaving the farm will take a very great advantage, which is an injury both to the landlord and incoming tenant, by leaving all his straw and not making it into manure at all; that is in the last year after he has done with the manure, which he generally

lays in heaps till the year following. The incoming tenant has in those instances nothing to begin with but what he may buy.

Have you expended money in any other improvements besides those you have mentioned?—Yes; I have built a great deal at my own expense, merely the materials being found by the landlord. I have erected buildings for cattle, and tanks to take the urine out of the fold yards.

What have those buildings and improvements cost you?—I should think I have paid not less than £150 for expenses in that way. It was a customary thing, when my father took the farm, to keep all the cattle out-door, that is, in the pasture, and they pulled the turnips off and laid them in the meadow field and pasture land; but now we do not do it in the pasture land at all, we have it all in the fold yard.

When you say keeping the cattle out-door, you mean keeping them in the fields?—Yes; out of doors.

Do you think if the tenants of the North Riding of Yorkshire had compensation for improvements, there is much room for improvement to be made in consequence?

—Yes. I have travelled through many counties, and there is none more capable of improvement than Yorkshire. There is some of the very worst farming in our neighbourhood, which arises entirely from the want of compensation; I can mention one case in particular, where there was a large proprietor, who happened to be a lady, and to one of her tenants I said, "What is the reason that your farm is so badly farmed?" and he said, "Sir, I can give a good reason for that; the last seven or eight years we have expected the landlady to die," and he said, therefore they were taking advantage of the land; he was quite certain that when they got a fresh landlord they would be either turned off or have the rent advanced, and they were expecting every year to be the last: that land was only worth half its value, it had got into such a bad state.

Have you not a good deal of undrained land in Cleveland?—Yes, there is a great deal there that is undrained, and a great deal in our neighbourhood not drained that is capable of growing better crops, and there is a great deal of undrained land at Cleveland that is capable of great improvements in draining; I do not think it would be some part of it convertible to growing green crops.

Is not the old course of husbandry two white crops and a fallow?—Yes, that is the custom, even upon very good soil, only producing excellent grain crops, a naked fallow and two white crops again; it gets poorer every year.

Have you any doubt if that land in your neighbourhood were drained, it would be capable of being cultivated to a profit and with advantage, as you have cultivated your own farm?—Yes; I have no doubt it is capable of great improvement; it would be a great benefit to the proprietor and to the tenant-farmer, and the labourers as well; all parties would be greatly profited by the improvements that might be made, if the tenant had only compensation for the outlay.

Are the farms in the North Riding generally on lease or yearly holding?—From year to year generally; there have been a few instances of leases, it does not appear that there are many; they seem to wish to back out of leases; on three or four estates that are near to us, leases have been offered, and very few would have anything to do with them; they said they would rather have compensation; from the state things were in, they did not like to look forward for 20 years; they would rather improve the land, and be recompensed if anything occurred they did not foresee.

As a practical farmer which do you incline to, lease or yearly holding with tenant-right?—I would not take a lease; I would rather have it from year to year with

compensation. I have been invariably found fault with by my neighbours, saying, they wondered I should lay out the money I have done on the farm, as I did not know how long I had to continue; but I have no doubt a great many of my neighbours, if they had compensation, would be glad to follow my example if they only had the certainty of it.

Mr. DENISON.] As you say these improvements would be good for the landlord, good for the tenant, and good for the labourer, how comes it that the landlord and tenant have not made agreements for making a fair allowance?—It has been a customary thing in Yorkshire for the landlord to have a certain agreement drawn up, that was for not properly cropping, and they do not wish to alter those agreements. I believe, in general, they wish to go on in a similar way that things were going on in their grandfathers' time.

Then, although there are examples such as you have set yourself, and although the opinions of intelligent farmers incline the same way, do you think that there is no hope of landlords and tenants coming to an understanding upon these matters, and making mutual agreements?—I do not think there is: I do not see the slightest possible chance of that.

Then you think that this end, which you consider to be desirable for all parties, will not be accomplished without there is some interference by law?—No; my opinion is, that it will never be accomplished without an interference by law, not in all cases; it might be in some, but very few.

Since you began improving, and since farming has made progress, has the tenant-right made progress also in Yorkshire, as it has in Lincolnshire and other places; for instance, in Lincolnshire, where the use of artificial manure and oil-cake has extended, a claim to the tenant in that country has extended also, and grown into a custom?—Not in Yorkshire; it has not at all. I do not know of an instance.

As far as the custom of the country goes, would a tenant who had laid out money in artificial manure or in oil-cake, get nothing more than he would have done 20 years ago?—Not a bit; nothing whatever. I should not, if I left my farm this year, get a sixpence, without it was that the landlord wished to give it. I do not think that I should get anything at all. I do not know an instance where an individual in our county has got anything in that way.

Mr. HENLEY.] You have stated that you would not take a lease under existing circumstances?—I would rather farm from year to year if I was to be compensated for the outlay that I might make; that is, improvements that I had not derived the full advantage from.

You have stated that you have laid out your money without any security by lease or custom?—Yes.

If you wished to give up your farm it would be because it was no longer profitable to you?—Certainly, if I was to give it up that would be the case; but I am of opinion that one reason probable for my laying out the money was that I calculated upon this; I began with my first landlord, the late Duke of Leeds, knowing that he was not in the habit of discharging his tenants, and therefore I laid out a great deal of capital in improving that property.

You have said that your neighbours, like yourself, were not disposed to take leases?—No.

What is the reason that they are not disposed to secure themselves by leases?—They say it is a long time to look forward to 20 years, and on the smaller farms some of them hereafter, if they improved in their condition, might wish to embark in a larger one, and to take a bigger farm as they got into better circumstances, and on that account they would not like to be tied down for the

term of 19 or 21 years by lease; they would rather be at liberty.

Does the apprehension of a change in the times operate to prevent any persons wishing to take leases?—There is something in that; a good many have a fear that free trade might affect the farming interests at the same time, and on that account I think the risk ought to be with the proprietor, and not the occupier.

You think that the risk should be upon the proprietor of the expenditure of capital, which is speculative?—Capital laid out in improvements that are not exhausted is not; probably if a person wished to occupy his farm, and he improved it very much by different artificial manures, although he has improved the land he does not wish to make any claim upon those improvements that are nearly exhausted.

If the experiment was unprofitable to the tenant, and it was unprofitable to him to hold the farm in spite of his outlay, you think it ought to be thrown upon somebody else to bear?—No; I think that if there were certain valuers set apart, they would be better able to judge whether a man had laid out the capital judiciously or not.

Supposing from a change of times the land could not be cultivated to advantage, it would be no benefit to anybody then?—No, it would not be certainly, but there is very little land but what it is probably as profitable to cultivate as to let it lie dormant.

You say that the tenants in your neighbourhood are afraid of taking leases on account of the prospect of a change of times?—Yes.

Was your original holding by lease or upon yearly tenure?—Always from year to year.

Have you made any endeavour with your landlord to secure yourself by clauses in your agreement?—None whatever.

Therefore you do not know whether the landlord would grant them or not?—I never asked him such a question; but it is not according to the custom of the rest part of his estate, therefore I do not suppose he would wish to make any arrangement with me; my opinion is, that my landlord would not have the slightest objection to any rule to be laid down by Government to bind both parties; it would be to his interest quite as much as mine.

You say that you have introduced a new system of improvements, or of spirited husbandry, and that you have not thought it necessary to ask your landlord to secure you by clauses in the agreement?—When I obtained the prize my landlord made me a present of £50; he said he did not think it would recompense me the fiftieth part of the expense of what I had done; but that it was a little encouragement.

The instance that you have stated to the Committee, of the large estate that suffered in your opinion from the want of the power of compensation, you said was let at half its value?—There are some farms in our neighbourhood.

The question alludes to this one estate?—Yes, it was so; indeed it must have been let at less than its value, because alterations in the rent had never taken place, perhaps, for the last century. It was worth more in its poor state than probably it was let for; but it was not anything like its real value, if it had been well farmed.

Do you think it was an injury to the tenant to hold that estate at half rent?—Yes, the tenants could not have farmed it at all, if they had been paying the value of the land, in the way it was farmed.

Was it an injury to the tenants holding the estate at half rent?—No, it was not an injury to the tenants holding at half rent; but certainly they could not have farmed it in the way it was done, if it had been let at its

full value; the idea of their farming it was in this way, they knew that it was within its value, and they were sure it would be advanced when they got a change of landlord.

If they had had to pay a higher rent they might have made it produce more money?—They would not have had such a fear of any change then.

You stated positively, in your judgment, it was let at half the value?—Something near to that; I believe there have been many instances where farms have come into different hands, where the rents have been raised upon the tenants; and where a change has taken place, the rent has been advanced about one-third more than what it originally was.

On that same estate?—Yes, and the same land.

In spite of the seven years' deterioration they have still run it out for the seven years, you say?—Yes, they have run it out; and as I mentioned, they said they had been looking the last seven or eight years for the death of the landlady, and the farm being taken away from them.

Is there any difficulty in a tenant securing himself by agreement, if the landlord be willing, and has the power to grant it?—Yes, I think there is great difficulty; I do not think they would take them generally.

Is there any difficulty in a tenant securing himself by agreement, if the landlord be willing, and has the power to grant it?—Yes; it would be better if a general law were laid down; it would create probably a bad feeling, if they had to call in arbitrators between landlord and tenant; it would not be so pleasant as if it were a general law.

Is there any difficulty in a tenant securing himself by agreement, if the landlord be willing, and has the power to grant it?—If he were willing it would not be so unpleasant; but it would be more unpleasant than if it was provided for by a regular rule laid down by law.

That is not an answer to the question; is there any difficulty in a tenant securing himself by agreement if the landlord be willing, and has the power to grant it?—I do not know that there is if the landlord be willing to do so; I would rather have it laid down by law, and to have certain arbitrators set apart to settle the question between them.

Would you have the arbitrators appointed by law as well as the power to value?—Yes, I should recommend that those men should be set apart in every district, and for this reason, it is not a pleasant thing to interfere between landlord and tenant.

Who should appoint them, in your opinion?—I think they ought to be appointed by the Legislature, certainly.

Would you have the names of the persons put into the Act of Parliament?—No, they might die off; but then others could be appointed, the same as in other cases.

Who do you think ought to have the appointment?—I think the same party that made the law.

That would be the Parliament?—Yes.

Would you have a fresh Act of Parliament passed every time a man dies?—No, I do not know that there would be any necessity for that; but there must be an appointment and different alterations when a man died off, or a man might get to be not fit for that business.

Who, in your judgment, ought to be the parties to fill up the vacancy?—I think Parliament.

Then it would be necessary to have an Act of Parliament upon every death taking place?—No, because it would not require an Act any more than it does when a vacancy occurs in any other appointment; a person could be appointed without a fresh Act of Parliament.

Whom by?—By Government.

You think the appointment of the arbitrator should be in the Government?—Yes, if the Government made that Act, it should be in their hands to appoint those people.

In your opinion should the Act of the Legislature be retrospective as well as prospective?—No, I think not; I think it should be from the time of the passing of the Act.

For the future?—Yes, for the future.

In your opinion should it over-ride private agreements or not?—Only agreements from year to year; if they were on a lease it is a different matter; probably a man has been getting the advantage who has a lease for the time previous.

It should over-ride agreements from year to year?—All private agreements, if only from year to year.

Should the tenant and landlord have the power to keep themselves out of the operation of the law, if they choose, by agreement?—No, if that was the case it would not do any good; it would be better, if it was general, to act in all cases.

Mr. NEWDEGATE.] Do you think it is the general opinion among the tenantry of your district, that it would be desirable to have some persons appointed to assess the compensation; in fact to reframe the yearly agreements between landlord and tenant throughout the whole district?—I hardly know how to answer that question.

You thought it desirable, you said, that there should be some parties appointed with power to award compensation, and entirely reframe the terms upon which yearly tenures are held?—Yes, at present that is what is required to give compensation to the landlord, provided there is any dilapidations; but providing there is anything done at the expense of the tenant which he has not got his capital out of, the tenant should have an opportunity of getting it back again; that appointment should be on behalf of both parties, that they should decide on behalf of the proprietor as well as on the part of the occupier.

Would not the effect of that be, that these public officers would, in fact, have the letting of the whole land in every respect except the amount of rent?—No, they would only have to do that where there was a claim; if there was an agreement of tenancy, and both the tenant and the landlord were satisfied with each other, they need not call a man in to arrange at all if they were both agreeable; it would only be where there was dissatisfaction between the two parties.

Suppose the landlord and tenant had made an agreement between them, at the commencement of a tenancy, containing certain stipulations for improvements, and certain conditions upon which the dilapidations should be paid for, and those two parties, the tenant and landlord, subsequently quarrelled, would you enable this public officer to come in to set aside the agreement between the landlord and the tenant, with respect to improvement and dilapidations, and decide according to some rule to be laid down by Parliament?—It depends upon whether those parties after the period when the act passed made a private agreement between each other. I do not see why Government should interfere with that if it be made binding.

You mean this: that you do not think it would be just that where a private agreement existed between yourself, for instance, and your landlord, that any third party should come in and make an arrangement between you upon different terms?—Not if the agreement was made after the act was passed; if both the landlord and the tenant were agreeable to make a private agreement between each other, or to abide by that agreement, on stamps, so as to be binding, my opinion is that this law there should not interfere.

Then would you have it interfere in the case of an agreement now existing between landlord and tenant that is binding; would you allow those parties to come in and interfere in any agreement which might exist between you and your landlord at the time of the passing of the Act?—Yes; I would set all the agreements that were made previous to this time aside.

You would completely remove all agreements?—Yes, all; if the tenant and landlord wished to come in afterwards, then they should abide by their own agreement; but if a provision was made for both parties, the landlord is insured not to have his land in a dilapidated state, and the tenant is insured for improvement he has made and not got back the value of again; then I think after that provision was made, if he entered into an agreement against his own interest he must abide by it.

Do you think the opinion is general, among the tenantry of your district, that a law should be made which should set aside all the existing agreements between landlord and tenant, where they are for yearly tenure?—Yes, to a certainty; that has been spoken of for a number of years, that if they had the opportunity, for instance, that they have in Lincolnshire. I heard some of our tenant farmers say, the other day, when they spoke of Lincolnshire being better farmed than Yorkshire, they said there was no wonder about it; that they should like to have the advantage derived by the tenant there; if he expended his capital in bones and guano, and artificial manures of different descriptions, and cake for his cattle, he got remunerated for all that he had not received benefit from, when he left; and on that account if they had the same opportunity no doubt it would be carried out in our county.

You wish that all existing agreements, from the passing of the Act, shall be swept away, and to establish by law some practice that would be assimilated to the customs in Lincolnshire?—Yes; no doubt of it, for this reason: if the existing agreements were to go on, the tenant would not wish to fly in the face of the landlord, who might say, we are not compelled by law to alter our agreements, and I suppose it is not necessary for us to have them altered, and therefore we must go on as we were before. The passing of that Act would not be any benefit without it did set aside all agreements previous to that time.

Mr. STAFFORD.] Would you apply it to leases as well as agreements?—No, not till the expiration of the lease.

Mr. NEWDEGATE.] You would not then set aside the leases as well as the yearly agreements?—A lease is a very different thing, because, for instance, where a person has taken a lease, if it has been profitable, he has been allowed to plough up old swarth land, and I know where leases have been given with permission to break up the old land, and to lay down the same proportion, a good many years before the lease was at liberty, and therefore it would be hard upon a landlord if a person had been allowed to break up his land, not to make him put it back again in the same state as he found it; it would be hard upon the proprietor of the soil; that is one reason why I object to leases being broken.

It seems you do not desire to take a lease?—No; by no means.

Where do you establish a difference between the yearly holding and the lease; does the only difference that makes you wish for the sweeping away of the yearly holding and retention of the lease, consist in this, that the yearly agreements do not generally contain covenants for compensation?—Not exactly; in many instances in Scotland, where land is held on lease, it has been taken in a bad state. There are some landlords that do, in Scotland, allow their tenants to have the first chance after the lease is out; but in many instances

of leases they do not consider that at the expiration of the lease, and they will not allow the man to occupy the farm again, without he will go to the full extent that any other person will go. They generally put them up by ticket.

That is not an answer to the question. Where do you establish the difference between the yearly holding and the lease; does the only difference that makes you wish for the sweeping away of the yearly holding and the retention of the lease consist in this, that the yearly agreements do not generally contain covenants for compensation?—With regard to that, I cannot speak further than I am alluding to now. I do not think it would answer either one party or the other so well, from what I have seen between the two different counties, that is, Lincolnshire, where they have their farms with compensation for the outlay, and where the land is better farmed than it is in any other part I have seen.

Take the instance of Lincolnshire; a great proportion of the land which is held in Lincolnshire is held under yearly agreement?—Yes.

The tenants have the advantage of the custom?—Yes.

Supposing the tenants under yearly agreements in Yorkshire had the advantage of the same custom, do you not think that would be more advantageous to the tenant than a lease?—Yes, decidedly; not a doubt about it.

Supposing that all that the custom gives in Lincolnshire were secured to the tenants of Yorkshire, by clauses in their agreements giving them compensation, would not the purpose which you desire be effected?—Yes, no doubt about it.

Then your only reason for wishing to break through the yearly tenure in Yorkshire is to give the Yorkshire tenants the same advantage which the Lincolnshire tenants possess under their custom?—No doubt of it. A very near neighbour of mine went from Yorkshire to Lincolnshire. He was considered a very moderate farmer then, and he has now nearly 4,000 acres, nearly all under the plough, and there is not any farm in Lincolnshire better farmed; so that that proves that a very moderate Yorkshire farmer will make a good Lincolnshire farmer, if he has the same tenant right to secure him.

Do you know of any reason why a Yorkshire tenant should not have the same advantages, except the absence of custom, that is, except that the custom is found in Yorkshire not so advantageous to the tenant as it is in Lincolnshire?—That is the very reason why Yorkshire is not so well farmed, no doubt.

Then if by clauses in the special agreements between yearly tenants in Yorkshire and their landlords, they were secured the same compensation which is assigned in Lincolnshire, you think that the arrangement would be satisfactory?—There is not a doubt about it. I believe in 99 cases out of 100 that both landlord and tenant would be satisfied with it.

MR. STAFFORD.] Is there any special Act for Lincolnshire?—No; it is the custom of that part of the country; some of the land was in a bad state, and that has had the advantage of being brought into a better state.

What the Lincolnshire farms have got without Act of Parliament, that you want to get in Yorkshire by Act of Parliament?—Yes.

SIR C. LEMON.] If the landlord and the tenant would be both so well satisfied with such an arrangement, why do they not make it?—I do not know; it will never be put in force in Yorkshire; at all events, not for a length of time; if it was done by Government it would have a better effect, it would bring it to hear at once.

Does not it strike you, that it would be better that

all agricultural improvements should be gradually brought into use by agreements of that kind; by an understanding in that way, and not by force?—Not exactly by force; it is not very good to force a man, but it has generally been a customary thing for the landlords to make the agreement, and probably it was mostly on their own part to compel tenants against over cropping the land, there being a bad means of managing their land by over cropping.

You say it would be necessary to enforce that by Act of Parliament; have you any doubt that an agreement of that kind would be very much to the interest of the tenants?—Yes.

And you have no doubt it would be advantageous to the landlord also?—Yes.

Then all that you want is, that the mutual advantage of both parties should be made more apparent?—Yes, to come more into practice, that is what I want, to get it into general use.

If that is the universal understanding, which it appears to be among your own neighbours, why does not that practice prevail?—Probably the proprietor of the soil does not see that in the same manner that the tenant farmer does; if Yorkshire had the same advantage as the next county has of tilling the ground, it would come into general practice, and there would be no excuse whatever; it is an excuse sometimes for the tenant farmer to say, he has not the advantage he ought to have in tilling the farm.

You mentioned a peculiar mode of drainage by digging deep swallows; is that practised to any extent?—Yes, where the water cannot be conveyed away by cut.

Does not it depend also upon your being able to dig into the strata of gravel?—Yes, it would not answer upon strong clay. I am only speaking where some part of the country is overrun with water, strong wet land, and the other part comes into gravel, and that water cannot be got rid of without taking it in the way I have taken it.

Is that an expensive process?—No, it is a cheap process, because the land is thoroughly drained; it would be very expensive provided it had to be taken away by open cut, but here it is conveyed and brought to a head, which is the same thing. We have swallows that will nearly take water running as fast as would turn a common corn-mill round.

Has it been usual for the landlord to pay any portion of the expense?—No.

That would constitute a fair claim upon the landlord in quitting the farm?—I think it ought to be; there is certainly a great deal of our country that might be improved in a similar way; the landlord ought to be something towards it; it is permanent. I know one swallow that was made upwards of 30 years ago, and it answers just the same now as it did when it was first made.

MR. NEVDEGATE.] You seem to be acquainted in some degree with Lincolnshire; do you know that the custom of Lincolnshire grew up from one agreement between a landlord and a tenant?—No, I was not aware of that; I am nothing more acquainted with Lincolnshire than taking a tour through it to see the improvements going on there, and I found some very good farming in that neighbourhood.

You are not aware that that custom has gradually proceeded from the establishment of one advantageous yearly agreement between a landlord and a tenant?—No.

Might not the same thing happen in Yorkshire?—It might; but it is a great pity that the community at large should suffer for a number of years, when it could be brought into practice in so short a period.

Mr. HAYTER.] Do you hold your farm under agreement in writing?—Yes, in writing.

Is the custom defined in that agreement, or any way expressed in that agreement?—Yes, with regard to the cropping of the land.

And as to the incoming and outgoing tenant custom? Yes, and it provides against reletting the land, and many other things besides.

Is that expressive of the custom that exists, or is it an agreement independent of the custom?—It only goes upon the custom that exists in the neighbourhood.

Supposing there were no agreement, are the Committee to understand that the same custom would exist between the incoming and outgoing tenant?—Yes, I have known where it has been tried and the custom of the country has stood good.

The custom of the country is the law of that part of the land?—Yes.

How far do you speak of the extent of that custom; how far has it prevailed within your knowledge?—I can speak for pretty nearly 20 miles square; I cannot go beyond that, I think.

Is the general state of husbandry the same throughout the district?—Yes, mostly; I do not think there is much difference.

Has the custom arisen from considerations of convenience of the landlord and tenant with respect to the mode of cropping?—No doubt it has.

Are you to be understood to say that the alteration you propose is an alteration in the custom which is desirable from the difference in the mode of cultivation?—Yes, no doubt of it, that is a very great thing that they want to come to, an alteration in the mode and the means of laying out their own capital, so that the tenant farmer should not be taken advantage of.

Are we to understand from that that the farmers have not under the existing custom been in the habit of laying out their capital?—Not many.

And those who have so laid it out have laid it out as you have laid it out, upon a fancied security in the tenure?—Yes, and sometimes people take advantage of that, and when that is the case it is a terror to the whole district where a man has farmed superior to his neighbour upon the estate; the one has a rise in his rent and the other remains as he was.

You want to make the customs of Lincolnshire the law of the land?—Not exactly that; I do not speak of the customs of Lincolnshire, further than that they are compensating.

And that compensation in that district you want to establish in a more extended district?—Yes.

And you think that from that great advantage would arise to the tenant and landlord?—Yes, to both parties, and the country at large; it would bring a great deal more labour on the land that is not now expended.

Do you imagine that the custom that now exists in Yorkshire was a custom that grew up in consequence of the supposed advantage to both parties?—I do not believe it has arisen from that, but for want of knowing better.

Mr. DENISON.] Customs are things that must be changed slowly?—I think this requires changing quickly; it has been changing slowly for a length of time.

If you were to rely upon a change through a change of custom, that is a thing that would grow up only slowly?—Yorkshire has been standing still.

Your opinion is, from your knowledge of the habits and feelings of the landed proprietors, that they would not make voluntary agreements of the sort you think necessary, unless some interference arose by law?—Some part of them might; I do not think the whole would, because there are many that might not,

probably, understand the advantage they would derive from it, and on that account it would be a long time before they would be persuaded that it would be for their advantage.

Then until a thing should become general, it could not be called the custom of the country?—No, it would not alter the present principle without it was passed by law.

If you were to wait for a change of custom, much time would be lost?—No doubt of it.

At this particular juncture in farming affairs, this is a matter of a great deal of importance?—Not a doubt of it, and the sooner any operation took place that would be beneficial to all people, the better; I am certain that not one in a thousand would be a loser by the alteration.

From your knowledge of the common run of valuers through the county, do you think it would not be perfectly safe to leave this matter to be settled by the ordinary valuers of the county?—I have no doubt but that it would; but it sometimes happens that probably some of those ordinary valuers might have something to do with either one party or the other, and on that account, if they were set apart, and their award was final, that would not give any offence, if it did not seem to quite meet the approbation of both parties; that would be the only advantage of appointing people as district valuers.

Do you think it would answer the purpose if you left the landlord and tenant, or the outgoing and incoming tenants to appoint their valuers, supposing that one of those men whom you have spoken of could be called in as an umpire?—It is an awkward thing calling in an umpire; it might be as well referred to one man if that one man's decision was to be final. I have had a great deal of valuing corn between one neighbour and another; but if two people try to make an agreement, my opinion is, that all that has been done by them ought not to be kept as a secret from the umpire; he ought to be acquainted with what both their interests are, and then probably he could make a satisfactory award, but you might as well only have one valuer as to have to choose an umpire to finally settle the question, because what the other two valuers have done in the first instance would be set aside.

Do you know that where these tenants-rights prevail, the common habit of valuing is by a valuer on each side, and an umpire?—I do not know the custom of Lincolnshire in that way; the custom is in our county, that some of the agreements bind the outgoing tenant to sell his crop on or before such a time to the incoming tenant, and when that is the case, it is done by three valuers; but they are generally all appointed, the two valuers are chosen, and between them they choose a third man, and it has been found a great deal more advantageous where that third man was made acquainted with what the other two had done: it is customary for the three valuers to go together, he is acquainted then with the whole of what has taken place between the other two.

Mr. NEWDEGATE.] You have stated that the difficulty of the umpire arises from his not knowing upon what the valuation of the arbitrator has proceeded?—Yes.

Would not it be advantageous, that the arbitrators should be compelled to state in their award the items upon which they have awarded that compensation?—Yes, that is my opinion.

And the same in the case of dilapidations?—Yes, to be sure.

You think then that in order to establish a just system of arbitration, it would be necessary that the valuator or arbitrator should state distinctly the items

upon which their valuation is fixed?—Yes; they ought to state it distinctly to the arbitrator. I do not think it would be right exactly to state those particulars to the parties they are connected with: but what my meaning is, is this: that the arbitrator should not be blindfolded; he ought to know what the other two valuers have done, and give him the items; but I do not think it would be beneficial to give every item to the parties; it might cause a discussion among the parties; it would be better to make it out either that the landlord was indebted to the tenant so much, on account of his capital laid out, or that the tenant was indebted to the landlord so much money for dilapidations, leaving the items out; my meaning with respect to that was this, that the arbitrator ought to be acquainted with all the particulars.

In short, whoever shall make the final decision, which would be the umpire in the case you suppose, should be made acquainted with all the items upon which the valuation proceeded?—Yes.

CHAIRMAN.] If the arbitration is to be by three parties, you then think it would be advantageous that the umpire should act with the other two from the first, and make himself acquainted with all the circumstances?—Yes; it would be better; because then the decision of the two would be final, the same as judges being called in to judge cattle; it is not always the case that three judges chosen agree exactly, but the majority of one would be sufficient.

MR. NEWDEGATE.] Your only fear of difference arising owing to the statement in writing as by the arbitrator, is that it might lead to some difference between the parties concerned?—Yes; my opinion is, with respect to that, that if the tenant and the landlord had to choose those people, it would be not so pleasant; it would be better to have people chosen and set apart on purpose.

Your only fear of difference arising owing to the statement in writing as by the arbitrator, is that it might lead to some difference between the parties concerned?—No doubt of it.

Supposing those items were only produced in cases where a difference had already arisen, your objection would not have force?—No; it is evident that if the landlord and the tenant agreed, without calling in those valuers, that is, that if they were both perfectly satisfied, the tenant claiming so much from the landlord, and he being satisfied to give it him, or the landlord claiming so much from the tenant, and he being satisfied to pay it, the valuers would not have to interfere; but if the valuers were to interfere it would be better to keep the items from both parties, they merely giving in their valuation of the damages.

But you think that those items ought to be produced to the umpire?—No doubt of it; he should act with the two valuers.

In the case of the appointment of an umpire subsequently, you think it is essential to the justness of his decision, that the items should be produced for that decision?—No doubt of it, to him; the two valuers ought to acquaint him with what they have done. I think it is better no doubt for them all to act together from the first, where they have to be called in.

But in the case of an umpire being appointed subsequently, to decide the matter between the arbitrators, you think that the items ought to be produced?—Yes, to him; but not to the proprietor and the occupier.

To whomsoever shall decide the matter between the arbitrators?—Yes.

MR. STAFFORD.] You have said that you think with respect to the appointment of the arbitrators that the patronage of the appointment of those arbitrators should be in the hands of the Government?—Yes.

Do you think that any class of men should be ineligible, that is, that there should be restrictions in the Bill as to the choosing of those arbitrators from any particular class?—No, I do not think that that is necessary; I should think that the Government would choose such men as had practical knowledge respecting what damages ought to be laid upon both parties.

You do not think that either the tenant farmers or the landlords should be ineligible?—No.

You would admit farmers to be appointed?—Yes.

Have you considered at all how you would have them paid?—There cannot be a stated thing, but there ought to be according to the number of acres of ground that they have to look over, and what they have to do.

That being the case, from whence should the money come to pay them?—From the parties that were in the wrong. If the landlord brought his action for dilapidations against the tenant, then that amount of money ought to come from him if he were in the wrong. If the landlord was owing to the tenant I think he ought to pay the whole of it without the tenant was in the wrong, so far as leaving the farm in a dilapidated state goes; then the amount ought to come from his pocket.

And do you think that those arbitrators should have full power to recover in any case?—Yes, or it would be a very disagreeable thing. I think they ought to have full power to recover their expenses before the landlord recovers his rent, and for this reason: it would be very hard for them to be brought in and not to have a guarantee for their expenses.

If the tenant were in the wrong and the expenses were awarded against him, would you make the claim of the arbitrator prior to that of the landlord?—Yes, there is no doubt of it, or there would be no security, because, if the landlord was to be secured for his rent, the valuer would have a poor chance, probably, in some instances where a tenant was leaving a farm in embarrassed circumstances.

MR. HENLEY.] You seem to have given a great deal of attention to the details of this plan as to the appointment of the valuers; do you think that those Government valuers ought to be allowed to take general business of that description in the neighbourhood?—Yes, no doubt of it; I do not see why they should not.

You were understood to say that you thought that parties appointed by private individuals, landlords or tenants, might be under obligations to those tenants?—Yes.

Would not those other parties by taking general business be equally under obligations?—Yes, in some instances they might, but it would not be a general thing, because the tenant might appoint his own next neighbour and the landlord the same; and if there were general valuers, whatever they did would be thought right by both parties.

Who should you propose to pay for the valuation, the landlord or the incoming tenant?—That depends upon circumstances; my opinion is, if a farmer left a farm in a dilapidated state he ought to pay the valuers.

The question is this: who should pay the outgoing tenant for the amount expended upon the farm, the landlord or the incoming tenant?—He ought to have security from the landlord.

In your opinion, what should that security be?—He ought to have the land to go upon; the security ought to be from the landlord, but dependent upon the circumstances; my opinion is, that he ought to have possession of the land until the landlord either remunerated him for the expenses, or compelled the incoming tenant to do it.

You would allow him to obtain possession of the land?—Yes, till he had the guarantee given him that

this amount of money was to be paid; without the outgoing tenant had the landlord to look to, the incoming tenant might be a man without capital, and then he would lose the money that he had laid out.

Then the amount to be paid to the outgoing tenant must be ascertained, according to that view, before the termination of the tenancy?—No doubt of it.

In your view, should the tenant give any notice to the landlord of the capital he was about to expend, such as in drainage, that the landlord might satisfy himself how the work was done?—Yes; he ought to give notice and have his consent for every penny laid out, that is, either from the landlord or his agent.

In your opinion it would be right?—Yes, my opinion is, that he should not begin to take possession of another person's property, and expend money without the consent of the other person, the landlord.

Supposing the landlord refused to give his consent; how then?—If that was the case, he would be at liberty to leave it.

In your opinion, in case of notice being given and consent refused, the tenant ought not to be allowed to lay the money out?—Not with regard to suchlike as permanent improvements, such as drainage, farm tanks, and buildings, and so on; it might not be convenient for the landlord to allow it to go on, and they should not be allowed. But with regard to improving the land by artificial manures in many ways, that I think ought to be at the will of the tenant, because if it come before the arbitrators they would be satisfied that the amount he laid out was a great benefit to the landlord, or they would not award any amount to the tenant on that account.

Should any notice be given to the landlord as to the laying out of money upon artificial manure?—No, I do not think that at all necessary.

Would their be no difficulty of proof?—No difficulty whatever, I think; I think that the tenant ought to give the receipt from the person whom the article was brought from; therefore there would be a guarantee against fraud.

It would merely secure the purchase of the manure; it would not secure the spreading it upon the land?—But the valuers would be able to prove whether that quantity of manure was put on; if they had a doubt about it, they could bring his servants or farm people to prove whether that quantity of manure was put on or not.

That might be proved by the labourers?—Yes; and they could not have better proof.

The bill of the purchase would merely prove that that quantity of material was brought and delivered to such and such a man?—Yes; and he would have to prove from his own people that it was used.

Do you think it would be at all a matter easy of proof when running over three or four years?—No doubt about it.

Do you think there would be no opening for fraud?—None; I do not think at all there would.

Have you ever known attempts at fraud in valuing existing customs?—No, we have not had much of that in our county; I never knew of an instance of that kind.

CHAIRMAN.] You were understood to say, that in the event of any Bill being passed on this subject, you would recommend that it should not be made applicable to existing leases, but that it should be made applicable to holdings by yearly agreement?—Yes.

In your opinion then, the landlord, the land being held by yearly agreement, would have his remedy in his own hands, if he did not choose to submit to such a law?—Certainly; he would be at liberty to discharge his tenants at the year's end.

You stated that you would rather decline holding land under a lease on account of the uncertainty of the times?—Yes.

Your apprehension then is, not that the land will become altogether unfit for cultivation, but that you would not like to be tied to give a fixed amount of rent for so long a period as 21 years?—Yes, that is it; I do not at all apprehend the land going out of cultivation; my opinion is, that I should not like to be bound to give a fixed rent for a farm; in short, my farm, for the rent and title, is upwards of £1,200 a year for 485 acres of land; the title is commuted at £156, and the rent is £1,050, that is, £1,206 a year. I should not like to be fixed with that rent for 20 years to come, though no doubt the farm is worth more by £300 a year than it was 10 or 12 years ago, from the improvements I have made; but I would rather hold it from year to year.

Sir C. LEMON.] Is not there a conviction in people's minds that it can never be worth while to a landlord to exact rent, even if it was due, beyond what the farm can fairly bear; if you were under lease, and the rent was found too high from a change of times, is not it the conviction in people's minds that it is not to the advantage of the landlord to exact the full rent, though it is his due?—No doubt it would be to his advantage; but there are not many landlords who have tenant farmers, but what would try to get what the agreement was for.

A landlord acting upon the principles of common sense, would not it be decidedly his interest to reduce his rent rather than to let his farm be wracked out?—No doubt it would be to his advantage, but there are very few that would avail themselves of that opportunity; they would mostly exact all they could.

Is it your opinion that landlords are not endowed with common sense like other people?—Yes, quite as much, and perhaps with more than many others, but they like to take all they can get, most part of them. If I could insure my landlord's life for 19 years I should have confidence that he would not want me to pay more than the land was worth.

CHAIRMAN.] Are not there many places where the landlords have not a power over their own property, being in the hands of agents and executors?—Yes, it is the case, but not very often; mine is in the hands of executors and agents, but still they allow the landlord to have power to grant what he thinks proper.

Mr. HENLEY.] Your farm is good land of course by the rent you pay?—Yes, very good land.

There is a great deal of poor land cultivated in this country, is there not?—Yes, but there is a good deal of land in the county which I am sure, if cultivated in a similar way to mine, would be quite as good.

There are very poor tracts of land, which if there were very great alteration in the times must go out of cultivation?—Yes, but if they were in a good state of cultivation to begin with, there would be a greater encouragement to go on. If any great alterations were to take place in the times, there would be 19 out of 20 of the lands that are in a bad state would go out of cultivation. Land in a high state of cultivation in the better description of farms would stand a better chance. I repeat that there are in this country many tracts of land which might be made to grow as much on 20 acres as it now does on 30; it would always be to a farmer's advantage to keep his land in a high state of cultivation in preference to keeping it in a bad state.

Evidence of Mr. HENRY WHITE.

CHAIRMAN.] You are a land surveyor, and indeed

the only land surveyor at Warrington in Lancashire?—I am.

And you have a great deal of business in valuing and surveying land in that neighbourhood?—I have an extensive business for 20 miles round Warrington, extending through South Lancashire, and a great part of Cheshire.

You are secretary to a large agricultural society, the Liverpool and Manchester Society?—Yes I am the sole secretary.

Are you not also an inspector of that society for premiums given for the best cultivated farms within its limits? Not for that society; but I was inspector for the Liverpool Society before it was united with the Manchester. I was joint inspector for this society, and I was inspector for the South Cheshire Society. I am inspector of farms for the Darsbury Farmers' Club, in North Cheshire.

Have you also had the management of considerable property in Cheshire?—I had at one time for about 13 years, and I have now the agency of a small estate.

In those different capacities have you become practically acquainted with the farming of South Lancashire and Cheshire?—I think I have.

Will you state to the Committee what are the customs between the outgoing and incoming tenants in Lancashire?—They are very limited indeed. A tenant professes to quit his land on the 2nd of February, with the exception of a pasture field, called the outlet for the cattle. The house, buildings, and the outlet are given up on the 1st or 12th of May, as the case may be. The tenant leaving his land, therefore, on the 2nd of February, has nothing upon it but the wheat crop, and for that he gets half of the wheat crop allowed him by the oncoming tenant, if it is after green crops (which it is generally with us); if it is after the summer fallow, he gets two-thirds of the wheat crop allowed him, and that, with the exception of the allowance for clover or grass seeds, which have been sown the previous year, is all that he gets.

MR. HENLEY.] What are the holdings, Michaelmas or Lady-day holdings?—They may be considered as Lady-day holdings.

CHAIRMAN.] It is old Lady-day, is it not?—The holding is the 2nd of February, as I stated, and the 1st or 12th of May for the outlet.

MR. HENLEY.] When is the rent payable?—From an intermediate period, which is Lady-day.

CHAIRMAN.] To whom does the dung belong?—It belongs to the farm.

Does it belong to the landlord or to the outgoing tenant?—It belongs to the landlord, taking it in that sense.

The incoming tenant makes no payment for the manure he finds upon the premises?—None whatever.

Is any compensation made for any kind of improvement to the outgoing tenant?—None can be demanded by the custom or legally; but it is sometimes given by the landlords.

Is it often given by the landlords?—I think it is sometimes given by liberal landlords. I myself have recommended it to be given in many instances as a matter of justice.

Was that in Lancashire or Cheshire?—In Cheshire.

If it were given in Lancashire, in what way would it be given?—Probably in money, and the landlord would then be at liberty to make his own arrangement with the incoming tenant for any advantage he ought to have out of it.

Is that commonly practised in Lancashire?—I am afraid not.

Is there much room for improvement by draining in Lancashire?—Very much.

What is the general character of the South Lancashire land?—About two-thirds of it is strong clayey loam,

upon a subsoil of clay. The clay requires under draining before it can be properly cultivated.

Can you state what is the average yield of wheat upon those cold clay lands?—Upon the cold clay land, about 20 bushels per statute acre.

MR. T. EGERTON.] You mean the undrained land?—Yes, undrained land.

Are you acquainted with land that has been well drained in Lancashire?—Yes, I am.

Has the produce been much increased there?—Yes, it has been frequently doubled.

Are you acquainted with the extensive improvements that have been made in Lord Derby's property?—I am.

Have those improvements, which have been carried on there for many years, tended greatly to increase the produce of Lord Derby's farms?—I have no doubt they have.

To the extent that you have already mentioned?—I am not personally acquainted with the estate so as to give a certain opinion as to that but I have seen very heavy crops of wheat upon the land after draining, I think nearly to the amount.

Is much of the land in South Lancashire so wet as not to bear root crops at present?—Certainly the clay lands are not fit for root crops at present, if they are not drained.

Is there any considerable proportion of these clay lands that would bear good root crops by draining?—Yes, all by draining and subsoil ploughing.

Lancashire has a very wet climate to contend against, has not it?—Yes, very wet indeed; we have 36 inches of rain falling in the 12 months.

Does not that render the undrained clay land peculiarly disadvantageous for farming?—Peculiarly so for every state; but perhaps the least so for that of grass, with which a great portion of it is obliged to be cultivated in consequence.

What sort of pasturage does it make?—Very miserable.

If the increase of produce would be great upon the undrained arable land, would not it be much greater upon such poor undrained pasture land, if it were drained and put under the plough?—It would be equally great upon the pasture land.

MR. T. EGERTON.] Has it come within your knowledge where the land has been drained, what has been the increase of stock that has been kept upon it; speaking as to the grass lands entirely, what increase of dairy stock has been kept upon it in consequence of that?—Upon the dairy farms, the drainage of the land has generally been followed by the application of bone manure, and the increase has frequently been half as many more cattle or one-third more cattle and cows than were kept before by the farmer.

CHAIRMAN.] Is that application of bone manure at all practised in Lancashire or in Cheshire?—It is practised to a very limited extent on the grass land in Lancashire, but in the growth of turnips it is beginning to be more generally used.

As to Cheshire, are the customs between incoming and outgoing tenants in that county similar to those in Lancashire?—They are.

Is the period of entry the same?—It is.

Is the soil of Cheshire, with which you are extensively acquainted, generally a cold wet soil?—Not so much so as South Lancashire; but one-half of Cheshire is a cold soil, the other half is sandy loam and peat, incumbent upon the red sandstone and upon marl.

The climate of Cheshire is like as that of Lancashire in respect of rain, is not it?—It is very similar.

Are the undrained lands of Cheshire in a very cold unproductive state?—They are.

Is the grass land of Cheshire much benefited by draining?—Yes, it is very greatly benefited by draining.

Is there a great deal of it that still remains to be drained?—I should think there is one-fifth or one-fourth or more; but I have no means of stating correctly.

Of the grass land?—I should think there may be that proportion.

Mr. HENLEY.] Do you say that have been drained, or that are to be drained?—To be drained.

CHAIRMAN.] What proportion of the cold arable lands of Cheshire has been already drained should you say?—Probably half the arable land, or not so much; but the proportions are very difficult to define, of course.

Have you more grass land or arable land in Cheshire?—About two-thirds are in grass, and one-third in the arable state.

Have you a peculiar mode of improving grass land in Cheshire, by bones, that is almost confined to that county?—We have; the application of bone dust to the cold clay land of Cheshire has perhaps made the greatest improvement that ever was made in that county.

Will you describe to the Committee the process of those improvements by the use of bones on pasture lands?—The bones applied generally by the farmers are the boiled bones, which come more immediately into action; they are generally applied either in October or November, or in the month of April; they come into full action in about 12 months, or rather less if they are boiled bones; if they are raw bones we do not consider that they will come into action so soon by a great deal.

In what quantities do you apply the bones?—At the rate of one ton per statute acre.

What is the price of the ton?—About £4 the boiled bones; the others will vary from £6 to £8, according to the degree of fineness they are reduced to by the person who sells them. I have paid as much as £8 for very fine raw bones.

Have you any restriction as to stocking the land during the year of the application of the bones?—The landlords, if they find the manure, charge a per-centage for it, of course subject to the land not being broken up again without their consent.

When you have applied a very heavy dressing of bones to the grass land, are you obliged to treat that land differently as to stocking?—It would carry a much greater weight of stock in a few years; I do not know anything else; the food is very rich, and it is doubled; trefoil and white clover are produced by the application of the bones, and all the good grasses are brought forward; it is an excellent fertilizer, and brings out all the virtue of the land.

How long does this dressing last?—It will last much longer on the pasture land, because the increased number of cattle it will bear will cause an increased fall of manure upon the land, therefore we consider if the land continues in pasture it will never depreciate.

You consider this heavy and expensive dressing of bones to be almost a permanent improvement?—Yes, in the pasture land, not in the mowing land; perhaps in the mowing land it would be exhausted after four or five mowings.

Mr. T. EGERTON.] Is not the average supposed to be about 11 or 12 years with bones?—We should not think of allowing a tenant anything beyond that period (if we considered him justly entitled to something), not even for pasture land.

In the case of a tenant laying out money, and putting on the bones himself, would he not be paid for that in 11 years?—I think he would be repaid in a much less time where the land has been previously drained.

You have mentioned with respect to the boning, that a process was carried on in Cheshire of applying marl to the light soils?—That was formerly very much practised, more so than at present, now that the artificial manures

are applied. Marling is a very essential improvement to the sandy soils of Cheshire.

How many square yards do you reckon to be required per acre?—The application is generally from one to two roods of 64 cubic yards.

What is the period that the marling is supposed to last for?—I should think from seven to ten years. When the land gets laid down to grass, as it does sometimes after marling, the marl lies partially dormant until it is ploughed up again; but not altogether so, because the grass will be much improved, and therefore the grass roots must be deriving benefit from it. We find it gradually sinking every year; the longer the field is in grass the deeper we find the marl.

Mr. HENLEY.] How are the bones that you have spoken of applied to the grass land; in what shape; broken very small, or how?—Those that are boiled are crushed as small as they can crush them, and they are spread by hand.

Is there anything mixed with them?—No.

How are the raw bones applied?—They are frequently applied in the same way; but they are sometimes, for turnips, applied with farm-yard manure.

But how are they applied on the grass land?—In the same way.

And crushed as small as you can crush them?—Still finer, if possible, than the boiled bones, because they will not decompose so soon.

CHAIRMAN.] You say that since bones have been introduced, that marl is not so much applied to the light lands of Cheshire?—Since the general use of bones and other artificial manures; certainly marl was more especially applied for promoting good crops of corn.

Is it your opinion, that both on the grass land where this heavy dose of bones is given, and on the light land where bones are used in the ordinary course of farming, it would be wise to give to the tenants a claim for that expense incurred by them on their quitting their farms?—I think so.

Do you think that the recognition of tenant right for improvements would, both in Lancashire and Cheshire, tend greatly to the improvement of farming?—I do.

What effect do you think it would have upon the landlord?—I think it would have no bad effect upon the landlord but this good one, that of giving him better security for his rent.

You think it would give him better security for his rent; would not it render it more easy for him when he had farms vacant, to obtain men of capital as tenants for them?—Yes, I think so, invariably.

Do you foresee any difficulty in making an arrangement for compensation when the tenant quits the farm, or any bad feeling or litigation that is likely to arise between the landlord and the tenant?—It frequently occurs now, too frequently indeed.

You were asked whether you think, that if the tenant right for compensation were granted, in that event any great difficulty would arise as to the valuation of the rates, or any unpleasant feeling or litigation would be likely to arise between the landlord and tenant?—Not at all likely; I think a great deal of bad feeling now existing would then be done away with.

Mr. HENLEY.] You have stated that one-fifth of the grass land of Cheshire is undrained?—I think that is probably the case, but it may be much more.

How long have you been acquainted with Cheshire?—For 20 years.

Has the drainage of the other four-fifths been done during that time, or was it done antecedently?—A very small portion of it was done when I knew it.

Then the four-fifths have been drained in the period over which your knowledge extends?—It is only some of the soils that would require it.

You are understood to speak of the grass lands principally, which are the heavy lands?—There might be half that would not require it that would be two-and-a-half fifths.

And you think about the half of the arable land is also drained that requires it?—I think probably so now, for the improvements have been going on extensively for several years.

At whose cost have they generally been done?—Sometimes they have been done by the landlord, but more frequently by the landlord and tenant joining.

Consequently they see their mutual advantage, and agree to do that?—Yes.

Are the lands of Cheshire you have spoken of held ordinarily by lease or by agreement?—They are some of them held on lease, but more commonly by agreement, from year to year, I think.

And under that agreement from year to year, both parties seeing their interest in them, those improvements have taken place?—Yes, they have.

Has the operation of boning been general in Cheshire? It has been very general.

And what security has been given for that; has it been done at the joint expense of the landlord and the tenant, or by the tenant, or by the landlord?—In some cases, where the landlord is a man of property, and has the money to spare, he has manured the land with bone dust and charged the tenant from 7 to 7½ per cent. for the outlay of the money. In many other cases the tenants have found the bone manure themselves.

Has that been done to a very considerable extent in the one way or the other, without any law to step in?—Yes.

Are the lands in Cheshire generally held by lease or by tenure from year to year?—They are more frequently held by yearly tenancy.

You have spoken of one large estate, namely, Lord Derby's estate, as having been drained; do you know at whose expense that was drained?—At the landlord's.

What tenure was it drained upon?—The landlord charged 5 per cent. for the outlay to the tenant.

What is the tenure of land in Lancashire?—Principally from year to year. In some few cases it is held on lease, or what is much the same, agreements for a lease.

Are leases more general in Lancashire than in Cheshire?—I do not think they are.

Is there any difficulty, in your judgment, in a tenant by agreement securing himself in respect of any outlay he wishes to make, if the landlord is willing to grant it?—Of course there cannot be if the landlord is willing to grant it; but there appears to be great difficulty at present.

You were understood to say, that in your opinion legislation is necessary; do you think that it ought to be retrospective or prospective?—I think prospective.

Only prospective?—I think that tenants, however unreasonable, would hardly expect it to be retrospective.

Do you think that the tenants are unreasonable?—No doubt they are in some instances, as well as the landlords.

Do you think that in the event of leases, the law should override those leases or not?—I think it could not interfere with existing leases.

In the event of future agreements, should it be competent to any parties to exempt themselves from the operation of the law or not, in your judgment?—I think those parties that granted long leases might claim such a privilege.

Do you think that persons with agreements from year to year ought to have the privilege of exempting themselves?—No.

Do you think the law ought to fix the right of compensation in spite of any agreement made to the contrary?

—I think the law ought to lay down the general principle.

The law laying down the general principle, do you think it right that the landlord and tenant, if they choose, should exempt themselves from that general principle?—I think it would not be wise to allow them to do so; the law would never get properly enforced if that were so; it would be evaded.

You thinking this general principle ought to be applied, ought it in your judgment to be carried to any point beyond that for compensation for money expended?—Certainly not; it must be compensation for money expended, of course.

You would not compel the owner of land to let his land?—Not at all.

Giving him the option of letting it or not, you would propose terms of letting it upon?—I would lay down the general principle upon which it should be let, so that the tenant should be fairly protected.

If the tenant could not get land without, you would not allow him to exempt himself from the operation of the law?—No.

What is the custom as to buildings in Cheshire?—The landlord generally puts them into repair when the tenant goes to the place, and he expects the tenant to keep them in repair upon being found materials in the rough.

Is that the same in Lancashire?—Yes, I think it is; there are various customs upon different estates.

Is it by agreement upon the various estates, or by custom established?—I believe it would be by agreement.

By private agreement?—Yes.

Is there any custom, that you are aware of, existing in Lancashire and Cheshire applicable to buildings?—I think there is no well-established custom.

You have said that you think that the general principle ought to be established by law to give compensation to the tenants; do you think it ought to extend to dilapidations as a set-off against that?—Yes I think it ought to extend to dilapidations and breach of covenants.

Supposing parties holding without agreements, and therefore that there were no covenants; you have said that the law is to operate in spite of agreements; then do you think that it ought to extend to dilapidations?—I think it should extend to dilapidations and bad husbandry.

Dilapidations as applied to buildings, and bad husbandry as applied to the land?—Yes.

Should the principle, in your judgment, be the capital expended by the outgoing tenant, or the advantage derived by the incoming tenant?—I should prefer the latter principle, I think, as the safe guide; but the former might be taken as some assistance to the valuers in forming their judgment.

It is a material difference, of course, between the two principles; what is your judgment as a practical man as to which ought to be the principle, the capital expended by the outgoing tenant, or the unexhausted improvement in the land?—Where a man might not have judiciously expended the money, the valuers should have the power to take that into account.

Do you think that the principle should be decided by the law, or be left to be settled by the valuer in each case?—It might be safely left to the valuer, I think.

You have heard the evidence given by the last witness; should the valuers, in your opinion, be appointed by the landlords or the tenants, or by the government, to act between them?—Inasmuch as I do not know that any inconvenience has arisen in other counties from the mutual appointment of valuers by both parties, I do not see why that system could not still be acted upon. If government officers were appointed, it is clear they could not be allowed to do private business in the district for which they are to act as tenant-right valuers.

That would be your opinion?—Yes; that would be my opinion.

In your judgment, against whom should the outgoing tenant have the remedy?—He should have his security in the landlord; but no doubt generally he would have to get the money from the incoming tenant.

What would be the nature of the security you would give him against the landlord?—It might be by action.

What remedy would you propose against the landlord?—I do not know any remedy so good as by an action.

Supposing the landlord out of reach of action, abroad; how would you deal with that case?—He must have his remedy upon the land, the same as in the Tithe Commutation Act.

Against the person in occupation?—I apprehend he would not give up the occupation until he was compensated; he should have the privilege of holding.

You think he ought to keep the holding until his money was paid?—Yes, or a guarantee given.

In that case what would be the necessity of the cultivation of the land; who is to cultivate it?—The tenant remaining should go on cultivating, if he had not some assurance that his tenant-right would be paid.

And for what period might he continue in possession; for a broken period of a year, or for a whole year, or what arrangements would you make in that respect?—He might continue any period, if he was compensated for what he had done during the state of suspense.

Would you put him in the position of a mortgagee in possession?—No; perhaps not exactly; I do not apprehend any difficulty in the matter; I do not think there would be the least difficulty.

You say that the outgoing tenant should retain possession of the farm until he was paid; upon what conditions do you think he ought to keep that possession, as to the cultivation and as to the period when he was to give it up?—If he held over his time, in consequence of the landlord or incoming tenant failing to make compensation, I think he should continue to work the farm in the same way as he had hitherto done, and until he was compensated.

How is he to be paid for the expenses he has incurred in the cultivation?—By the same rule that he is paid for improvements that he has made; it is not an uncommon thing to pay an outgoing tenant for land ploughed and prepared for the spring corn.

Assuming the parties to be hostile to each other, then how is the tenant to be compensated for cultivation?—If such an event were likely to occur, it would be right to provide for it by a legislative act.

But how is that to be provided for?—I apprehend the same remedy might be given as we have under the Tithe Commutation Act, by distress upon the premises and by sale of some of the land.

But the Tithe Commutation Act does not enable you to retain possession?—No, but it enables us to sell the land when we have nothing else to distress upon.

You state that you would have the same remedy as the Tithe Commutation Act; we should know that; when you say that you would retain possession until it is paid, how is that to be done?—I have not given that point consideration beyond what I have stated; I am of opinion it is a difficulty that would not arise once in a thousand times.

Did you state that the tenant ought to be compensated for manures and oil-cake?—No, I did not.

In your judgment should it extend to that?—I think it should extend to oil-cake or other food of that description bought and consumed upon the land; but that is not practised to a great extent with us.

It would be advantageous, would not it, if it were practised?—It would, but as we have the means of

getting manure from the large towns; being a manufacturing district, that plan has never been so much adopted with us.

Would the valuation necessarily in your judgment take place before the termination of the tenancy?—It would.

Then it must be an estimate of the consumption up to the conclusion of the tenancy, and not the actual consumption?—It would be only a few weeks before the expiration of the tenancy.

It would be an estimate, and not what was actually consumed?—It would be a pretty correct estimate; probably the consumption would not be going on to the very end of the tenancy.

Ordinarily speaking, if a sale takes place of stock and so forth, they are kept upon the farm until within two or three days of the tenancy, is not that so?—They ought to be kept upon the place, of course, until the expiration of the tenancy; but the tenants frequently with us make an attempt at selling their stock and produce long before the expiration of the tenancy.

If they are going into another farm is that the case?—Not when they are going to another farm, but when they are going to give up farming.

When they are going to quit business altogether?—Yes.

Then do they give up the profit of holding the land for the last six months because they are going to give up business altogether?—There is no profit in holding the land in winter after the crops are got.

Do you not grow turnips?—The turnips are frequently stored with us; they are got up in November and December and stored.

What do you do with them?—They are given to the cattle.

And you keep cattle up to Candlemas or Lady-day to eat them?—Up to the 1st of May.

If you give the turnips to the cows do you not milk them?—Yes.

That is a profit?—Yes, of course.

Therefore there would be a profit made in all those ways?—That profit would not be equal to the advantage of selling off the produce in January or February to the tenant, because they generally manage that the cows shall not give very much milk in the winter.

They let them off?—The principal milking season is the season of summer and autumn.

And of cheese?—Yes.

Is there any custom in any part of the country by which threshing machines are dealt with?—There is no custom, that I know of.

Are the tenants, if they put up a threshing machine, allowed to remove it?—I think they would be allowed to remove it. I think it would not be objected to.

It would not be considered as attached to the freehold?—I think it could not be removed legally if the landlord would not allow of it, but I think few landlords would object to a threshing machine being removed.

In your judgment, what has been the custom?—I have never known a threshing machine refused to be removed. I know of a steam engine being put down by a tenant, who died suddenly; the estate was one that I was connected with, and it was quite optional with the landlord whether he would allow for that steam engine or not.

The law would have enabled him to claim it without paying for it?—Yes.

In your opinion ought that to be guarded against?

—I think the tenant should either have the value of the steam engine, or at least the privilege of removing it, or selling it.

In trade, manufacturers have the power of removing such things?—Yes, they have.

And it would be just to place the agricultural tenant in the same position with regard to fixtures of that description that they might want to use in their trade?—I think so.

Mr. NEWDEGATE.] The practice of growing potatoes prevails extensively in Lancashire and Cheshire?—Yes.

The value of that crop is very great, is it not?—It is a valuable crop, but it is an expensive one.

What kind of manures are generally used for the production of that crop?—Horse and cow manure.

Do you use any sea-weed?—No.

Is that a crop that would compensate a tenant for any expense of artificial manure in one year?—I think the tenant is frequently not compensated by the potato crop itself, but by the succeeding crop, which is generally wheat.

Is he compensated in two years?—Yes, frequently; but the manure may not be exhausted for three or four years.

Mr. COLVILLE.] You have stated that it is the custom in Cheshire to put on a ton of boiled bones per statute acre, which costs £4 per ton?—Yes, £4.

And you put on a ton of unboiled bones per statute acre?—Yes.

Will you say how much extra stock an acre of land in that way manured will keep?—I stated before, half as many more, or one-third.

In short then, three acres keeping two cows under ordinary circumstances, would keep four and a-half cows per acre?—Yes, one-half as many more; if three were kept before, four and a half would be kept afterwards.

How long do you think that the tenant ought to enjoy that land he has manured with bones in that manner to be remunerated for that outlay?—I think he would be remunerated in four or five years.

Depastured?—Yes, depastured, but he ought to have a little longer allowance.

Why should he have had an allowance for a longer period than that?—As some little encouragement for the improvement; from seven to ten years, I should think.

How much extra hay will land produce that has been manured with a ton of boiled bones?—At least double what it produced before.

How long ought the tenant to enjoy that land before he will have reaped the full benefit of it?—I think if he mows it four times after manuring, his claim to compensation would then be exhausted.

In short, in either of those cases if a tenant was ejected, if he had a fourth for each year allowed him, that would be remuneration?—For mowing land.

Or for pasture land?—It should be extended for pasturage to double that period, at least.

Do you use bones on the arable land?—Upon the sandy loams and peat, for turnips we use them to a great extent; we do not find them to answer upon the sandy loams in grass so well.

How long is it before they become exhausted on arable land?—I think in three or four years, or probably more.

As to unboiled bones, what is the price per ton of unboiled bones?—It varies from £6 to £8, according to the degree of fineness to which they are reduced.

What extra stock will land keep that has been manured with unboiled bones?—Much the same as the other; but the unboiled bones are considered much more durable, and no doubt they are so.

Do they come into operation as soon as the boiled bones?—I have already stated they do not.

Do you apply sulphuric acid to make them come into operation sooner?—Last year for turnips I did try it, but not for grass land.

How many years do you think that a tenant ought to have a tenant-right for in land on which unboiled bones had been put; land that has been depastured?—I think eight or ten years for that.

And in case of having mowed that land, how long ought he to have the tenant-right?—A year or two longer than for boiled bones.

Six years, you would say?—Yes, or six mowings.

Mr. HENLEY.] What value do you consider a cow's produce to be in Cheshire upon a cheese farm?—We average our Cheshire cows about 3 cwt. of cheese per cow.

How much money will that be?—Nine pounds, besides the refuse which goes to feeding the pigs (the whey from the cheese making), and a little butter.

How many acres do you stock by a cow in your pasturage?—About two statute acres on the average for summer keep.

To a cow?—Yes; but taking the farm through —

But keeping to the pasture, it is two statute acres to a cow, you say; that is, of course, unboned land; your calculation gives two acres of unboned land to a cow, and the produce of the cow is £9?—Yes; probably you might put it from £11 to £14 altogether, for the year.

It would take six acres to keep three cows in the pasture grounds?—Yes.

And if it were boned, four acres would keep the three cows; is that so?—Yes.

That would be your calculation?—Yes, about that; it is difficult to give exact proportions.

Then in point of fact the £27 which is the produce of the three cows, would have to be thrown over four acres instead of over six?—Yes.

Mr. T. EGBERTON.] You were asked as to the valuation just now; have you had some experience as inspector of improvements in those farms?—I have.

Have you ever found any difficulty in valuing the improvements on the different farms which in the course of your experience you have seen?—My inspection has been for prizes offered by agricultural societies, and of course that farmer who had made the most improvements got the prize.

You have had opportunities of seeing what the improvements which have taken place upon those farms have been, and do you not take into your consideration, as one great element, what the farm was before?—Yes.

Have you found any difficulty in valuing those improvements?—No, but I have no occasion to value those improvements, as they are not allowed for, that I know of.

The question merely means as an inspector?—As an inspector of farms for agricultural societies, we do not take that ingredient into account, not the ingredient value; we consider what the tenant may have expended in the improvements; we do not go into those details as to what the particular cost of a single article may be.

Sir C. LEMON.] You said just now, that after the application of a certain manure, that the crop was doubled; you apply that only to the first year after the manuring; is not that so?—That would apply to bone manure, and to mowing land.

And that the crop in the succeeding year would be doubled?—Yes, it would be doubled probably in the first and second years following.

Would it be equally good on the second year as the first?—Yes, because the full virtue is not obtained in the first year.

How would it be on the third year?—It would be gradually diminishing in mowing land.

In about what proportion would it be reduced, to one-fourth or half as good instead of double?—I should think two-thirds would be exhausted.

Then of course in any estimate of any claim that a tenant might make for manure expended four or five years before that, or even beyond that time, you must constantly be going on by a decreasing scale?—Yes, you must have a graduated scale.

CHAIRMAN.] You were understood to say, that if grass land is boned and fed afterwards, and not mown, it is a permanent improvement to the land?—It is next to a permanent improvement upon the pasture land, so long as that land remains in pasture.

Mr. COLVILLE.] What effect has it on the cheese; does it improve the quality?—It improves the herbage, and thus improves the richness of the milk.

Do you find the cheese stands as well on land that has been boned?—No, it is tender.

It rises?—It is more difficult to manage altogether; it is much richer.

Mr. T. EGERTON.] Is not there considerable difficulty experienced by farmers coming from poor cold lands on to rich land in the first year in making the change?—There is a difficulty frequently; in probably arises in part from his having no settled rule or principle upon which he manufactures his cheese.

Mr. HENLEY.] The account about the increase of stock you have given will stand thus: the unboned land three cows upon six acres would be £4 10s. an acre, and on the boned land it would be £6 15s. per acre?—I dare say it would be so.

And that is the return for the outlay of £5; £2 15s. per acre gained?—The return is very great indeed; I have not reduced it to figures in the way it is now stated; but I have no doubt it is very great.

The proportions you have given of one-half increase; do you think that that is so?—I think it is so in many instances; there may be some cases where it is not so much.

It is so beneficial a result, that it is desirable to have it as clearly from you as possible, according to your judgment?—I have heard of some farms where the cattle have been doubled by that application.

Can you really speak to one-half increase?—Yes, it may be taken at a half to one-third; of course it would depend upon the quantity of land in grass, as the number of cows on any particular farm.

But the question had reference to per acre?—Yes; but the stock might be doubled from other causes, such as more land being in grass; it might not be always doubled in the same quantity of land, but there might be an increase of stock by bringing in more land; I have known instances of farmers keeping double the stock they had when they entered upon the farm.

Of course the more acres they had, the greater would be the amount of stock; the increase per acre, in your judgment, might be safely taken at half?—From half to one-third.

Mr. COLVILLE.] Do bones do as well on drained as undrained land?—No, I would not apply them to undrained land, but they are frequently so applied.

Do you use any other artificial manure to improve the herbage and increase the milk; have you tried guano on grass?—That has been applied to a limited extent upon grass land.

With what effect?—It has been beneficial, no doubt. Do you think that that lasts more than one year?—Not much more than one or two years; I should not like to give an allowance for more than one year.

CHAIRMAN.] What is the character of this grass land in Cheshire, on which bones have so powerful an effect; what is the character of the soil?—The soils upon which it answers best are the cold clay soils that have been

drained; and all stiff clay loams incumbent upon clay or marl.

Is it a red clay?—Chiefly red clay.

Do you know any instance of its answering equally well out of Cheshire?—No.

Do you know cases of its being tried and having failed out of Cheshire?—I have heard of such cases.

Of cases in which it has failed or succeeded?—I have heard of cases in which it has failed.

Have you known no case in which it has succeeded out of Cheshire?—Yes; in Lancashire I think it has succeeded.

Is that the same red clay, in Lancashire, on which it answers?—No; the clay is not so red in Lancashire; it is in the coal formation, and the clay is of a darker hue.

Though it is a different kind of clay in Lancashire, the boning of good land has been found to answer there also? Yes, it has.

Mr. T. EGERTON.] It is essential to the success of the boning that the tenant should have his land well drained first?—Yes; I have seen it done on undrained land, and it does not answer so well; it is a waste of capital.

CHAIRMAN.] It does not answer on the light land?—It does answer; but not so certainly upon the sandy land, except for the turnip crop.

Do you know whether bones do more good upon land that has been a long time in the habit of having cows that have been milked, upon it; does it do more good on that sort of land than on land that has been grazed?—I think it makes no difference; we find it to answer well on clover and seeds.

Mr. T. EGERTON.] It has the effect of bringing up the white clover?—Yes, and trefoil, and all the best grasses.

April 8th, 1848.

MEMBERS PRESENT.

Mr. Bouverie.	|	Mr. Moody.
Mr. Burroughes.	|	Mr. Newdegate.
Mr. Colville.	|	Mr. Pusey.
Mr. Henley.	|	Mr. Stafford.
Sir Charles Lemon.	|	Sir John Trollope.

PHILIP PUSEY, ESQ., IN THE CHAIR.

The evidence of Mr. HENRY KERSEY.

CHAIRMAN.] You are a land agent for Mr. Tollenmache, Member for Cheshire, on his property in Suffolk?—Yes.

Is that an extensive property?—It is between 7,000 and 8,000 acres.

About how many farming tenants are there in the property?—Between 40 and 50.

Has Mr. Tollenmache introduced the system of giving to his tenants tenant-right for improvements?—Since 1840.

Does he compensate for draining, chalking, and claying?—And for all other unexhausted improvements.

Are the farms generally held upon lease or by yearly agreement?—Part of them on lease and part by yearly agreement; they can all have leases if they please.

Then many of them do not wish for leases?—Many prefer holding from year to year.

To begin with drainage, what compensation do you give for drainage?—That depends upon the first cost, in a measure. I had better state the various distances and cost in our mode of doing draining. The first thing is, that there are various depths done; the first mode is about two feet deep and 18 feet asunder; that costs about £3 18s. 6d. an acre.

Mr. BOUVERIE.] What tiles do you drain with?—Pipe tiles; the round tiles that shut into each other. The next is two feet and a half deep, and the same distance, that is, 18 feet asunder; that would be £4 15s. 6d.

Mr. HENLEY.] That makes another draught in the work?—Yes, it does.

What is the respective price paid per pole for labour?—It depends entirely upon the soil.

Upon those calculations of £3 18s. 6d. and £4 15s. 6d., what is the price paid for labour?—On £3 18s. 6d. it is £1 10s. 6d.

And what for the other?—On £4 15s. 6d. it is £2 7s. 6d.

CHAIRMAN.] Will you proceed?—The next is three feet and a half deep, and 27 feet apart, that is £3 8s. per acre, and the amount of labour upon that is £1 16s. per acre. The next is four feet deep and 36 feet apart, that is £3 11s.; this is including the tiles, and there would be £2 7s. labour upon that, and that will vary a few shillings per acre either way, according to the soil you are on.

Will you state to the Committee, supposing a tenant to leave his farm shortly after executing such drainage works, on what principle you would give him compensation?—It would be according to the period those drains had been done, and to the mode in which they were done; that is a matter that is allowed to be referred to arbitration; that is, one party be chosen by the landlord and the other by the tenant; and if they cannot agree after a consultation, the decision of a third party is to be final, with regard to the amount to be given.

Take the average expenditure of drainage, and supposing a tenant to leave within three years after having drained a field, what compensation should you give him?—He would receive two-thirds of the amount.

Do you require the tenants to come to you for your consent in writing before they execute those drains?—The tenants only apply where draining tiles are used.

You leave it to their discretion to drain their own land?—Yes, we leave it to their discretion to drain.

You have a good deal of cold clay land, on which I believe chalk is found beneficial as a permanent improvement?—Yes, on what we term the hollow bottom lands.

Do you put the chalk on the hollow bottom?—Yes, our clay lands do not want it, they are full of chalk.

Will you describe that process to the Committee; how many loads of chalk do you put to an acre?—Ten chaldrons of 36 bushels.

What is the expense of chalking?—About £5 an acre.

That is including hauling?—Including hauling, and every expense upon the land.

How many years do you allow for the term of compensation for chalking the land?—It depends in some measure upon the soil; in some soils it will get to work in the land a year or two sooner than it will on other soils.

Do you leave it to an arbitrator?—It must be left to an arbitrator to judge whether it is a full compensation or not.

Taking the average quality of land?—It would generally do good after the second or third year.

The question is not when it begins to do good, but in how many years you consider it to remunerate the tenant?—It may be beneficial for five or six years.

You spread it over five or six years after it has begun to act beneficially?—Yes, over five or six years after it has begun to act beneficially before it is done away with entirely.

Have you not another mode of improving light lands by claying them?—We seldom clay light land with us.

Do you not clay at all?—Not the light land; we do the hollow bottom lands.

How many loads of clay do you apply to those hollow bottom lands?—From 50 to 100; the hollow bottom land is with very deep staple and porous subsoil.

Sir J. TROLLOPE.] What is the nature of that subsoil?—Generally tending to the brick earth.

Not porous?—Yes, it is at the bottom of it.

CHAIRMAN.] What is the clear expense of claying the land?—About 6d. a load.

In what way do you lay the clay on the land?—It is generally done by the yard, by the barrow, or by the cart; the expense is just the same, let it be which way it will.

How many years do you allow for his improvement to run with the claims for compensation?—It seldom runs over three or four years.

Do you require the tenants-at-will to have your previous consent when they wish to clay or chalk their land?—No, it is quite optional.

Do those modes of improvement act with decided benefit on the land?—Decidedly so.

Does the application of clay and chalk improve the quality of the produce?—It very much increases the quality of the produce.

And the certainty of the yield?—And the certainty of the yield as well.

Do you include compensation for buildings amongst your claims for improvements?—It is done in this way: the tenants are sometimes in the habit of erecting feeding-sheds for their cattle, and Mr. Tollemache generally finds them the material, and they pay the whole amount of the labour for the erection of those buildings. Should anything occur when they leave the farm, if any change takes place, the parties are allowed the proportion of the labour of those buildings that they have done, within four years after they have done those buildings.

Do you consider the time of remuneration four years?—No, we do not exactly consider it for that time, but it is very likely that the thing has been erected for a longer period.

Then if a farmer has put up a range of buildings in a substantial way six years previously, and he leaves the farm, has he any title to compensation?—Yes, if they are put up substantially, a proportionate value, but not the full amount of what it cost.

Then supposing the farmer to have put up a temporary building, and that he leaves the farm six years afterwards, what would his claim be?—He would be allowed half the amount of the labour that he has paid, if the building was worth it.

Have Mr. Tollemache's tenants put up many buildings in consequence of this?—Yes, a great many on the estate.

You say that they are principally cattle sheds?—Yes, they are principally cattle sheds; by the other part of the agreement they must attend to the repairs.

Do you consider it essential to the improved modes of agriculture that tenants should have good buildings on their farms?—Yes, and to improve the quality of the manure as well.

Because it enables them to keep beasts feeding on artificial food?—Yes, to keep them in the yard.

In what way do you compensate the tenants for the purchase of artificial food for their cattle?—If the tenant leaves his farm, he is paid for all the manure left on the farm according to the quality and quantity that is made.

Was that the case originally on Mr. Tollemache's farm?—Not originally.

Did the dung then belong to the land, that which was left on the premises?—It used to be left.

What was the nature of that dung?—Of a very ordinary quality.

It would be very little more than straw and water?—Very little more.

What is the quality of the dung now left on the farm?—It is to the tenants' interest to make it as good as it can be made.

What is the difference in the value per load of sky-made manure and the manure made with oil-cake?—I do not know that I can put a comparison, but there is as much as 1s. 6d. to 5s. difference.

The straw and water manure you would put at 1s. 6d. and the cake manure at 5s. a load?—Yes.

Is artificial manure much used by you?—Only rape-cake.

You do not find bones act?—They do not act at all with us; we have tried a very great many experiments with them.

Do they not answer on any part of your arable land?—Neither for turnips or anything else, and we have drilled a great deal for turnips, and sown it for pasture land, but they do not operate at all.

Have you tried a heavy dressing of bones upon the Cheshire system upon any of your grass land?—Yes, in the park I have tried a very heavy dressing, as much as 70 bushels an acre.

Was that in consequence of Mr. Tollemache's acquaintance with the Cheshire practice?—Yes, that was in consequence of Mr. Tollemache's acquaintance with the Cheshire mode of dressing the land with bone, and he had a great mind to try the experiment.

And it did not answer at all?—You could not see where it was done.

You have stated that you do not require the landlord's previous consent for those improvements; have you found any inconvenience arise from any extravagant outlay on the part of the tenants in the improvement of their farms?—No, not at all, I should think; I would rather see them do a little more.

Though they have been left to their own discretion you find that they have exercised prudent judgment upon the subject?—Yes, very much so.

In fact too prudent in your opinion; you would rather that they should lay out a little more money?—In some instances it would answer their purpose better, I am certain.

You say that some of your farms are held upon lease; have you found this compensation for improvements necessary upon land so held, as well as upon farms held from year to year?—Yes; it applies equally to both of them.

What is the length of your lease?—Twelve years.

Why do you consider this compensation desirable when land is held upon lease?—In this point of view I should consider it: if a person had not a compensation under an agreement, it would be but little use his spending an extra quantity of property upon that estate in the way of improvements, because at the expiration of the time he would be obliged to go out and leave it; he would do what he did in the first part of his holding, to take the full benefit of it.

And throw it back in the landlord's hands out of condition?—Exactly so. As regards drainage, they would be sure to do it.

Although in some instances you wish now that the tenants would be more liberal in their outlay, have you found on the whole the system of compensation answers, by improving the condition of Mr. Tollemache's property?—In every respect that has answered.

Mr. HENLEY.] How long have you managed his property?—Since 1840. Mr. Tollemache came to the estate then; I was agent before that.

Had you any knowledge of the estate before?—Yes. For how long?—I have lived on it my whole life.

What was the term of holding before 1840?—There were no compensations given.

What were the terms of holding?—The lands were to be farmed on the four-shift course of husbandry, according to the regular system that is now adopted; and there was nothing to be paid for the unexhausted improvements, nor nothing said about the quantity of the manure that was to be left on the farm.

Was it a lease or yearly holding?—Some leases and some yearly holdings, the same as now.

The dung, you stated, belonged to the estate then?—Yes; at first it was left free.

Is that the general custom in Suffolk?—Not so much as it was; it used to be more than it is now; they are doing away with it in a great measure.

A change has taken place in that respect?—Yes; a change has taken place in that respect, within the last 30 years.

What is the custom in the part of Suffolk you know of, between outgoing and incoming tenants; what is paid?—They first of all have the hay and clover grown in the last year.

What are the ordinary periods of taking and quitting, from Lady-day or Michaelmas?—Michaelmas. All the hay and clover mown in the last year, and all the manure on the farm.

The question does not refer to the estate with which you are connected; but where there are no agreements; what is the common custom of the part of Suffolk you are speaking of, where there is no such agreement such as you have stated to the Committee?—I think it would be something like this: you may say a person would mow all the hay and clover on the farm, that would be the first thing.

The question is not what they would do, but what would be paid from the outgoing tenant to the incoming tenant; what is the custom of the country where no agreement exists?—They would take the hay and clover.

At a standing price?—Part of it; they would not be compelled to take the whole.

What, according to the custom of the country, would the incoming tenant be expected to take at the standing price?—The hay and clover left on the farm, the regular course what was mown; for instance, if he had 20 acres that came in the course to mow according to the usual course of the country, and he were to mow 40, he could not compel the incoming tenant nor the landlord to take more than the regular quantity.

What would he do with the rest?—That would be a question for another consideration.

Have you known any such cases to have occurred, and if so, what has been done?—I have known cases where they have been obliged to go out and leave, and could not get anything for it; and there are other cases where they have carried it off, and sold it, to the ruin of the farm.

Do you know whether there has been any result, and if any, what upon those transactions?—Yes; in some cases it depends entirely upon circumstances; with regard to that, in some cases, it has been where the tenant has been obliged to leave it, or they could get little or nothing allowed for it, and in other cases they would sell it off and leave the farm half bare.

Where the party has carried it off, is he subject by the custom of the country to a penalty or inconvenience for doing so?—No.

There is nothing to prevent it?—No, there is nothing to prevent his carrying off the overplus.

Mr. BURROUGHS.] The question is, what is the cus-

tem of the country?—That is half, supposing a man had 40 acres.

Take a farm of 400 acres, and he has 100 acres of clover and grass, what proportion would he be at liberty to take?—If it was all in grass, he would be obliged to leave the 100 acres.

But in the four-course system it is 100 acres in clover and grass seeds, and you say the incoming tenant is not compelled to take the whole 100 acres; he is not at liberty to mow the 100 acres?—No, he would mow half.

Then by the custom of the country, what becomes of the other half?—I do not know, exactly; we have so seldom a case of that kind come before us.

You mentioned just now two cases, one in which a man had sold it all, and taken the money and gone away, and another where he had left it, and got nothing?—Yes, they were extreme cases.

What is the custom of the country in such cases?—The custom of the country is, that he must leave it, and take a small price for it, if he does not sell before Michaelmas.

Then the man going away and putting the money into his pocket did that which was contrary to the custom of the country?—Yes.

That was a wrong transaction?—Yes.

Mr. HENLEY.] What is done about turnips and fallows; what is the custom of the country about that?—The ploughing and the fallows.

Anything else?—The rent.

Any rates?—No, not rates.

How much rent?—The average rent.

Half-a-year, or what period?—The whole year's rent upon the fallows.

No proportion of taxes?—No proportion of taxes whatever.

Is anything else valued out?—No.

Mr. BURROUGHS.] Who sows the turnips upon the fallows; the incoming or outgoing tenant?—The incoming tenant.

Ploughing for the tillage?—Ploughing for the tillage. And when has the incoming tenant a right to enter according to the custom of the country?—The incoming tenant, according to the custom of the country has no right to enter only upon permission till the 11th of October.

What becomes of the turnips?—The outgoing tenants would sow the turnips.

Then he is not paid for the root crop, but he is paid for the tillage?—He is paid for the tillage.

Mr. HENLEY.] For the rent of the land?—Yes.

Who sows the wheat; is the wheat sown before the 11th of October?—The incoming tenant.

He is not permitted to enter before the 11th of October?—No.

Who sows the clover seeds?—The outgoing tenant.

What is he allowed?—He is allowed for the seed and labour.

Nothing else?—No.

Going back to the estate you have spoken of, with regard to the agreements you have entered into, you have said that the amount to be paid is to be paid by valuation?—Yes.

Is there any direction or agreement between the landlord and the tenant to the valuer upon what principle this amount is to be ascertained; is there any agreement as to the periods or principles upon which the amount of the valuation is to be ascertained?—It is perfectly understood according to the market price of the commodity at the time of the tenant's leaving.

Is there any agreement as to the number of years which drainage, for instance, is to be calculated upon?—Not at all, there is no agreement as to that.

Then the principle as well as the amount of the valuation is left to the arbitrator?—Yes.

Is there any agreement as to the number of years that claying or chalking is to be paid for?—That is left entirely to the arbitrator; those are things tested by the experience of the arbitrator and the condition of the land at the time.

Then both the principle and the amount is left to the arbitrator?—Yes, exactly so.

Is it expected that they are to make their value upon the amount of money expended or the amount of benefit to the incoming tenant?—They have to make their value upon the condition that the land is in at the time without any relative proportion to the first general outlay at all.

If they are to make their valuation without reference to the outlay, how are they to ascertain the amount; how is it to be paid?—If a field is in a certain state of drainage, I should think that a farm that has been drained so many feet deep entitles the tenant to so much compensation.

That is the amount of outlay?—That is the amount of outlay, and first of all that has been done a certain period of years; then the question is as to the condition that the land is in after the lapse of a period of years, because one field that has been done at the same price as another may not be worth half the money that the other is, on account of the difference of the soil that it is done in, and the manner of doing it.

Supposing an outlay of £3 18s. 6d., and suppose after seven years the draining to be as perfect and as good as the first day it was done, would the outgoing tenant be entitled to receive all his money?—It would be left to the judgment of those parties who value it. I cannot say it would or would not; it would be entirely left to them; they must be judges whether the transaction was beneficial or not; if the drainage were as perfect as when it was first done there would be no reason why he should not.

Then, according to your judgment, a tenant having outlayed that money, and having had seven years' benefit of it, if the drainage was perfect at the end you say he would be entitled to receive the whole of the money?—I say no, because it is barely possible for a field to be in so perfect a state after that time.

The question is, supposing it were as perfect as when first done, would he be entitled to receive the whole of his money?—No, I should say not.

What proportion would he be entitled to receive?—That proportion would be left to the judgment of the parties.

Then the whole thing would be left to the judgment of the parties?—Of course it would; it could not be settled any other way in fairness and justice to any one.

And have you no opinion yourself whether that value ought to be ascertained with reference to the outlay, or wholly with reference to the benefit of the incoming tenant?—Yes, I have an opinion, it is this: I should calculate that it would have a beneficial effect, according to the real state the land was in.

That would be wholly with reference to the benefit to the incoming tenant?—No, I think it would not.

What is the price paid per pole for three feet drains to labourers ordinarily, about the average price per pole?—About four-pence.

Do you do 16½ feet or 18 feet?—16½ feet.

The short pole?—Yes.

Can you state that in your judgment there is not so much money expended upon an estate with those agreements as there ought to be?—Not so much as I should wish to see.

In your judgment, does that arise from the occu-

piers of land not having abundant capital, or from not choosing to lay it out?—I think it is perhaps from both reasons.

Is the land generally in Suffolk well cultivated?—Very well cultivated.

Are agreements such as you have stated common through Suffolk?—There are the same, or some similar.

Are there any other?—No.

The county of Suffolk is generally pretty well cultivated?—Yes, I think so.

Sir C. LEMON.] You mentioned that Mr. Tollemache first began that system in 1840?—Yes.

At the time he first adopted the system of compensation was there any agreement as to increase of rent?—Not at all.

This compensation was not given in consideration of any increase of rent?—No, I am not aware that it was.

Are you aware at all, from the persons residing in the neighbourhood of that estate of Mr. Tollemache's, whether, generally speaking, there would be an inclination to give on the part of the tenants an increase of rent in return for the compensation?—In part. I think I can explain the way in which this draining was done: the fact is this, when the draining is done with tiles, the tenant always paid one-third of the amount, or about four per cent. of the outlay as an increase.

As an increase of rent?—Yes.

Then there has been an increase of rent as a condition of money laid out?—Yes.

And that, you say, was about four per cent.?—Yes.

Do you imagine, ordinarily speaking, that amongst occupiers in general there would be a disposition to submit to an increase of rent to the amount of five per cent. in consideration of the prospect of compensation?—I have been where I have had farms to re-let, and I have been enabled, where this system has been carried out, to get an increase of rent. I have found no difficulty, and they have been perfectly satisfied with it.

Can you assign any general amount of that increase?—No, I cannot.

Has that been in return for a given prospect of compensation?—It has been begun but a short period; but the thing is increasing in value, and will increase as it goes on.

How does that value come into the hands of the landlord; by agreement in the first instance, or by the addition to the rent in proportion to the sum actually laid out?—It would be an addition to the rent, in proportion to the sum laid out by the landlord, of course, ultimately.

Mr HENLEY.] You stated that a good many additional buildings had been put up on this estate in consequence of this agreement?—Yes, I did.

What was the case with regard to the buildings before 1840?—They were in a very dilapidated state, some of them.

Who used to do them?—That was under particular circumstances; the estate belonged to a lady. She had only a life interest in the estate, and they only just kept the buildings in tenantable repair.

In consequence of the owner of the estate having only a life interest in it, nothing could be done?—They did what was right.

Mr. BOUVERIE.] Has Mr. Tollemache the fee or power of dealing with the estate as if he had?—Part of it.

Mr. BURROUGHES.] Have you cut down a great deal of timber?—Yes.

On the arable land as well?—None in the park at all.

All upon the arable land?—Yes; all upon the arable land and wood.

That must increase the value of it very much to let?—It will do after a time.

Is it not the practice in that part of Suffolk for the landlord to drain and charge a per-centage?—The tenant does the labour. There have been some instances in which deep draining has been done by way of experiment; that has been done in one field on a farm.

The landlord has done that?—Yes, and has paid the expense, to see whether it would answer.

And then he has charged a per-centage?—Yes, and charged the tenant a per-centage on it. There are two or three cases where it has been done.

Is not it likely to answer as well as the other plan?—I think not.

Not so well as letting the tenant do it, and then paying him a compensation at the end of the term?—If the tenant leaves there is a compensation; there is no compensation without he leaves.

Do all tenants understand the nature of drainage?—I think the Suffolk ones do.

Would a man coming from Woodbridge, coming from farming light land, understand draining?—Yes; there is a very little doubt of it.

You would trust him?—Yes; that is not far distant, only for ten miles.

Take the case of a man coming from Newmarket?—Of course we should prefer a heavy-land farmer to take it, if the farm was to let.

It is your opinion that the system of compensation for what is done by the tenant is superior to the practice of the landlord paying for the drainage and charging a per-centage upon it?—It is more beneficial to the landlord for the tenant to do it.

That is your opinion?—That is my opinion.

CHAIRMAN.] Is it not often more convenient to the landlord to allow his tenant to pay for the drainage of the land?—It would cause an immense outlay.

The question is, whether it is not often more convenient to landlords, who are not very rich, to allow the tenants to drain the land under compensation, than to undertake it at a heavy outlay themselves?—Yes.

Mr. BURROUGHES.] Does not it as frequently happen that the tenant is not very rich as that the landlord is not very rich?—It happens very frequently, but the person who is on the farm himself, I would say, he can use his hands, if he has not the means in his pocket, in a great measure. I am speaking now of small occupations.

Mr. HENLEY.] Is the return to the tenant greater than the per-centage he would be required to be paid by the landlord; in your judgment is the profit or return upon the outlay of the capital to the tenant greater than he would be required to pay to the landlord, provided the landlord expended the money?—The question means, provided the landlord drained the whole farm, and the tenant had no outlay to make at all?

If the landlord laid out £100, and charged a per-centage of five per cent. upon the tenant, would there be profit beyond the five per cent. to the tenant; or, to put it in another way, if the tenant laid out the £100, would he make more than five per cent. upon the outlay?—I would rather give my landlord the five per cent. to do it.

In your opinion is the profit greater than the five per cent. in the outlay for draining?—It depends entirely upon the soil; it is a question I am incompetent to answer; it depends so much upon the soil, that no person could give a direct answer to the question.

Upon the estate that you are cognizant of and speaking of, would it be greater or less on that estate?—It would vary with the soils; in some fields it would be greater, in others it would not be half so much: it would be impossible to draw a line.

You are unable to give an answer to that question?—I am unable to give an answer, because of the variety of soils there is to contend with.

Mr. BURROUGHS.] Would tenants be induced to drain to any extent unless they had the expectation of making more than five per cent. upon their outlay?—I do not think they would.

Mr. COLVILLE.] Have you had any farms to let since these operations came into force?—Yes.

Have you found that the incoming tenant has had any objection to pay for the improvements?—None at all.

What amount do they come to, do you know?—I do not know at all; I cannot say.

You do not happen to know what amount the tenant right has been?—No, I do not; it is a perfectly understood thing, if I let a tenant a farm, he knows he has the improvement to pay for, and it is stated to him.

And if he has sufficient capital it is, of course, no inconvenience to him?—The fact is that, as near as we can judge, we do not let a farm to a person who has not capital enough to carry it on.

You say if a tenant makes improvements in draining you do not require any notice?—No; only when they apply for draining tiles.

Do the tenants give you any notice?—No.

How are the umpires to ascertain, after the lapse of years, the depth of drainage?—I keep an account of it.

Then they do give you notice?—I am always upon the estate, and I know the number of fields drained on each farm.

CHAIRMAN.] Then they do not require your previous consent, but you expect them to give in the account of their outlay after the improvements are made?—Yes.

Mr. COLVILLE.] In the event of the referees not agreeing, they are to appoint an umpire?—Yes, and his decision will be final.

Supposing they cannot agree upon this umpire, to whom is that appointment referred?—It is imperative upon them.

How do you make it imperative upon them?—It is in the agreement that the decision of a third man shall be chosen by those two.

Is not it often the case that when things are left to referees they decline to appoint an umpire?—They are compelled to appoint a third man.

In short, if they do not appoint an umpire they do not derive the advantages of their improvements?—No.

Have you got a copy of the agreement under which the tenants farm?—I have.

Mr. BOUVERIE.] Is that stipulation introduced into the several clauses in the agreement with the tenant?—Yes, exactly so, from year to year.

Mr. HENLEY.] What is the size of the farms that have changed tenancy under this agreement?—One hundred and fifty acres.

Do you chance to recollect the gross amount of the coming-in and the valuation?—As near as I can judge, between 40s. and 50s. an acre, the whole of the valuation.

Did that include drainage?—That included some drainage.

Was there much?—I think six or seven acres.

Did that include chalking?—It included some chalking; about ten or a dozen acres.

Did that include any claying or marling?—I think none of that was claying or marling.

Did that include the manure and tillages?—Yes, that included the manure and tillages, the hay and so on.

Mr. BURROUGHS.] Did it include the tenant's covenant as well?—Yes.

Mr. HENLEY.] The 50s. an acre covered it all?—Yes, and it was a high valuation too.

You say that included the hay?—Yes.

Do you recollect the number of acres of hay?—I do not; I cannot say exactly; I think somewhere about ten to a dozen; I cannot bear it in mind exactly.

Mr. MOODY.] The custom is very indefinite in this part to which you are alluding. Supposing, for instance, the case as to which you were asked just now of a person carrying off one-half of the hay, supposing him to mow the whole 100 acres, how, under an action for damages for mismanagement, would the landlord recover; is the custom so imperative as that, if it were improperly carried off?—If he had anything to recover upon he would recover it.

Supposing the tenant not to be insolvent?—Yes.

Upon drainage the calculation is from the benefit derived from it?—Yes, the benefit still to be derived from it; so that it rests very much upon the judgment of the valuer and the condition which the land is in.

Mr. HENLEY.] Do you make any offset from the valuation if the farm is foul?—Yes, certainly.

Is that in your agreement?—Yes, and it is a breach of covenant, too, in case the farm is not farmed properly.

The Evidence of Mr. WILLIAM SHAW.

CHAIRMAN.] You are a practical farmer residing near Northampton?—Yes.

As a member of the council of the Royal Agricultural Society, you have had an opportunity of observing farming in England pretty generally?—Yes, I have.

What is the extent of your farm?—The farm I hold is 320 acres now; I have had two farms under my present landlord; I took my father's farm, who occupied that farm 52 years, under my present landlord.

Mr. COLVILLE.] Is it a grass farm or arable?—Two-thirds of it are arable and one-third grass, or nearly so.

CHAIRMAN.] Upon what tenure do you hold your farm?—Simply from year to year.

What is the general holding of farms in your neighbourhood?—Almost universally from year to year; in Northamptonshire there is scarcely a lease.

Have you improved the land in your occupation by drainage or otherwise?—I spend £700 a year in labour and £300 a year in oil-cake on 300 acres of land; I think, therefore, I must have done so.

Does the custom of your country give you any compensation for those improvements?—None whatever; it merely pays for acts of husbandry and seed and labour.

Have you that confidence in your landlord that induces you to make those improvements without compensation?—That is the only thing that induces me to do it.

Are you to be understood to say that there are no compensations for any kind of improvements in Northamptonshire?—None whatever.

If there were compensation for improvements, do you think farmers would be induced to lay out their capital on their farms?—Yes; although we have many farmers who have held their land for a great number of years under the aristocracy of Northamptonshire (whose pride, in many cases, is never to change their tenantry), and yet have not improved. These men, however, only enjoy security of possession. I quite think, if security were given for unexhausted capital employed, the improvement of agriculture would go on much faster.

You think there is room for improvement in Northamptonshire?—I do not know any county where there is greater room for improvement.

Of what nature should you say are the improvements you contemplate?—Draining, and the better making

of manure; for the generality of farmers in Northamptonshire keep their plough land in what they call condition, by robbing the grass portion.

Does the manure belong to the farm when the tenant quits it?—Generally to the landlord.

Do you think that if compensation were given to the outgoing tenant for an improved quality of manure, by the purchase of artificial food, that that would tend to increase the productiveness of Northamptonshire?—I have no doubt of it.

Do you think that tenant-right is equally applicable to yearly holdings and to leases?—Yes, equally.

Why do you think that leases are imperfect without a tenant-right for compensation at the conclusion of them?—Because I find, in every lease that I am acquainted with, if a man is going to leave he acts on the defensive, by robbing his land the last four years; in fact he will take the readiest means of taking all out he can; therefore I think a lease imperfect without a tenant-right. I should prefer a lease, for giving me security of possession, but I think there would be longer holdings under a legal tenant-right than under a lease.

Speaking as a practical farmer, you prefer a yearly holding with a tenant-right to a lease?—Yes, I would; a lease with a tenant-right I should like; I should however prefer tenant-right to a lease.

Do you prefer a yearly holding with a tenant-right, even to a lease with tenant-right?—Under my present occupation I should, because simply I have found the thing goes on from year to year, without any fresh bother; and I think you are more likely to hold the farm longer under a tenant-right than by a lease.

Do you think the granting a tenant-right compensation to tenants would be any injury to the landlords?—Certainly not, I do not think a good landlord would know such a thing had passed at all; nor do I think a bad or indifferent one would, except that he would see his land improved, contrary to his wishes.

Sir, J. TROLLOPE.] Do you know cases where a landlord objects to his estate being improved?—No; but I know of estates not improved.

Do not the Northamptonshire landlords afford every encouragement to their tenants to improve?—I do not think they do afford every encouragement to improvement.

Do they ever give them any tiles for drainage?—Yes, in some few instances.

Is not that an encouragement?—Decidedly.

Do they ever give any good buildings?—Yes, in some few instances.

Is not that an encouragement?—Yes.

Then they do give them some encouragements?—Yes.

You have passed a sweeping condemnation upon the whole of the landlords of Northamptonshire, without considering the effect of your answer perhaps?—It was quite unintentional if I did.

It was a sweeping condemnation; you say that some landlords would have a disinclination even to the improvements of their farms. Are not great improvements going on there, and have not you seen them; how long have you farmed there?—My answer does not imply that; my own case is a striking proof to the contrary. I divided the classes into two; good, and bad or indifferent landlords. I began business when I was twenty-one years of age, and have been farming there ever since, thirteen years.

And have not you seen considerable improvements going on in Northamptonshire at that time?—Yes, I have; but I still think they would have gone on much faster if the landlord had not the power of peremptorily taking the advantage of the improvements.

By raising the rent?—Yes, or by six months' notice to quit.

You say that you have farmed thirteen years there, and succeeded your father in the farm?—Yes.

How long did he occupy the farm?—Fifty-two years.

Is not that a great encouragement to good cultivation, even without tenant-right?—Yes, decidedly.

And you have acted upon the principle that your landlord was a good one and would not interfere with you or raise your rent?—Yes.

And do you not, therefore, afford a very strong instance in your own case of encouragement given by the landlord to the tenant?—Yes.

Do you not know of many other such cases?—Yes.

It is not correct then to say that the landlords do not encourage their tenants to make improvements?—There are cases where the landlords do encourage their tenants to make improvements, but it is correct that in the majority of cases they do not; consequently the tenants, for want of tenant-right, if not standing still, are making but slow progress.

You have stated that there are many cases where the grass land has been robbed to enrich the arable land?—Yes; it is the general mode of farming in Northamptonshire by folding from and mowing the grass land.

Have you known a case where the landlord has sued a tenant in a court of law or otherwise to recover compensation for dilapidation?—Yes.

More than one?—Yes.

Do you recollect any damages being recovered by the landlord?—Yes; damages were given (although it was sworn by several eminent valuers that the tenant had improved his farm) for growing more wheat than the custom of the country warranted him in doing.

What is generally called cross-cropping; that is, too many white crops in succession?—It is difficult to answer that question.

That was for growing extra crops of wheat?—Yes.

Were any damages given in that case?—Yes.

By a court of law or arbitration?—By a court of law.

CHAIRMAN.] As to the custom of Northamptonshire between outgoing and incoming tenants for acts of husbandry, when is the period of entry?—Lady-day, I think, more generally.

Has the outgoing tenant the away-going crops; does the outgoing tenant, that is, have the following wheat and barley crops?—No; the outgoing tenant is paid for acts of husbandry, for ploughing, sowing, seed, and labour, up till the time of his leaving.

That is, the outgoing tenant does that?—Yes.

Then has the incoming tenant the privilege of coming upon the farm to put in his wheat?—No.

Then does the outgoing tenant sow the wheat?—The outgoing tenant sows the wheat.

You conceive that if an improving tenant takes a farm which is out of condition, and leaves it in good condition, that he would undergo a heavy loss in consequence?—I do.

To what extent do you think the produce of the soil in Northamptonshire is capable of improvement?—I think I might say one-third.

One-third of the corn crops?—Yes, one-third of the corn crops.

Could much more meat be raised?—Yes, much more.

Do you think that the present high price of meat would be in any degree diminished if tenants were encouraged to use artificial food in the keeping of cattle?—I conceive that it would materially tend to increase the quantity of meat, and reduce the price.

If an estate held in fee-simple were mortgaged, is it your opinion that the owner should nevertheless have the power of giving compensation for improvements to his tenants?—Yes, I think so.

But do you think that the mortgagee would be in any degree involved thereby?—No.

Why not?—The farm would be in so much better condition, that it would let with much greater facility and sell for double the amount charged as the tenant-right for improvement.

Sir J. TROLLOPE.] In regard to the feeding of cattle, which was adverted to just now, is not it the common practice in Northamptonshire for the beasts brought in in the autumn to graze the ensuing summer, to be fed upon oil cake during the winter?—It is by no means a general system, because they find if they give cake in the winter, there is so much grass incapable of improving them in the summer that they keep them poor in the winter; in fact, the beasts are starved to suit the land, instead of the land made to suit the beasts and sheep.

How are those cattle kept in the winter?—In the straw yard; in many instances the straw yards are let at from 1s. to 1s.6d. a head.

They are put out to hiring in the straw yard?—Yes.

No cake being allowed?—It is quite a new system.

It is introduced?—Yes.

Say for Herefords; those are the cattle mostly grazed in large numbers in Northamptonshire?—Yes, by graziers, but they are not the men that use cake; it is by the producers, the farmers, that cake is used.

And has not great improvement taken place in the cattle and also in the farms, from their being so kept?—Yes.

Do you use cake?—Yes; I expend £300 a year for cake, linseed, and other food.

Any for sheep?—Yes, for both.

Do you farm upon any agreement?—Yes, I do; I have an agreement.

What are the terms of the agreement?—That I agree to farm in a good and husbandlike manner, and to leave according to the custom of the country.

Has any of this poorer land been broken up for arable purposes of late years?—It is gradually becoming more so, but not so much as I should like to see it.

Has not a considerable portion been broken up all over Northamptonshire?—It has partially, but by no means considerably.

Is that land drained before it is broken up?—It ought to be, and I have no doubt it is with all good farmers.

Have you been permitted to break up any?—Very little; not more than 12 or 14 acres.

You have broken up some?—Yes.

Was any extra rent charged upon you for so doing?—It was talked of.

It has never been done?—No.

Still it was for your benefit?—I drained it at an expense of £4 or £5 an acre.

Finding the tiles?—I pay interest for the tiles; the landlord found them and I did the labour.

Has there never been a system of compensation for draining in Northamptonshire where there has not been an allowance for materials or labour found by the tenant?—Not by the custom of the country.

Is not that system increasing of making compensation to the tenants?—No; Lord Pomfret and a few more possessors of farms are draining their lands, for which the tenants pay interest.

In that case the landlord does it, and all the expense the tenant is put to is the interest of the money outlaid by the landlord?—Yes.

Mr. HENLEY.] You said you wished to have a legal tenant-right?—Yes, I did.

Can you tell the Committee what advantage there would be in a legal tenant-right over a tenant-right with an agreement?—I think that if it was made imperative

it would be an advantage to the landlord, and be a greater certainty to the occupier.

What greater certainty would the occupier get than he would if he was to get it by agreement?—I do not know, if the contract is binding, that it is any difference whether it is by Act of Parliament or by private agreement.

The Committee wish to know, you having considered the subject, whether you can point out any difference that there would be if the tenant was secured by private agreement, or by the operation of a law?—The private agreement is such a slow process; and then another thing is, the competition for land is so great that we have no power to make private agreements.

That merely says that if you cannot make a private agreement, then a private agreement would not exist; the question is, whether an agreement can be made where the parties are willing to make it?—In that case I do not see but what the one way is equally as good as the other way; but in Northamptonshire the land is generally pretty good, and the number of people that run after land is quite surprising.

You would be guarded against the competition?—Yes; undoubtedly. In my case I happen to have a landlord so truly honourable, that I am sure nothing will ever occur to my prejudice; but I know many cases where tenants have paid for their own improvements a round sum; even among some large landed proprietors where the tenants have improved their farms, the valuer has come over, and the tenants have had to pay for those improvements which were their own; and, on the contrary, I have known where a man who has damaged his farm has probably had his rent sunk.

You state that you know instances where tenants have paid for their own improvements; what number of years have elapsed before the rent was raised, after those improvements had been made in those cases that you say you know of?—Perhaps I am just now hardly able to give an exact answer to that question.

Are you able to state, of your own knowledge, any case where a tenant has not had possession of the land, without an increase in his rent, long enough to repay him for his outlay?—In the estate I referred to, most of them are old tenants.

You said you knew cases where the tenants had been made to pay an increased rent for their own improvements; the question put to you is, whether you knew or not the time that had elapsed after that capital had been expended before the tenant was called upon to pay that increased rent?—No, I cannot just now charge my mind with the exact facts, although I know of some excessive cases of hardship.

Then you cannot form any just judgment as to whether the increase of rent was fair or not?—I can form this judgment so far, that the man who improved the land the most, the proprietor not knowing the circumstances, that is, the man who had farmed the best, had the most money put upon his rent.

Then all you can say is, that the farm being in good condition when valued, it was put at a higher rent than one in a bad condition?—Yes.

What is the length of time, in your opinion, that drainage ought to be paid for?—That, I think, depends so much upon the mode of drainage.

Take that which you have yourself done upon your own farm?—Mine is done at four feet deep with tiles, and I should say from 10 to 12 years would be a fair length of time.

The depth of the drainage only increases the expense. In what way does that alter the number of years that the compensation ought to be spread over?—In no way whatever, if the draining is perfect; if it is more expensive I suppose it would last a greater length of time.

You say it would be more expensive; what is the rea-

son why it should be spread over more years; it would be merely an outlay of £10 instead of £5; is that a reason why it should run over more years?—If it is more permanent and costly, it should last more years.

Is it more permanent?—Undoubtedly.

You stated that you and your father had been upon the farm for 63 years, 13 years yourself, and 50 odd years your father?—Yes.

And that you would prefer holding under a yearly agreement with a tenant-right rather than by lease?—Yes; I would rather go on as I am now with what I call a legal tenant-right than any lease whatever.

You said that being so you would prefer it, because there would be no "bother," that was your word, not from any apprehension of an increase of rent?—I meant to say that at certain periods with leases fresh contracts are made, at which there is generally some great change. It is not often that they are let from father to son right through; it tends to the quietness of the thing.

You think that if the land is periodically looked over there is a chance of a periodical increase of rent?—I think there is some probability of it.

That is not a desirable thing for a tenant?—Not too frequently.

If the land is going on in a progressive state of improvement, do you think it is fair that a landlord should get an increase of rent?—Most decidedly I do.

You have stated that you lay out about £700 a year upon 300 acres of land, about one-half being arable?—No; 200 acres of arable, and 100 of grass.

Can you say what the ordinary average expenditure per acre of labour in Northamptonshire is upon one farm?—Where there is two-thirds arable and one-third pasture, I should say from 20s. to 25s. per acre.

Not exceeding that?—Not exceeding that.

What is the custom of Northamptonshire about buildings?—All the buildings that are done, I believe, are made by the landlord; and it is the tenant's duty to keep them in repair. I never knew a case where the custom allowed anything, even if a tenant did build.

Are the farms in Northamptonshire, speaking generally, supplied with sufficient buildings for the cultivation of the land?—I think they are not sufficiently provided; perhaps they are as well supplied as most other counties, and perhaps a little better than some.

You think Northamptonshire is better supplied than other counties, but not sufficiently supplied with buildings nevertheless?—Yes.

Do you think that the tenantry would generally be disposed to pay a fair rent for the putting up of buildings?—I have no doubt of it.

An increased rent?—Yes, an increased rent for the money sunk.

Do you know where applications have been made to landlords to make such an arrangement, and they have been refused?—I do not know a case where a tenant has ever built upon the supposition that he should be compensated by the custom of the country.

You say that you think a tenant would be willing to pay an increased rent for additional buildings; can you state that you know any instance in which the tenant has gone to the landlord, and asked him to expend money for buildings, offering at the same time to pay a higher rent?—I know cases where the proprietor has declined.

You have told the Committee where rent has been increased upon the tenant; do you know any instances where farms have been given up in a deteriorated condition to the landlord?—Yes, I do, a great many.

Do you think there are as many cases of deteriorated farms given up to landlords as there are of rents unjustly raised upon tenants?—I think, perhaps, there are more cases of farms being left in a deteriorated condition

than there are of rents being unjustly raised upon tenants.

You are now speaking merely from a general observation of the mode of conducting the business in the county you live in?—I am speaking of rents being raised upon improvements. I say there are cases where men have made improvements upon their farms, and the valuers have come over, and then a higher rent has been put upon those farms; at the same time other farms that have been deteriorated, and would have been left, have been reduced in rent.

In what way would tenant-right prevent that?—It would prevent it so far that a man might go on or not at his own option; because he would have the power of claiming his tenant-right if he left; whereas now he is induced to take it again to recover his outlay, although compelled to pay interest to the landlord upon his own improvements; that is the only way in which the tenant-right could act in that case.

The chances are, that if it were worth a man's while to come in and pay the increased rent, it would be well worth a man's while to stay in the farm?—Yes, it may be; for I know a case of a man who had his rent raised three times in 12 years, and yet stayed, because he had spent his money in improvements.

And it may have been a cheap bargain after all?—I cannot say as to that. The competition, as I have said, is so great at all times that men will take farms where they are to be had, and particularly those that are well farmed.

You said, that in your judgment the produce might be increased one-third in Northamptonshire?—Yes, more than that, if a good deal of the grass land were broken up.

You mean if some of the poorer pasture lands were broken up into tillage you could then get one-third, but not keeping the lands in the same position as they now are?—I think I might put it at one-third. There is little oil-cake used there; consequently little good manure made. I think the produce would increase if the manure were made better.

You have admitted, in answer to a question put to you, that agriculture has improved very much in your time in Northamptonshire?—Yes, no one can deny that; and I think it would still more improve if there were a tenant-right for unexhausted improvements; in fact if the custom of the country was made in accordance with the times; but it is not so; the custom of Northamptonshire is a damaging custom, an impoverishing custom.

Should the tenant-right be ascertained according to the money outlay, or the benefit to the incoming tenant?—According to the benefit to the incoming tenant.

That would be your judgment as a principle?—Yes, decidedly.

Mr. BURROUGHS.] Would not there be considerable difficulty in ascertaining the exact benefit to the incoming tenant?—No, I do not think there would; I think with men of business it is easily ascertained.

What is the custom of the country in Northamptonshire?—The custom of the country is to pay for acts of husbandry, and for seed and labour, and for dead fallows. For the turnip ground they pay nothing at all; they consider the crop to be equivalent to the cost of producing it.

Is the root crop valued?—With respect to the Lady-day holdings they are considered to have nothing for them; they are worth the eating off.

You were understood to say, that it is customary for the landlord to find all the materials, and to erect all the buildings that are necessary?—Yes, it is.

Then of course it would not be fair for the tenant to expect any compensation for those buildings to which he contributes no part?—Certainly not.

In the event of the landlord not finding it convenient to erect the necessary buildings, would there be any difficulty in the tenant by agreement stipulating that if he was at the expense of erecting the buildings he should be allowed for them at the end of the term, or take them away?—There could be no difficulty at all; there could be no objection to that.

You said that you considered that the buildings in Northamptonshire generally, although better than in other counties, were not sufficient?—Yes; I think that is so.

Did your answer with regard to that apply to the arrangement of them, or to the extent of them?—I meant my answer to be this, that the farms in Northamptonshire are generally small farms, and I think in proportion to the size of them there is as much building as in any county, perhaps a little more, but I think the order of them is not good.

Does not that apply more to the arrangement than to the extent of them when you say they are not sufficient?—I have no doubt that if the buildings were to be made new, by scientific arrangement they might be made so that half the buildings would do that are now made; they want condensing, so that we might use steam engines; I would put one immediately, if it was not that my buildings are divided.

That would be a very expensive proceeding, would not it?—Yes; they will want wholly re-arranging to make them perfect.

And that would come hard upon many landlords?—Yes.

If the tenants had a right to re-arrange the buildings, and then quitted the farm within a certain number of years, and the landlord were to be called upon to compensate them for that, would not that produce considerable inconvenience?—Landlords need not be under any alarm of money being uselessly applied even under a system of tenant-right.

It would amount to a large sum, would not it?—It would be very rare for the tenant to do it without some mutual arrangement with the landlord.

Then, your opinion is that the tenant-right would not enable parties to put the buildings into that state that you would like to see them?—Not to make such an extensive alteration as is now spoken of.

Then the erection of any additional buildings for which the landlord, by tenant-right, would have to pay, would be rather a nuisance than otherwise, as incumbering the ground without benefiting the property?—No.

Not if there is a sufficient extent now?—The previous question was to making buildings.

The question was whether you did not think the difficulty arose from the bad arrangement of the buildings rather than from the want of a sufficient quantity of them?—I think there is a want of both, a want of order and a want of buildings too.

Considering the occupations in your immediate neighbourhood, do you not think that money could be more beneficially expended in arranging than in adding to the buildings?—In arranging them.

Can you point out any means by which the establishment of tenant-right by law would improve the condition of the occupiers materially?—By expending capital on the soil, without the fear of losing it by the caprice of the landlord, on the death of the parties.

Is there any chalk or marl in Northamptonshire?—No chalk.

Is there any marl?—There is some little marl, but it is not used to a great extent now.

Sir C. LEMON.] You spoke of there being great competition for land in Northamptonshire?—Yes.

Has that competition increased of late years much?—Yes, it has.

When you speak of "competition," you mean competition amongst parties having sufficient capital to work the land?—Yes, I should suppose so.

Not of the desire of tenants to have farms, those tenants having little or nothing to farm with, not knowing whether they could farm the land or not?—There is a great deal of that.

Is there not also a fair and just competition amongst parties having capital enough to farm the land properly?—Yes, I am bound to say there is.

Then do you think from that, that there is an increase in the total amount of agricultural capital now in the country?—No, I do not think so, not with the present occupiers of land. I do know that a great many young men totally unconnected with farming are being brought up as agricultural pupils.

There can be no dangerous competition against persons like yourself occupying a farm with full capital by competitors of that sort?—Perhaps in my case, situated as I am, there might be, because I live near a town, and the competition there is excessive.

Still no landlord would hesitate to choose between a person like yourself with sufficient capital, and a young man merely taught how to manage a farm without sufficient capital?—No, he would not.

Sir J. TROLLOPE.] The farms in Northamptonshire are rather small, are they not, generally speaking?—They are much smaller than in Lincolnshire.

What is the average size of farms in your district, in Northamptonshire? I should think from 200 to 500 acres.

Those are considered large? Anything like that is considered a good sized farm with us.

And amongst the smaller class of tenantry there is a want of capital? No doubt about it.

Still there is the same active competition among them to obtain farms? Yes.

Many of those men occupy farms with a borrowed capital, do they not, by the assistance of friends, or bankers, or others, who may be willing to advance money? Yes, I should think so.

Does not that produce a bad system of farming by those persons struggling with adverse circumstances? Yes, and I think the present custom of the country does a great deal towards it.

Have you acted as valuer between outgoing and incoming tenants? Once or twice only.

You are not in the habit of doing so? No.

Do you know in your practice amongst valuers between incoming and outgoing tenants, if the tenant-right has not been increased in some degree in its liberality, more being allowed for artificial manures, some of which are of a new description, and also for drainage? No, I do not thing so.

Do you not find any progress making to allow the outgoing tenants more liberal valuations? Not the least.

Is it at a stand-still? Completely so.

(To be continued.)

IMPORTANCE OF STEAM POWER AS AN AUXILIARY IN FARMING.

Visited on Friday, Lower Netherwood, now the property of Mr. Stott, as also High Kelton closely adjoining—possessions obviously united by nature, despite the fortune which occasionally divides, and together comprising 220 acres of land, much of which is alluvial, and bounded on the lower side by the Nith. In accordance with expectation, found all the arrangements trim and business-like, under the management of Mr. Brown, a husbandman trained in the East Lothian school, and from lengthened experience master of his art as practised in that land of extensive superfluous, scientific enterprise, and high cultivation. The barn-yard first attracted attention in this, as in most other cases, not merely full, but running o'er, and including seventeen goodly stacks of beans, probably the greatest amount of pulse, acres considered, grown on a single farm in Nithsdale. By an easy transition turned to the sheds and straw-yard, where, thanks to room and verge enough, the cattle in progress of fattening are exceedingly well accommodated. Many farmers, hampered for space, are forced in winter to tie up bullocks and heifers; but at Netherwood the practice being by no means necessary, is neglected as supererogatory with marked advantage. Freedom is as dear to the genus bovine as to those who tend them; and, accordingly, Mr. Stott's stock, with no halters round their necks, are permitted to indulge their own fancies, whether in munching turnips under cover, or taking the air in an open court, thickly lined with oaten straw—whichever they find most agreeable. In the sheds we found troughs well filled with bulbs, and in the centre of the straw-yard a smaller accommodation of the same kind presenting juicy neeps—so that the animals on a fine day have a choice of food to masticate alternately as they feel inclined. And there can be little doubt that this is the natural way of manufacturing beef, for reasons that will occur to every reader, especially the fresh air exercise which aids so powerfully healthful digestion. One thing however was wanting, of which cattle are instinctively fond; and that is, lumps of rock salt, a cheap article since the duty was removed, and which, even if dearer, is an essential in the economy of every straw-yard. Pigs we observed running about well-grown and even fat, although allowed to fend for themselves by snouting among thrashed straw, with scarcely any artificial aid, excepting occasional odds and ends not easily better bestowed.

But our chief object in visiting Netherwood was to inspect the steam thrashing-mill lately erected by the lord of the manor. And, very fortunately, we found it at work, and had thus an opportunity of marking its performance, in connection with insight into the whole machinery. And although only of four-horse power, a more complete or serviceable *broetnie* of the kind it is impossible to imagine. By means of apparatus attached, it pumps its own water, and tells the depth in the boiler by means of an index. Fuel of course must be thrown into the furnace below, and sheaves placed in the feeding orifice above; but these necessary requirements complied with, every other operation is performed by machinery, down to the fanner work, which, in reducing the contents of stacks into portable bulk, renders their fruits farther, measured and sacked, a marketable commodity. Mr. Thornburn, senior, who resided long in Netherwood, and happened to be present, said the mill in question, apart from other advantages, would save the labour of a man and a pair of horses, which he estimated at above £100 yearly. And as regards speed, the manager stated frankly that instead of one stack, formerly milled by a double team, he could now thrash two in considerably less than the same space, to say nothing whatever of garnering labour better executed into the bargain. This of itself is an important consideration, extending as it does ability to meet markets under the most favourable circumstances; but even that advantage we consider trifling compared to the saving in the tear and wear of animal power—viewed whether humanely or economically, the crowning triumph of the whole. By all it is admitted that tugging round in the thrashing mill is by far the severest yoke that falls to the lot of horses, alike from the confined atmosphere they breathe, and the monotony inseparable from drudgery the most repulsive. In the plough or cart, farm steeds enjoy the open day, and by being frequently near their kind, are excited to exertion—an appointment very different

from galley-slave labour forced without appeal on the brute creation. Even on the largest farms, where many teams are kept, animals that merely take their turn at the mill are exceedingly apt to become invalid. Hence the difficulty of keeping stocks entire—a circumstance which, wherever carefully weighed, suggests forcibly the employment of steam, where water-power, the cheapest of all, is from untoward circumstances unavailable.

In inquiring into expense, were informed by Mr. Brown, first, that the machinery in use at Netherwood cost £110, apart from the buildings, which are more a landlord's than a tenant's concern; and secondly, that in working five or six hours he consumes five cwt. of Canonby coal, which, at 7d. per cwt., amounts to 2s. 11d.; but this expense, he added, would be sensibly reduced were the motive power constantly in action. In getting the steam up, more fuel is required than in impelling cranks and cog wheels afterwards; and his own opinion is, that even a four-horse mill, in regular gearing, would suffice to thrash all the grain grown in the parish of Dumfries. And after pondering the subject in every way possible, we beg to tender Mr. Stott our warmest congratulations for a good example set, which we trust before long will be generally followed. Our humble testimony, we are well aware, cannot be expected to weigh with the initiated; but it is totally disinterested, and that at least constitutes a something, seeing we are neither farmers nor machine-makers. In laying land thoroughly dry, proprietors not unfrequently furnish the tiles at a moderate per centage; and why not adopt the same principle in the case of machinery, better than bone and muscle, constituting a right arm of strength. In our own and adjoining counties, farms might be reckoned in hundreds which have no convenient access to running streams; and why not in all such cases put the enterprising tenants of Dumfries-shire and Galloway in possession of a power available in all weathers, not excepting protracted drought, which, in place of fatiguing, enables relay horses to overtake other employments and is considered a *sine qua non* in economical, scientific, farming?—Dumfries Courier.

CROSS-BREEDING OF CATTLE.

The cross of a short-horn with a Shetland cow has, with common feeding, attained the weight of forty-five stones, and possesses such remarkably fine quality of beef as to command the highest price. The substance, symmetry, and weight of the native ox are greatly improved, and the proverbially fine quality of the beef not deteriorated. A cross with a North Highland cow, though much inferior to that with a Shetland, is a decided improvement. A cross with a Galloway cow, a Buchan doddie, or a large-horned Aberdeenshire cow, is improved at once in weight and substance, quality of beef, and fineness of appearance. An ox from a short-horned bull and a large Aberdeenshire cow obtained the first prize for fat, symmetry, and weight, at the Highland Society's Show at Aberdeen, in 1834, and weighed, when alive, 224 stones, and when dead 173½ stones. A cross with a Fife cow loses the gaunt form of the native breed, and has a greatly-increased disposition to fatten. A cross with a West Highland cow is very nearly equal in substance and symmetry to the pure short-horn. A cross with an Ayrshire cow, in consequence of the exclusively dairy uses of the Ayrshire breed, is altogether unadvisable. A cross with a long-horned Irish cow, of any of the midland or southern counties, is quickened in disposition to fatten, and has its beef of a very fine quality, and thick upon the sirloin and back. A bullock from a short-horned bull and a Guernsey cow, and fed on distillery offals, yielded to the butcher 104 stones in his four quarters, and 22 stones of tallow. Mr. Dickson says, "I saw him when fat, and he was without exception the fattest bull I ever handled." A heifer from a short-horned bull and an Indian cow was exhibited at the Highland Society's Show at Kelso in 1832, and admired by every person for fatness and extreme beauty, and her back and sirloin well covered with beef. The crossing of native ewes with Leicester rams has for a considerable time past been as generally practised for the improvement of sheep as the crossing of native cows with short-horn bulls for the improvement of cattle, and has been conducted with nearly the same

want of discrimination, yet with much of the same preponderance of excellent result. Let it be strongly impressed on all improvers of cattle and sheep by crossing, that the use of cross-bred bulls or rams, particularly such as are of merely the first or second generation, is in all respects injudicious and often exceedingly disastrous. The use of a cross-bred bull or ram among even the race to which he belongs, or on the farm on which he has been bred, may more than counteract all the benefits of the original crossing, or may originate a progeny considerably more defective in aggregate character, than the uncrossed and unimproved race; and the use of a cross-bred bull or ram among a breed of different points and different situations than that of his own female ancestry, is simply to produce mongrels from mongrels, to destroy all distinctions of breed, probably to elicit an assemblage of motley and misshapen animals, and certainly to enact a burlesque upon the whole theory of crossing.—Rural Cyclopedia.

PORK IN THE UNITED STATES.

Pork packing in the west has already commenced, and promises to be very large. Mr. Cist, in his *Daily Advertiser*, gives the following statistics respecting pork packing in 1847 to 1848:—

In Virginia—Wheeling	5,000
In Kentucky—Louisville	97,200
Maysville	11,000
Covington	6,000
In Tennessee	100,000
Indiana—Wabash points	162,641
White River do.	29,000
Madison	75,000
Aurora	10,000
In Illinois—Quincy	20,000
Alton	30,500
Other points on the Mississippi	43,000
Illinois river points	121,000
In Missouri—St. Louis	63,924
In Missouri—Hannibal	20,000
Lexington	6,009
Missouri river points	37,900
In Iowa—Bloomington	10,000
Fort Madison	10,000
Burlington	15,000
In Ohio—Chillicothe and other points	80,000
Warren county	30,100
Clinton county	17,200
Brown county	17,824
Cincinnati, &c.	488,160
Total	1,506,458

The editor of the *St. Louis Republican* estimates the year's packing in the west at 1,492,924 hogs—the difference between us, which is not more than 14,000 hogs, is more than made up in this state's packing operations, not included in his statements. When it becomes evident that the packing here would approach half a million, it was generally supposed that the entire packing of the west would reach 2,000,000 hogs, Cincinnati usually packing one fourth the entire quantity put up in the west. It is now, however, probable that what I have hitherto set down for the entire putting up of the west for 1847-48 as not exceeding a million and a half of hogs was correct.

The following particulars respecting the cheese trade are authentic, and may be relied upon.

The *Western Reserve Chronicle* says,—By a reference to the books at the canal office, we are enabled to state the amount cleared for market during the last six years, viz:—

1842	1,230,168	1845	2,995,376
1843	2,415,177	1846	4,763,723
1844	3,944,404	1847	6,599,170

The *Albany Journal* gives the following statement of the

amount of cheese received at Albany and Troy during the past twelve years:—

	lbs.		lbs.
1836	14,060,000	1842	19,004,000
1837	15,500,000	1843	24,331,000
1838	13,810,000	1844	26,677,500
1839	11,530,000	1845	27,542,861
1840	18,820,000	1846	35,560,180
1841	14,170,000	1847	40,814,000

The following are a part of the exportations of cheese from the state of Ohio:—

	lbs.
Trumbull	4,000,000
Portage	2,000,000
Geauga	250,000
Madison	200,000
Ashtabula	5,000,000

Five counties

11,450,000

It appears, then, that the state must export at least twelve millions of pounds of cheese—probably much more.

Of butter, the counties engaged in exporting are much more numerous. The following are part:—

	lbs.
Carroll	75,000
Crawford	200,000
Cauga	50,000
Harrison	250,000
Hancock	35,000
Huron	100,000
Muskingum	200,000
Morgan	20,000
Trumbull	160,003

Nine counties

1,020,000

The export of the state is probably about four millions of pounds. The dairy products of Ohio are, therefore, very large.

BRIDGNORTH COUNTY COURT.

THURSDAY, NOV. 16.

IMPORTANT SPECIAL JURY CASE.—RIGHT OF LANDLORD AND TENANT AS TO THE REMOVAL OF FRUIT TREES.—Thomas Charlton Whitmore, Esq., v. Thomas Minton.—Mr. Samuel Nicholls, solicitor, conducted the case for the plaintiff, and Mr. R. O. Backhouse, solicitor, was retained for defendant.—The following persons were called on the jury and sworn:—Mr. W. Angeworth, of the Hay Farm; Mr. George Birken, of Endon; Mr. Ezekiel Crow, of Romsley; Mr. James Bromley, of Frog Mill, and Mr. John Cox, of Binnall.—Mr. Nicholls opened the case for the plaintiff by stating that this was an action brought by him against the defendant for damages done to a farm at Harpswood, in the parish of Morville, near Bridgnorth. The defendant had had notice to quit at Michaelmas last, and had done so, but previously had cut down a quantity of shrubs and trees, growing upon the premises. The house was shamefully left, and a quantity of windows broken, for the repairs of which and for the removal of the fruit trees, the present action for damages was brought. A farming tenant, he contended, had no right to remove fruit trees; it was quite a different case as to a nurseryman, whose trade it was to transplant and sell, the law made a wide distinction between the two. He should prove that the nut trees had been planted twelve years.—Mr. G. Parson, sworn: I am agent to Mr. Charlton Whitmore. I saw eighty filbert trees growing in the garden: they were from eight to ten feet high, and growing about six feet apart; they were large enough to bear; last year they were luxurious in bearing. The trees were of from 12 to 14 years' growth. Defendant had said he planted them in 1834.—Cress-examined by Mr. Backhouse: I have been in practice as a land-surveyor and agent some years, and I never knew trees so removed. There were sixteen apple trees, part Spaniards; some were

planted to remove, others to stand. Such trees ought not to be removed. On Michaelmas-day, when I went, I found them removed, and he (Minton) said he had a right to do it, and he did remove them. There were also some fine laurustinuses and other shrubs growing up in front of the house, and they had all been cut down and removed, some large enough to stop up gaps in the farm. I consider the house and premises damaged to the amount of £10. A glazier went round the premises to count the broken panes. I have been in this neighbourhood two years. I do not know the custom with regard to filbert trees. Minton said he brought them there, and as a nursery he should take them away. I believe that no trees can be removed from custom. I did not understand that the defendant had an unlimited right of farming on the property. The house and garden was in excellent condition when the defendant entered.—An agreement for lease and release was here put in by Mr. Backhouse, signed by the parties and dated the 6th of October, 1848, wherein Mr. Wilson, of Claverly, was chosen by the plaintiff, and Mr. Baker, of Eardington, by defendant, as referees, to whom all subjects in dispute should be left, and an umpire was agreed to in the person of Mr. Griffiths, of Brouden.—The execution of the agreement was admitted by the plaintiff's solicitor.—Mr. Nicholls then called Mr. Thomas Branson, who being sworn said: I was agent for the late Thomas Whitmore, Esq., plaintiff's father, in 1834. I let the Harpswood farm to defendant, Mr. Minton. He was not tied down as to any particular line of farming, as the arable lands and farm were in bad condition. I told him I had no objection to his planting trees, but should reserve the right of purchasing such at the expiration of his time on the farm, within ten years, at the cost price of such trees. After that period should not think of giving compensation for such. I never, during my agency, gave any tenant leave to move trees, nor considered they had any right to do so without approval or consent.—The evidence for plaintiff's case having closed, Mr. Backhouse, solicitor for defendant, rose and contended, in an elaborate speech, that the evidence of Mr. Branson was conclusive, and in favour of his client, as to the liberty given to his planting the trees with the reservation of the right of purchasing them on the defendant's leaving, and called Mr. Thomas Minton, who said: I became tenant to the late Thomas Whitmore, Esq., at Mr. Michaelmas, 1834, leaving Kinlet, from whence I brought my nut trees, and planted them in the garden. I spoke to Mr. Branson about planting fruit trees in the orchard. He agreed to pay me for all I planted; I do not at this time recollect the price. I am certain the nut trees did not bring me in 5s. in any one year. Mr. Parson had said that it was on Michaelmas-day he went through the garden: it was not so, for it was on the second day of October. [Mr. Parson here rose and admitted the error as to date.] There were nothing but fir and laurel trees in the garden when I came in 1834, and what was in the garden I paid Mr. William Jones for, he being the off-going tenant. When I went away I did not stir any of the raspberry, gooseberry, or currant trees; these were all left. It was the place of the landlord to ask me about the purchase of the other trees, and not my place to offer them. The question was as to my right of removal, and as I brought them I took them away.—Mr. Baker, of Eardington, farmer, sworn, said it was the custom to allow the off-going tenant for all trees planted by him of ten years' growth, but not above that time. It had been his usual practice at Middleton Farm and other places, and at Dudmaston, from which farm he moved, he had removed the trees. Where such trees were not removed the tenant was always paid for them.—His honour addressed the jury, and went over the evidence at very considerable length, explaining to them that the question was to what amount of damage the plaintiff was entitled by the removal of the trees.—The jury, after consultation, returned a verdict for the plaintiff of £10, deducting £4 13s. therefrom for the defendant for the value of his trees, making the absolute judgment for plaintiff £5 7s.

A second action was brought by the same plaintiff against the same defendant for trespass on the said farm, but which was settled by the judge, with the consent of both parties, giving the plaintiff a verdict of 30s. damages, the two verdicts carrying the costs.

The event of these trials caused great interest to a crowded court. They were not concluded till half-past five.

WORKHOUSE FARE AND PRISON DIET.

We stated last week, in our Session's report, that all the remonstrances of the magistrates, backed by their strongly expressed opinion that the increased scale of dietary recommended by the government would operate as a *direct premium to crime*, had had no effect upon Mr. Inspector Perry, but that he (with the approval of Sir George (Grey) was determined to enforce it. The policy and the justice of such a course will be best seen by contrasting the fare upon which the paupers in our workhouse are fed (by order, he it remembered, of the Poor Law Commissioners) with that hereafter to be given to the most depraved characters in the county, whose misdeeds have gained them an admission within the walls of our prisons.

WORKHOUSE FARE.

SUNDAY—Breakfast, 8 oz. bread, and a pint and a half of broth, gruel, or milk. Dinner, 8 oz. bread, and an ounce and a half of cheese. Supper, 7 oz. bread and an ounce and a half of cheese.

MONDAY—Breakfast, the same as on Sunday. Dinner, 8 oz. bread and 3 oz. of cooked bacon. Supper, as on Sunday.

TUESDAY—Breakfast, as before. Dinner, 5 oz. bread and a pint and a half of soup. Supper, as before.

WEDNESDAY—Breakfast, as before. Dinner, 18 oz. of suet or rice pudding. Supper, as before.

THURSDAY—Breakfast, as before. Dinner, 8 oz. bread and 4 oz. cooked meat. Supper, as before.

FRIDAY—Breakfast, as before. Dinner, 18 oz. of suet or rice pudding. Supper, as before.

SATURDAY—Breakfast, as before. Dinner, 8 oz. of bread and 4 oz. of cooked meat. Supper as before.

NOTE.—This is the workhouse dietary for men; the women and children have less in proportion.

PRISON DIET.

SUNDAY—Breakfast, 1 pint of oatmeal gruel and 6 oz. of bread. Dinner, 4 oz. of cooked meat, without bone, 1 lb. of potatoes, and 6 oz. of bread. Supper, 1 pint of oatmeal gruel and 6 oz. of bread.

MONDAY—Breakfast, 1 pint of cocoa, sweetened with $\frac{3}{4}$ oz. of molasses or sugar, and 6 oz. of bread. Dinner, 1 pint of soup [see note], 1 lb. of potatoes, and 6 oz. of bread. Supper, as on Sunday.

TUESDAY—Breakfast, 1 pint of oatmeal gruel, and 6 oz. of bread. Dinner, 4 oz. of cooked meat, without bone, 1 lb. of potatoes, and 6 oz. of bread. Supper, as before.

WEDNESDAY—Breakfast, 1 pint of cocoa, sweetened with $\frac{3}{4}$ oz. of molasses or sugar, and 6 oz. of bread. Dinner, 1 pint of soup, 1 lb. of potatoes, and 6 oz. of bread. Supper, as before.

THURSDAY—Breakfast, 1 pint of oatmeal gruel, and 6 oz. of bread. Dinner, 4 oz. of cooked meat, without bone, 1 lb. of potatoes, and 6 oz. of bread. Supper, as before.

FRIDAY—Breakfast, 1 pint of cocoa, sweetened with $\frac{3}{4}$ oz. of molasses or sugar, and 6 oz. of bread—Dinner, 1 pint of soup, 1 lb. of potatoes, and 6 oz. of bread. Supper, as before.

SATURDAY—Breakfast, 1 pint of oatmeal gruel, and 6 oz. of bread. Dinner, 4 oz. of cooked meat, without bone, 1 lb. of potatoes, and 6 oz. of bread. Supper, as before.

NOTE.—The soup to contain, per pint, 3 oz. of cooked meat without bone, 3 oz. of potatoes, 1 oz. of barley, rice, or oatmeal, and 1 oz. of onions or leeks, with pepper and salt. The gruel, when made in quantities exceeding 50 pints, to contain $1\frac{1}{2}$ oz. of oatmeal per pint, and 2 oz. per pint when made in less quantities. The gruel on alternate days to be sweetened with $\frac{3}{4}$ oz. of molasses or sugar, and seasoned with salt.

None, however, but those who commit *great* offences are to have this advantage over poverty. In order to prevent that which it is well known has already occurred, and is more likely than ever to occur hereafter—insubordination in the workhouse for the purpose of being committed to prison, as the preferable place of confinement; and as if to visit with a heavier punishment the miserable wretch who, goaded by pinching hunger, may seize unasked a piece of bread or meat belonging to his more fortunate neighbour, the government scale of

dietary provides, that were prisoners have committed small offences, such as deserve only a few days' imprisonment, they shall have, for breakfast, a pint of oatmeal! for dinner, 1 lb. of bread! for supper, a pint of oatmeal gruel; or, if committed for a fortnight, they become entitled to something better; such as, for breakfast, 6 oz., of bread added to their pint of oatmeal gruel; for dinner, 12 oz. of bread; and for supper, a pint of oatmeal gruel and 6 oz. of bread; and so on, in increased proportion, according to their terms of confinement, until they get up to three months' imprisonment, when they become entitled to the fare placed opposite the workhouse diet—a fare, we will engage to say, not one out of 20 of the honest, hard-working labourers of this county enjoys.

It is needless to dwell upon the probable result of such a system of dietary in our gaols. The magistrates of the county have too truly anticipated its effects in their strongly expressed opinion "that it will operate as a *direct premium to crime*"—and that of the worst character.—Devizes Gazette.

THE VEGETABLE MARROW: ITS COMPOSITION AND FEEDING PROPERTIES.

BY ALFRED GYDE, ESQ., M.R.C.S.E.

The repeated failure of the potato crop, and consequent difficulty in obtaining an abundant and nutritious food for pigs, particularly by the cottager, has induced a belief that the vegetable marrow may be substituted for the potato with considerable advantage.

A writer in the *Agricultural Gazette** states, "I have been trying various experiments this autumn with ripe vegetable marrows; and I find they contain a rich, sugary, and farinaceous matter; and my taste, as well as that of those to whom I have sent them, very much approves of them if cooked. . . . But my object is to recommend the vegetable for fattening pigs. We will suppose that early potatoes are grown; for to grow late ones any longer is a waste of land, and starving to the population, until better seasons come. The early sorts, having been taken great care of during the winter, and treated as recommended in my pamphlet, will be off the ground early. The seed of the marrow may be sown about the 1st of May, in the open ground, in any warm corner. When transplanting-time comes, the potatoes will not be near ripe; but proceed thus: Lift a root of potatoes every five or six feet apart in the row, leaving six or eight rows of potatoes between the rows of marrows, and so on. I find that, with moderately rich land, I can grow 20 tons to the acre easily. When ripe, they can be stowed away anywhere, and may be boiled along with other food for pigs, for all pig's food ought to be boiled. . . . The cottager may grow marrows where other things will not grow, such as on walls, poles, trellises, and over his cottage."

Supposing the above data as to produce, culture, &c., to be correct, a series of chemical experiments on the vegetable marrow were undertaken by me, with the view of ascertaining its composition and relative value. The following are the results:—

1. When submitted to the process of drying, at the temperature of 230 deg., until it no longer lost

weight, 10,000 parts of the recent vegetable marrow* was found to consist of

Water	8,820
Dry organic and saline matter	1,180
	10,000

Thus the relative amount of water and dry organic matter approaches much nearer that of the turnip or carrot than of the potato.

2. When the dry matter was submitted to proximate analysis, its composition was found to be

Fibre and starch	120
Sugar and mucilage	494
Protein compounds, with pectic acid	486
Oil and fatty matters	20
Saline matter and ash	60

1,180

3. When the ash was chemically examined, it was ascertained to consist of

Carbonate	} of lime,
Phosphate	
Sulphate	
Chlorine,	
Potash, and	
Magnesia.	

From the above composition, the vegetable marrow very nearly resembles the swede-turnip, both in the per-centage of its organic constituents, water and ash, and would be found to be at least equal to it in its feeding properties, when given to cattle; but we may be allowed to express a doubt as to its properties of *keeping* being at all equal to the swede or carrot, yet for the cottager it may be found a valuable acquisition.

We are given to understand that a great number of farmers visited the Islington Cattle Market last week, all of whom were astonished at the extent and excellence of the accommodation. The market is capable of accommodating conveniently within the walls 8,000 head of cattle, and 50,000 sheep, besides horses, pigs, &c. A junction railway, which is now in the course of formation, passes within 350 yards of the market, and from which a tram-road will be laid into the market. This railway runs from Blackwall, and will unite the Northern and Eastern, the Eastern Counties, the Great Northern, the North Western, and the Great Western railways, and will hereafter be extended over the Thames to the South Western, thus rendering it unnecessary for any animals to pass through the streets of the metropolis to arrive at the market, it being ascertained that seven-eighths of all the cattle brought to London arrive by the northern and eastern lines. We are informed that a Committee for carrying out the arrangements of the Islington Market is in course of formation.—Mark Lane Express.

* The vegetable marrow used in these experiments was a spotted green variety, and about three-parts grown.

* Mr. James Cuthill, Camberwell.

SUGGESTIONS FOR SANITARY REGULATIONS.

BY J. TOWERS, MEMBER OF ROYAL SOCIETIES OF AGRICULTURE AND HORTICULTURE.

So much has been already said on the measures now contemplated for the general health and comfort of the people, that it might appear superfluous to write one more line upon the subject. As, however, there are some points which have been inadequately noticed, or erroneously viewed, I feel inclined to offer the following remarks, which I hope may not appear inappropriate.

In the first place, *as the pollution of the rivers*—that of the *Thames* above all—has been dwelt upon by the leading periodical press, it is to this most interesting subject that I would solicit attention. There can be no doubt that sewers and egouts of every description should be so constructed as to facilitate the passage of their contents to some fitting receptacle, and also to permit the entire removal of the more solid portions by “flushing,” if any sediment be deposited. But the question here presents itself—Where should such receptacles be prepared? How should they be constructed in order effectually to guard against the diffusion of those offensive gases which at present form the subject of serious complaint?

By *nature*, the rivers are constituted the best and most effective channels of conveyance, and man has in a degree availed himself of the facilities thus afforded. We have then to consider whether the fecal matters conveyed by sewers into running streams do really contaminate their waters. Applying this inquiry to the river *Thames*, on account of its pre-eminent importance, I would ask whether the water of that vast river is in truth vitiated and “poisoned” by the influx of sewage through the drains of the metropolis? If—*de facto*—it be so deteriorated, how does it happen that *Thames* water is, and has been through time immemorial, employed and preferred by the great brewers for their “London porter,” and also used for its excellent qualities in the naval and merchant service? Has one instance of virulent or epidemic disease been traced to the domestic use of *Thames* water? But to come nearer home—to *Croydon*—where I am in a degree interested. The neighbourhood of this populous town abounds with small and rapid streamlets, which act as tributaries to the river *Wandle*. In the town itself there are two ponds, not of stagnant water, since some of these small streams traverse them; yet these basins (one in particular) are made the recipients of the foul drainage from the most dirty and closely packed quar-

ters, densely filled with the lowest part of the population. A vast deposit of foul mud is made in the greater pond, yet the moving water which passes through it on its course westerly towards *Carshalton* becomes so pure as to rival that of any of the mountain streams which flow into the northern lakes. Water acts directly as a powerful antiseptic; for when sewage impurities descend to the bottom of a stream, fermentation gradually proceeds, gas-bubbles are extricated and pass into the air. During the course of this elementary decomposition, the fecal matter is most effectually deodorized, and thus one great object of the sanitary regulations is obtained. *Aquatic vegetation* becomes a powerful adjunct, not only by the agency of its peculiar vital principle, but also by the instrumentality of animalcules attached to each individual weed. These microscopic agents perform a *rolé* of vast importance to man—a subject which was treated most instructively in the *Gardener's Chronicle* of Dec. 2nd, under the head of the removal of duck-meat (*Lienna*) from the surface of ponds.

I had a very fair opportunity to witness the results of the processes just alluded to, in a walk which I took on the 11th Dec. inst., wherein for miles I inspected the course of the running brooks to and beyond *Carshalton*. The water was pellucid as crystal, the weeds being distinctly seen in the deepest places “waving about their undulating home.” Yet I noticed with satisfaction that in various places, particularly by the whole length of the streams in *Beddington Park*, the black mud had been withdrawn from the bottom of the channels in such quantity as to raise a very considerable bank on each side. Not a hint of foul odour was emitted from this substance; and I have observed the same thing when the *Croydon* ponds have been cleansed, and the mass deposited on the side of some meadow near at hand. If, then, water and its vegetable accessories purify the sewage matters deposited therein, converting them into a rich manure, the fluid itself remaining pure and undefiled, are we not authorized to conclude that the rivers and streams are the proper and fitting channels of conveyance?

But here another view of the subject presents itself. The *agriculture of the country* requires manure; and were it possible to collect all the drainage products of our great towns, it would be supplied in a form that could not be surpassed. Still, how-

ever, there are obstacles to be overcome; for how and where are receptacles to be found or made which could receive the enormous volume that now passes away? Again, the substances so collected must be effectually deodorized, otherwise the land would be exposed to an atmosphere of "pestilent vapour." I say pestilent not as implying the propagation of epidemics correctly so called, but as bearing far and wide odours of so foul a character as to be insupportably disgusting. I would not, however, pretend to interfere with any just and scientific plans now in progress; yet, under the desire of being true to nature and its unimpugnable laws, I cannot refrain from insisting upon the truth of the facts already adduced.

If, then, it be demonstrably the fact that the rivers are the natural channels destined to carry away the ordures of the land; if, moreover, water purifies such peccant matters, decomposing the urinous salts, expelling the hydro and phosphocarbons and ammoniacal elements, which subsequently are yielded to the earth through the media

of rain, snow, and mists; if, finally, the more solid remains are converted to a black humus mud, void of offensive smell, and rapidly convertible to the best of manure by due exposure to the atmosphere, would it not be wise to reflect, and in the end resolve to clear and render effective the bottoms of brooks, streams, and rivers, in order from time to time to remove from thence the semi-prepared manure, and thus, without any offensive processes, to secure the utmost possible bulk of solid natural manure by appropriate machinery. Nothing ever is or can be lost; those gases which would, if produced in cesspools or open tanks, be offensive to the last degree, are yielded (when under water, and acted upon by vegetable matter) to the atmosphere in a state qualified to enrich the earth and feed the plants that the wants of man and animals require.

I hope the foregoing remarks, offered with a view to extend truth, will be perused with a spirit of candour corresponding to that in which they are written.

Croydon, Dec. 12.

ON THE USE OF ARSENIC IN AGRICULTURE.—POISONING BY ARSENIC, AND SYMPTOMS OF CHOLERA.—THE POSSIBLE EFFECT OF THE GAME LAWS.

SIR,—In these days of alarm respecting cholera, any facts suggesting an occasional and hitherto unsuspected source of gastric irritation cannot fail to prove interesting to the medical practitioner; and as the circumstances I am about to communicate have an important bearing, not only upon the sanitary condition of our population, but upon the whole question of poisoning by arsenic, I need make no apology for laying them at once before the profession.

For some months past, in certain parts of Hampshire, partridges have been found dead in the fields, presenting a very remarkable appearance. Instead of lying prostrate on their sides, as is usually the case with dead birds, they have been found sitting with their heads erect and their eyes open, presenting all the semblance of life. This peculiarity, which for some time had attracted considerable attention among sportsmen in the neighbourhood, led to no practical result until about ten days ago, when a covey of ten birds having been found nestled together in this condition, two of the birds, together with the seeds taken from the crops of the remaining eight, were sent up to London for examination. I was requested to undertake the investigation, and the result of my experiments I will now briefly detail.

I first examined the seeds taken from the crops of the birds, and detected, as I anticipated, a large quantity of arsenic. I will not take up your valuable space by detailing the various steps of my analysis; suffice it to say, that by Reinsch's process I speedily obtained a very thick incrustation of metallic arsenic; that I then applied the reduction test, and subsequently Marsh's test, and the tests of the ammonio-nitrate of silver and the ammonio-sulphate of copper, each of which gave its characteristic result.

Having thus ascertained the presence of arsenic in the food of the partridges, I proceeded to examine the birds themselves. They were plump and in good condition,

but the œsophagus was in both cases highly inflamed throughout. The intestines were not inflamed, and presented no trace of ulceration, but they were remarkably empty and clean, almost as if they had been washed with water. May not this have been the result of diarrhoea?

I now, at the suggestion of my friend, Mr. Stone, proceeded to ascertain whether the flesh of birds so poisoned might not itself prove poisonous when eaten, and with this view I carefully cut the flesh off the breast and legs of one of the birds, and gave it, together with the liver, to a fine healthy cat. She ate it with avidity, but in about half an hour she began to vomit, and vomited almost incessantly for nearly twelve hours, during the whole of which time she evidently suffered excessive pain. After this, nothing would induce her to eat any more partridge. I kept her without food for twenty-four hours, but in vain; she resolutely refused to touch an atom more of the bird. This being the case, I gave her some beef and some milk, which she eagerly swallowed, proving beyond doubt that her instinct, and not her want of appetite, induced her to forego the dainty meal which had just been offered her.

I now felt satisfied, from my observation of the symptoms induced in the cat, borne out as they were by many facts we are acquainted with respecting the action of poisons, that the arsenic which the partridges had swallowed had been absorbed in sufficient quantity into the system to render the flesh of the birds poisonous, and to induce poisonous effects in any one partaking of it. However, I was anxious to leave nothing to hypothesis, and as the cat had so soon rejected by vomiting the greater part of the bird she had eaten, and pertinaciously refused to repeat the experiment, by again partaking of the poisoned food, I was obliged to have recourse to chemical analysis, with the view of ascertaining with certainty the existence or non-existence of arsenic in the flesh itself. I therefore cut the flesh off one side of the

breast of the other partridge, and after about an hour's boiling, I obtained by Reinsch's process a thin incrustation of metallic arsenic, thus demonstrating beyond question that the previous experiments had left little room for doubting. I was now anxious to ascertain the source of the poison, and a very little inquiry served to satisfy me on this point. I will not stop to go into many details which, though in themselves exceedingly interesting, have no direct bearing upon the question at issue. I will simply mention the leading facts—viz., that in Hampshire, Lincolnshire, and many other parts of the country, the farmers are now in the habit of steeping their wheat in a strong solution of arsenic previous to sowing it, with the view of preventing the ravages of the wire-worm on the seed, and of the smut on the plant when grown; that this process is found to be eminently successful, and is therefore daily becoming more and more generally adopted; that, even now, many hundreds weight of arsenic are yearly sold to agriculturists for this express purpose; that although the seed is poisonous when sown, its fruit is in no degree affected by the poison; that wherever this plan has been extensively carried out,* pheasants and partridges have been poisoned by eating the seed, and the partridges have been almost universally found sitting in the position I have already described; and lastly, that the men employed in sowing the poisonous seed, not unfrequently present the earlier symptoms which occur in the milder cases of poisoning by arsenic. This last fact I give on the authority of Dr. Heale, who up to the last two or three years practised at Staines, and has repeatedly had men under his care, suffering from symptoms due to this cause.

Now, the facts just enumerated suggest several most important points for consideration. It is notorious that many of the dealers in game are supplied through the agency of poachers and others who have a direct pecuniary interest in supplying them with the largest possible number of birds. It is certain, moreover, that if men of this sort were to find a covey of partridges in a field, dead, but fresh and in good condition, they would not hesitate to send them with the remainder of their booty to the poulterer, who would as certainly, without suspicion, sell them to his customers. And after the experiments above detailed, there can be no reasonable grounds for doubting that these birds, when eaten, would produce disagreeable and injurious—not to say

poisonous—effects on those who partake of them. It is obvious, therefore, that in all cases of supposed cholera, or of suspicious belly-ache, occurring at this season of the year, we shall do well to make particular inquiry as to whether our patient has recently partaken of pheasants or partridges purchased at a poulterer's; and it is further manifest, that in all cases of poisoning or suspected poisoning by arsenic, the fact of the persons having lately eaten of partridges and pheasants must form an important element in the inquiry, and must tend to cast a suspicion on the evidence adduced to prove a criminal intent in the administration of the poison. So that, in a medico-legal point of view, the question is one of the gravest import.

Secondly.—If it should prove, on further inquiry, that the practice of steeping seed wheat in arsenic is, even indirectly, productive of injurious effects on our population, it may become, in these days of sanitary reform, a matter for the anxious consideration of the legislature, whether they should not adopt some measures to prevent the continuance of such a custom.

Thirdly.—As in the event of a practice so destructive of game becoming universal, pheasants and partridges, in their wild state at least, must, at no distant day, become extinct in this country, it is a question whether landlords may not henceforth be induced to insert a clause in their leases, prohibiting the use of arsenic on their farms; while, on the other hand, it may be a question with those who are already weary of the protracted debates on the game laws, whether they should not allow them to die a natural death, by the gradual but inevitable destruction of the game it is the object of these laws to preserve.

I am, Sir, your obedient servant,

HENRY WILLIAM FULLER,
Assistant Physician to, and Lecturer on Medical
Jurisprudence at, St. George's Hospital.

Half Moon Street, Piccadilly, Dec., 1848.

[Having received the above communication only a short time previously to going to press, we have, at some inconvenience, published it this week, as, in a medico-legal point of view, it refers to a subject of very great importance. The facts which Dr. Fuller has elicited with so much scientific tact and sagacity will form very important additions to our works on state medicine. —ED. L.]
—Lancet.

CONSTRUCTION OF LEASE—CROPS.

NORTH v. WILLIAMS. NOV. 7 and DEC. 1. JUDGMENT.

POLLOCK C. B.—This was an application for a new trial, on the ground of evidence being refused touching the meaning of the word "crops." The question arose on a farming lease, in which the word "crops" occurred; and in reference to one of the covenants, Mr. Martin proposed to call witnesses to prove that a particular covenant, with reference to not taking more than so many crops meant *white* crops, and not crops generally; and

* In a review of Mr. Taylor's work on Poisons, in the last October volume of *The British and Foreign Medico-Chirurgical Review*, the reviewer states, that "in the spring of 1846, a great number of pheasants having been found dead in their preserve, their crops were removed and sent to us for analysis, and with them some young wheat, about six inches high, which had been grown from poisoned corn, and on which it was suspected that the birds had fed. The earth about the roots of the plants yielded distinct traces of arsenic, but the leaves were perfectly free from it."

my brother Creswell, at the trial, refused to receive the evidence. Mr. Martin applied to the court, and obtained a rule to show cause, and we took time to consider. We have conferred with my brother Creswell, and looked at the lease, and it appears to us perfectly clear, from the language of the lease, that the word "crops" is used in the lease in its ordinary and popular sense, and as including any crops; as we find the expression, "crops of turnips," spoken of as well as "wheat crops," and crops of beans and other produce. It appears to us, therefore, that the lease, speaking for itself, shows that the word "crops" was meant to include turnips as well as wheat crops. We think that the evidence was properly rejected, and that there ought to be no rule for a new trial.

TO THE EDITOR OF THE MARK LANE EXPRESS.
SIR,—The above is copied from the "Law Times" of

the 9th instant, from which it will be seen that the application for a new trial was refused, and that the rejection of evidence at York to prove what was the real meaning of the word "crops," as inserted in the lease, was proper; though had such evidence borne out the statements made by Mr. Martin in his opening address to the jury (special), I have reason to know that they were unanimously of opinion that the plaintiff was entitled to a verdict.

Now, sir, as the above decision is so directly contrary to the generally received opinion entertained by practical farmers, and as it may on future occasions be referred to as good legal authority in matters affecting their interests, it may be as well to call their attention to the nature and wording of their agreements, and thereby, if possible, avoid such expensive litigation as the unintentional omission of a word might occasion. I am, however, far from supposing that there are many landlords who would take any undue advantage under such circumstances; but, however liberal and just they may generally be, it would be better that in all agreements between themselves and their tenantry, that the different clauses should be clearly expressed, containing nothing of a doubtful or ambiguous tendency, calculated to create disputes, where a mutual feeling of good will is so essential to the interests of both.

In this case, I may state that the tenant was entitled by his lease to be paid half the original cost of what bones were used upon a certain portion of his farm upon quitting, where he had not grown or was entitled to grow a second crop; therefore, the whole dispute turns upon whether turnips, consumed upon the land where grown, are or are not to be considered a crop, and stand in the same place as a crop of wheat or any other grain remaining upon the land to ripen, and then be cut off and taken away.

C. B. Pollock says, from the language of the lease, that the word "crops" is used in the lease in its ordinary and popular sense, and as including any crops; as we find the expression, "crops of turnips," spoken of as well as wheat crops and crops of beans. On the same principle, the learned Chief Baron might readily overthrow the Copernican system, in the absence of evidence, by stating that we have conferred with brother Creswell and looked in the almanac, and it appears to us perfectly clear, from the language of the almanac, that the words, "rising of the Sun" are used in the almanac in their ordinary and popular sense; and as we are satisfied, from actual and daily observation, that the length of day and night, and the time of high water at London Bridge, are accurately given in that almanac, we think that the evidence was properly rejected. Many other instances might be adduced to show that the ordinary and popular language made use of does not always convey a correct idea of the subject spoken of; and perhaps, in few instances, can that be better illustrated than by calling, in ordinary and popular language, turnips consumed upon the ground a "crop." Were they taken from the land as are the crops of corn, or did they remain to perfect their seed, then might they be properly denominated a crop; but when they are cultivated at an expense often exceeding their real value, for the express purpose of meliorating and improving the condition of the soil upon which they are grown, and preparing it for the growth of a crop of corn, whatever may be the ordinary and popular designation, they are more lawyers than farmers who would place them in the same category with wheat, or beans, or oats, or barley, when, in truth, they are only a preparation for these crops, as much as fallowing and manuring, or depasturing grass seeds, tares, or any other green preparatory crop.

To practical farmers another word need not be added further than to remind them of the situation in which

they are placed with regard to their off-going crop, if turnips consumed upon the land be a crop, according to the judgment given in this case, which puts them in the place of a crop of corn. Why, it may be asked, are not depastured grass seeds to be considered an equivalent for a crop of corn? Merely, it may be answered, because the ordinary and popular language of the day does not assign to them the name of a crop, and because high judicial authority, as in this case, has confirmed this opinion, so that in future the action must be suited to the word, and not the word to the action.

Your constant reader and obedient servant,

A FARMER.

FARMING STOCK.—THE LAW OF DISTRAINT.—A case was argued in the Court of Common Pleas on Thursday week, in reference to the law of distraint on farming stock, which involved a decision of the Court that cannot be too generally known. The facts are briefly these:—A distress had been levied by the tithe impropriator in satisfaction of arrears of rent, and a wheat-rick was seized. At the last assizes for Salop, the owner of the rick brought an action for compensation, the tithe impropriator having severed the straw from the corn, and sold the latter only; the verdict, however, went for the defendant, and the matter was now brought before the Court on the ground of excessive distress, and that the defendant ought also to have sold the straw. The rent-charge, it seems, in arrear was £39; the rick seized and sold was worth, with the straw, £60; the corn severed from the straw sold for £42. Counsel contended that the seizure of the whole rick, worth £60, was an excessive distress, and that the defendant ought to have seized a smaller rick, or have taken a moiety only of the rick seized, and not sold the whole. The Court in giving judgment, said the evidence did not support the count for an excessive distress. The statute of Marlbridge, which gave the remedy for an excessive distress, pointed to cases of flagrant abuse; and in Lord Coke's notes upon this statute an instance was mentioned of the seizure of several oxen as a distress for Id. The landlord was only bound to use reasonable caution. He was authorized to seize as much as any reasonable man would think adequate, and not excessive. Here it appeared there was more than one rick of corn on the premises, but the value of the other ricks was not given. If a small rick would satisfy the distress, and a large one had been seized, undoubtedly the defendant would be liable on the second count. Here the rick, straw and corn together, were worth £60; the rent in arrear was £39, and the expenses of the sale would be some few pounds. There was a question whether the straw could be sold or not. The titheowner seized the whole, as he was justified in doing, it being one entire thing, and he was justified in severing it and selling a part sufficient to satisfy his rent in arrear, and leaving that portion which was subject to question untouched. It appeared to the Court that there was no ground for saying that this was an excessive distress, and there was no ground for entering the verdict for the plaintiff on that count.—Rule refused.

We do not think it has been made generally known that the day upon which the cattle will be required to be in the yard of the Smithfield Club next year has been altered from Monday to Saturday; the object being to prevent the necessity, heretofore imposed upon many persons, of travelling and bringing up the animals on the Sunday. The managers of the London (Islington) Cattle Market have announced Tuesday as the day upon which the market shall be held instead of Monday; it having been a source of regret and annoyance to many persons that they should be compelled to desecrate the Sabbath through the cattle market at Smithfield being held upon the Monday. All persons who desire to see this object attained, and that the Sabbath should be observed as it was intended, should give their support to the London Cattle Market.

METEOROLOGICAL DIARY—1848.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.		
Day.	8 a. m.	10 p. m.	Min.	Max.	10 p. m.	Direction.	Force.	8 a. m.	2 p. m.	10 p. m.
	in. cts.	in. cts.								
Nov. 21	29.67	29.60	44	50	43	S. West	lively	fine	sun	fine
22	29.37	29.20	43	51	47	Southerly	lively	cloudy	cloudy	cloudy
23	29.20	29.21	45	51	45	S. by East	lively	cloudy	sun	cloudy
24	29.63	30.00	40	46	35	N. by West	gentle	cloudy	sun	fine
25	30.07	29.98	30	44	44	South	rising	fine	cloudy	cloudy
26	29.87	29.87	43	54	47	S. West	calm	fine	sun	cloudy
27	29.70	30.07	44	50	45	West	gentle	cloudy	sun	cloudy
28	30.08	30.02	44	50	44	S. West	id. fresh	cloudy	cloudy	cloudy
29	29.90	29.76	49	52	50	S. West	very brk	cloudy	cloudy	cloudy
30	29.90	29.88	40	51	43	S. West	lively	fine	cloudy	cloudy
Dec. 1	29.69	29.47	39	46	45	W. S. W.	liv. high	cloudy	cloudy	cloudy
2	29.38	29.53	36	44	35	W., N. West	lively	fine	sun	fine
3	29.77	29.61	32	44	45	S. by West	strong	fine	cloudy	cloudy
4	29.30	29.13	40	49	41	South	strong	cloudy	cloudy	fine
5	29.00	29.25	39	45	40	S. West	brisk	fine	cloudy	cloudy
6	29.30	29.38	40	47	41	S. West	strong	fine	cloudy	cloudy
7	29.55	29.68	41	52	50	S. West	brisk	cloudy	cloudy	cloudy
8	29.79	30.01	49	53	51	S. by West	lively	cloudy	cloudy	cloudy
9	30.16	30.22	42	54	54	S. West	liv. calm	fine	sun	fine
10	30.27	30.18	47	57	47	Southerly	gentle	fine	sun	fine
11	30.17	30.17	43	54	47	S. West	gentle	fine	sun	fine
12	30.17	30.12	46	52	49	S. West	gentle	cloudy	cloudy	fine
13	30.03	30.00	47	55	49	South	lively	cloudy	cloudy	cloudy
14	29.80	29.80	43	51	48	S. S. West	brisk	fine	cloudy	fine
15	29.80	29.78	44	52	49	E. S. East	lively	cloudy	cloudy	cloudy
16	29.81	29.75	43	44	40	E. by North	gentle	cloudy	cloudy	cloudy
17	29.87	29.95	37	47	41	E.,—E. by S.	gentle	fine	cloudy	cloudy
18	29.88	29.73	39	48	46	Southerly	gentle	fine	sun	cloudy
19	29.78	29.98	43	47	42	Easterly	gentle	cloudy	cloudy	cloudy
20	30.12	30.27	41	43	31	E. by North	lively	cloudy	cloudy	fine
21	30.30	30.30	27	34	29	E. by North	lively	fine	sun	fine

ESTIMATED AVERAGES OF DECEMBER.

Barometer.		Thermometer.		
High.	Low.	High.	Low.	Mean.
30.32	29.120	55	17	39.3

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Highest.	Lowest.	Mean.
49.	41.3	45.14

WEATHER AND PHENOMENA.

Nov. 21—Fine day; evening changeable. 22—Wet over night; cloudy day. 23—Rain after sunset. 24—Clearing; cool and fine. 25—Rime; cloudy afterwards; rain. 26—Fine sunny day, after wet and windy night. 27—Much the same. 28—Fresh drying day. 29—Overcast; small rain. 30—Changeable, after bright forenoon.

LUNATION.—New moon Sat., 25th day, 9 h. 30 m., night.

Dec. 1—Overcast; gleams wind. 2—Heavy rain over night; fine cool day. 3—Frost; rapid change; rain. 4—Cloudy; furious wind and rain; 5—Rain over night; fine day. 6—Changeable; fierce wind and sharp shower. 7—The same; more showery. 8—Very rainy and windy. 9—

Fine in general. 10—Fine as spring. 11—Still fine, but with stratus and cumulous clouds. 12—Overcast; clear evening. 13—Beautiful throughout. 14—Masses of clouds form; a little rain. 15—Sharp rain with wind; finer night. 16—Entirely wet, with driving wind. 17—Fine till noon, then overcast. 18—Fine; cloudy afternoon. 19—Generally overcast. 20—Cold chilly day; night clear and frosty. 21—Perfectly fine.

LUNATIONS.—First quarter, Dec. 3rd, 8 h. 6 m. afternoon. Full moon, 10th day, 11 h. 44 m. before noon. Last quarter, 17th day, 11 h. 13 m. before noon.

REMARKS REFERRING TO AGRICULTURE.—The equability of temperature throughout this period of 31 days is remarkable as to its mildness. As a whole the season has been rainy, but there were fine intervals which were sufficient to insure the seeding of the breadths devoted to wheat. The young plant appears to me very healthy, and the mild weather has afforded it an opportunity to grow and establish itself. All other crops hereabout are abundant and fine. Frost appears to have set in for a time, and I close this notice on the shortest, but certainly the brightest day of the winter.

Croydon, Dec. 21.

J. TOWERS.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR
DECEMBER.

We consider the weather of the month just concluded to have been seasonably fine in every particular. It is scarcely desirable to have a very mild temperature at this period of the year, yet it is to be remarked, that although the atmosphere was extremely open from the 1st till about the 19th, with the wind vibrating between the south and west, a much less quantity of rain fell than might have been expected. Vegetation in general—the young wheat plants in particular—had all the freshness of an early spring; but the sudden appearance of a somewhat severe frost, from eight to eleven degrees, speedily changed the whole face of the vegetable creation. Had it continued for any length of time, without a fall of snow, it might possibly have had a prejudicial effect upon the wheats. However, another change, equally as sudden as the first, took place on the 24th, since which day we have enjoyed almost a May temperature.

From nearly all parts of England we have been favoured with communications respecting the progress made in out-door farm labours, as well as upon the subject of other matters equally important to the interests of the agricultural body, to which we shall presently direct particular attention. By some of our correspondents the past is not considered a good seed time, from the many interruptions it has experienced from the continued dampness of the soil. Their observations may, however, be considered as exceptions to the remark that, taken as a whole, the heavy wheats have been sown under somewhat favourable auspices, as we find that no serious difficulty has presented itself in cultivating the soil under the usual "courses" or "shifts." Another point of perhaps greater importance than usual, may be considered the stocks of wheat at this time on hand in our various large grain districts. Taking their "text" from certain remarks which have lately found their way into print, and which are to the effect that a serious deficiency exists in all quarters, some parties have jumped to the conclusion that an advance in the price of both English and foreign wheat is close at hand. We are ready to admit that the acreable yield of the new wheats in the whole of our southern, western, and some of the eastern and midland counties exhibits a considerable falling off, both as to quantity and quality; but, at the same time, we must not forget that in most other por-

tions of England, including Ireland and Scotland, there is a slight excess in the supply. If to this we add the continuous arrivals from abroad, and the comparatively large stocks of foreign wheat in warehouse, awaiting the abrogation of the import duties, it must be tolerably evident—especially as speculation, in the strict sense of the term, is rapidly giving place to a regular trade in corn—that no rise worthy of special remark can be reasonably expected between this and the close of February. The soundness of the doctrine of free trade in corn has yet to be tested. What its ultimate effect upon prices may be, it is not our province here to inquire. We may, however, observe, without fear of contradiction, that an immense consumption, certainly, in excess of the home production—as is proved by the fact that upwards of *one hundred thousand quarters of foreign grain and flour have been consumed weekly in the United Kingdom during the whole of the year 1848*—is going on. The yield of spring corn is by no means so heavy as was at one time expected; hence the bulk of the imports from abroad has gone into consumption. It would appear, as we hinted some months since would probably prove to be the case, that the losses sustained by the potato disease have been unnecessarily enlarged upon. Potatoes unfit for consumption are to be met with everywhere, yet the markets have been well supplied at moderate prices. Our continental neighbours have sent us supplies to an extent which could be scarcely calculated upon. Into London alone UPWARDS OF SEVENTEEN THOUSAND TONS of potatoes have been received since our last report, and which, as might be expected, have had a depressing influence upon the demand, and caused a somewhat considerable reduction in the quotations. How long these importations will continue, it is impossible for us to say; but it is quite evident that the foreigner has paid great attention to potato-growing during this and the preceding year, for the purposes of shipment. The moderate price of bread has greatly interfered with the consumption of potatoes, and certainly tended to check—even in the absence of supplies from France, Holland, &c.—any serious rise in their value. From their dry and somewhat superior quality, the foreign potatoes, though generally small, have found considerable favour with the dealers living in poor localities; hence nearly the whole of the supplies have been worked off, without the vessels

having been placed under demurrage. Very superior samples of home-grown potatoes have sold as high as 160s., foreign qualities having gone as low as from 40s. to 90s. per ton.

Most graziers have suffered to some extent from the prevailing epidemic. It is, however, obvious that the virulence of the disease has received a wholesome check, the actual losses having been less than we have had occasion to notice at some previous corresponding periods of the year. The stocks of hay, roots, &c., having been heavy, and of excellent quality, the grazing community have been enabled to keep a somewhat larger number of beasts upon their farms than usual, at a comparatively moderate cost: indeed, we have the best authority for stating that the supply of that description of stock at this time in the country has been on the increase to some extent during the present year. Sheep are an exception; and we conceive that some time must of necessity elapse ere the sacrifices made in 1844 will be made good. During the approaching spring, store beasts will doubtless be obtainable at low prices. On the other hand, we may expect rather a high value for store sheep, notwithstanding the immense numbers which are almost daily arriving from abroad.

The leading fat-stock shows have, in spite of the efforts of a certain clique to write them down, passed off extremely well. Animals of somewhat less bulk than usual have been exhibited, but this falling off has in no way detracted from their general importance. In most instances the number of both beasts and sheep, as well as of pigs, has increased, and we have observed the most favourite points brought out in fully their usual perfection. The stock markets, from the immense supplies exhibited, have been in a very depressed state for beasts, at unusually low prices, and, as a consequence, great losses have been sustained by the graziers. In the value of other kinds of stock—the numbers of which have decreased—we have no material change to notice: if anything, it has been on the advance.

The pressure of large supplies of foreign flour, as well as most kinds of grain, upon our markets has produced some heaviness in the corn trade. Prices, almost generally, have been on the decline, although the millers have held rather light stocks. On the 5th of December the bonded supplies of foreign consisted of 266,060 qrs. of grain, and 87,213 cwts. of flour and meal. These quantities bear but a small proportion to those at the present time on hand—free as well as under lock—as most of the importers, from the duty on wheat having advanced to 7s. per qr., have come to the determination of bonding their future arrivals till the present duties shall have run out.

Advices from Ireland and Scotland represent the sale for wheat and other produce as in a very inactive state. Some extensive importations of the lower kinds of foreign grain having taken place, the consumption of potatoes has been greatly interfered with. The “outward” shipments have been trifling in the extreme, owing to the low prices ruling in England; and we are of opinion that they will be small during the greater part of 1849.

In London and elsewhere, the demand for both hay and straw has continued in a very unsatisfactory state, at a low range of currency. The best meadow hay has sold at from £3 10s. to £3 15s. per load.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

The prominence invariably given to the cattle trade during the month of December, by the holding of our numerous and well-regulated fat stock shows, would appear a matter deserving of a lengthened commentary from us at this particular moment. We purpose, however, confining ourselves more to general remarks, from the difficulties experienced in detailing the merits of the several exhibitions in a given space. First in importance—as a great reflux of the whole country, a remark borne out by the number and quality of the stock brought together at the local shows—we may refer to the exhibition in Baker-street. The condition of the animals was unquestionably first-rate, notwithstanding there were fewer “bulky” short-horns amongst them than we have been accustomed to witness. The object of the owners appears to have been not to produce the bulkiest animals, but to produce in each the largest quantity of meat for human consumption. That that object has been gained, must be evident to all who visited the show-yard. The re-arrangement in the classes for beasts—the doing away with the restriction as to feeding—has afforded considerable satisfaction; and it is gratifying to observe that the prospects of the Club were never more satisfactory than at this time. Turning from the show-yard to Smithfield market, we, in common with most other persons, cannot but express our astonishment at the splendid collection and the immense number of beasts shown there on the great day. It would appear almost invidious for us to particularise any breed of beasts: yet the crosses—varying from 2 to 5—shewn as the property of Mr. Hay, of Shethin, Aberdeenshire, may be pointed out as proving the accuracy of that gentleman's judgment in crossing with the pure bull. A more splendid lot of beasts than those to which we have referred we have seldom, or never, witnessed in any open market. As the supply

greatly exceeded the wants of the butchers, considerable heaviness in the trade was the result, and with it miserably low prices. The large numbers turned out unsold had a most prejudicial effect upon the demand in the subsequent week, and which only partially recovered itself on the 25th, on which day prices were somewhat on the advance. A steady, but by no means large, business has been doing in sheep, calves, and pigs, at very full currencies. The foregoing observations may be equally applied to the trade in the principal country markets.

For the time of year the imports of live stock from abroad have been extensive. In the quality of the foreign beasts we have scarcely any improvement to notice. The sheep and calves have mostly come to hand in full average condition. The arrivals into London during the month have been as under :—

Beasts	2,401	Head.
Sheep	9,334	
Lambs	111	
Calves	492	
Pigs	8	
Total	12,346	
Corresponding month	} 11,028	
in 1847		

The importations at Hull, &c., have not exceeded 2,900 head, chiefly beasts and sheep.

The annexed statement shows the total supplies exhibited in Smithfield :—

Beasts	19,016	Head.
Cows	490	
Sheep	87,240	
Calves	1,113	
Pigs	1,549	

COMPARISON OF SUPPLIES.

	Dec., 1847.		Dec., 1846.
Beasts	18,978	....	19,639
Cows	500	....	520
Sheep	101,720	....	108,610
Calves	1,240	....	1,095
Pigs	2,765	....	2,150

The past month's quotations have ruled as under :

	Per 8 lbs. to sink the offal.			
	s. d.		s. d.	
Beef .. from....	3	4	to	4
Mutton	3	8	5	0
Veal	3	10	4	10
Pork	3	8	4	8

COMPARISON OF PRICES.

	Dec., 1847.				Dec., 1846.				
	s. d.		s. d.		s. d.		s. d.		
Beef .. from	3	6	5	10	....	2	10	4	6
Mutton	3	8	5	4	....	3	8	5	2
Veal	3	8	4	10	....	3	8	4	8
Pork	3	6	5	2	....	3	6	4	10

Newgate and Leadenhall markets have been very heavily supplied with both town and country-killed

meat; nevertheless a very extensive business has been transacted, owing to the comparatively low prices demanded by the salesmen, and clearances have been mostly effected. Beef has sold at from 2s. 6d. to 3s. 8d.; mutton, 3s. 2d. to 4s. 4d.; veal, 3s. 8d. to 4s. 8d.; and pork, 3s. 6d. to 4s. 4d. per 8lbs., by the carcass.

Our accounts from most of the large grazing districts are somewhat more favourable as respects the general health of the stock.

NORTH NORTHUMBERLAND.

The season having now advanced so far, that if we have not seen the deepest gloom of winter, we at least have arrived at the era of time "when darkness broods over the face of the earth," and this season, the shortest days falling with the change of the moon, in the absence of a serene atmosphere we have limited time for out-door avocations. In general, however, farm work is in a forward state; the exceptions, generally, are where the tenant is quitting (in Northumberland the time for quitting farms is almost universally May 12, or March 25), and it is only in partial instances where the out-going tenant has either the confidence or resolution to plough up the succeeding fallow break; hence, wherever we see a white stubble not yet come under the plough, it is where the land is either in the market, or the tenant is "like one of the pests of society," awaiting reply from his landlord or agent from an application for reduction of rent, or renewal of contract. Be this as it may, we condemn the system and hope shortly to see it finally set aside. Whether a man renews his covenant or not, surely the successor is blind to his own interest if he refuses to pay for the working up the land for turnips, or even naked fallow, which reaps all the benefit of a winter's pulverizing, and also saves him from the baneful, obligatory, and always uncertain resource of a *ploughing day*. Having deviated perhaps too much from our usual routine, our observations regarding the present and future prospects of the yield of the late produce of the soil, and preparations for an ensuing crop, must necessarily be curtailed. Our opinion remains firm, that the productions from the late harvest will fall short in quantity on the thrashing floor, over all the cereal crops, taking the entire northern district of the county into calculation; while for the forthcoming year wheat sowing has been freely carried forward for a period of fully six weeks, whenever wind and weather would allow the plough or harrow to work, and even up to this (the shortest day), wheat sowing is far from being completed. Our reports are never depending on inquiry or *hearsay* evidence, but from actual observation; and we can attest that on one farm, on the 16th inst., no less than 140 acres of naked fallow were then unseeded, while over a widely extended district scarcely a blade is yet to be seen in braid. In our last report we noticed some land being sown in good order in the northern part of the county, all of which is now looking green and healthy. Should the weather continue mild and open, as it has done for three weeks past, we may yet hope the late sowings will realize fully to the expectation of the anxious husbandman. Turnips, when lifted, are short of acreage weight, and are disappearing very early from the field. In fact, the early October frost and snow annihilated the top, when the bulb was half grown; hence, they take very little trouble, either for carting off, or consumption on the land by sheep; our stock markets are consequently prematurely glutted with cattle and sheep in a half-fed state, and at present it seems as if

our great flockmasters were taken by a panic, when we see them forcing beef and mutton on the market at less cash by the carcass than they were severally purchased for in September and October. Such a state of things cannot long exist, yet without extra artificial food be liberally resorted to, we may look for overstocked supplies for a few weeks to come. Our principal corn marts being also freely supplied, prices of grain of all sorts have receded during the last month, until corn of ordinary quality is nearly unsaleable, fine runs of wheat selling at 5s. 6d. to 6s. per bushel. The demand for railway labourers having now subsided, many of the working classes are but partially employed. Draining to considerable extent is carried forward on some of the large estates; his Grace the Duke of Northumberland, Earl Grey, A. J. B. Cresswell, Esq., being the most notable. Drains are by piece work. Day labour, good hands, 2s., or 12s. per week.—Dec. 21.

WEST CORNWALL.

This month, thus far, like most of its predecessors in 1848, has received an over quantity of rain; notwithstanding this, the wheat tillages are nearly concluded, and the plant which was early sown, appears more vigorous than could have been anticipated. The next step for the farmer to take will be to consolidate the soil, so that the root of the wheat shall be embedded in firm soil, and resist the cutting and blustering winds we may expect in February and March, which are felt with great severity from our peninsular situation. The chief art in growing a healthy, strong plant, and causing it to tiller well in loose or light soils, is the fastening of the soil by kneading, to be followed in the spring by a heavy rolling. There is but little complaint of the rolling of the seed, which has taken place in other counties. The root crops are generally light, with an evident disposition to decay, arising from the moisture of the atmosphere at the period the first germ showed itself, and during its subsequent growth. Mangold is a short crop, patchy and irregular, owing to the partial germination of the seed in the dry May. Turnips are small, which (if in these uncertain times predictions are allowed) may tend to increase the price of meat in the spring; whether it comes or not, a rise in something is necessary, to excite the farmer to employ some of the hands at present idle, and to enable him to make an outlay of capital in artificial food and manure, with some prospect of being remunerated for the investment. Young clovers are looking well, and the general appearance of the country shows a good display of grass: this has been a leading feature since May, but the quality proves inferior. Sheep in rape, bullocks in old meadow grass, have put on less fat the last summer than for many years previously, and have paid worse, in consequence of the approximation of the prices between fat and lean cattle. Until lately the epidemic had not reached us: there are now some farmers in the neighbourhood of Probus whose beasts and flocks are suffering from it. "When sorrows come, they come not single spies, but in battalions." Under more auspicious circumstances the loss of bullocks or sheep would not be so severely felt, as the survivors paying well would materially reduce the real loss. The yield of grain in quantity and weight will not permit the farmer to allow it an average year, prices are quite unremunerative, and sales are effected with difficulty, with wheat at 5s. 9d. to 6s. 2d.; barley, 2s. 9d. to 3s.; oats, 2s. 4d. to 2s. 8d. per imp. bushel. Should this state of things continue, as some protectionists foretel, John Bull, as a farmer, must reduce the burly sides with which Mr. *Punch* clothes him, and instead of only working others, work himself also; the farming interest must become less bigoted, enterprise must more prominently mark the

farmer's career, and every member of the large body must prove a useful one. Jupiter would not assist the waggoner till he had first attempted to aid himself.—Dec. 16.

REVIEW.

A GUIDE TO THE HOUNDS OF ENGLAND.

Whitaker and Co., Ave Maria Lane. 1849.

This useful and elegant little work is appropriately dedicated to the hunting community of England, for whose service and entertainment it has been especially provided. The author, in his introduction, complains that the "sons of the chase" have "no work of reference, no guide to point out and expatiate upon" the several establishments and countries hunted by the *hounds of England*; and this deficiency it has been his object to supply. To collect and embody materials for a work of the kind must necessarily have entailed considerable labour, and, to treat it artistically required a hand thoroughly conversant with the subject; but that "Gélert" has done so effectively, and that his labour will be amply requited, we have the fullest confidence, inasmuch as many distinguished masters of hounds have expressed their high approbation of the work, and hunting men in general have given it a hearty welcome. Being clothed in scarlet, with a flying fox upon the cover, and embodying, as it does, a vast deal of information, it may truly be called attractive, inexpensive, and most serviceable to all who follow the chase.

THE SMITHFIELD NUISANCE.

TO THE EDITOR OF THE MORNING POST.

SIR,—Will you interfere with your powerful pen to put a stop to one of the direful nuisances in this metropolis, viz., the uproar and scenes of desecration which take place in Smithfield Market from Sunday afternoon to the Monday morning following? What with the incessant barking of dogs, the bellowing of the oxen and the calves, the bleating of sheep, the grunting of swine, the roaring and swearing of men with torches, passing to and fro amongst the frightened animals, and the continued sound of blows inflicted on the horns, heads, and bodies of the poor animals, produce an impression on the beholders that no person can adequately describe, and must be seen to be believed. The desecration of the Sabbath is bad enough, but parties who reside in any of the streets leading into Smithfield, from the confined space, are absolutely in danger of their existence, more especially the female portion, from the terror inspired by furious oxen; and surely the present deplorable state of things, as far as regards this nuisance in the heart of the City of London, cannot be much longer endured. Most certainly in no other city of the world would such abominations be suffered.

I remain, Sir, your most obedient servant,

AN INHABITANT OF WEST SMITHFIELD.

December 20.

CALENDAR OF HORTICULTURE.—JANUARY.

Dec. 18, 1848.—The retrospect of the weather and results is deferred till the end of the article, I therefore now only state that the season remains so remarkably mild that garden vegetables are growing, and in every particular are fine and abundant. It is to be hoped that the injurious alarm created by the worse than useless caution against the use of fruits and vegetables is passing away, and that our persevering, industrious market-gardeners will no longer be sacrificed to idle prejudices: their great expenses, high culture, and prodigious skill merit a far different reward.

OPERATIONS IN THE KITCHEN GARDEN.

The *potato*—it appears to me—acquires value just in proportion to the privation the country has experienced. We cannot, must not, relinquish it; and I feel assured that, by perseverance in a right direction, and by ceasing, for a time, to plant late varieties at the usual season, we shall succeed, and finally restore this nutritious tuber to its pristine excellence. Justice, therefore, requires that I should offer a few extracts from the pamphlet by Mr. Cuthill, of Denmark-hill, “*on the culture*” of the earliest potatoes, more especially as I have inspected his processes, and can attest the excellence of their final result. The weather and state of the land as to moisture must of course decide, but if both be favourable, the ground cannot be too speedily prepared. The ash-leaved kidney is the chosen variety, and upon the whole it has suffered comparatively little from the disease. Each well-greened tuber ought to be laid under the stage of a cool green-house, or in some cellar or potato-thatched house, where frost could not enter. The eyes would then, naturally, begin to stir about the 15th day, and so soon as the shoots become visible as much dryish mould should be sprinkled over the potatoes as would just cover them. For greater security, five or six inches of dry straw might be laid on the mould in the event of sharp frost. These preparatory steps are only needful when a very early crop is required; but otherwise the “greening” only is essential, with the total absence of long straggling shoots, induced by bad keeping, in dark, warm cellars, and moist pits. As to the ground, Mr. Cuthill says “it is prepared during the winter (very little dung being used) by trenching two spades deep, and laying it in ridges twenty inches from centre to centre. As soon as the ground is trenched I sow about two hundred

weight of salt, and about three bushels of soot over the ridges: this is the proportion to fifteen rods of ground.” The soil of Mr. C.’s garden, appeared to me to be a deeply worked, dark grey, garden earth, certainly not heavy or binding; and in every case a light sandy mould is to be preferred. Here we must stop till the season of planting comes round, only observing that the ridges are raised fully eight inches above the furrow between them. The quantity of salt appears to be enormous, being above one ton per acre; still as it is applied, perhaps six weeks before planting, every shower must carry it into the land, and finally into the subsoil.

Framing is now universally practised by the best gardeners, public and private; by it lettuces of all kinds, radishes, small salading, endive, mint, young carrots, cauliflowers, &c., are preserved and brought forward, as are likewise seedling cabbages. *Greens* of all kinds are liable to be injured, and even cut off by severe Christmas frosts; yet the market gardeners are on the alert, and never fail to have stock ready to plant out by the first promising weather. Hoops and mats—even fronds of fern, interlaced between lines of low sticks, will indeed preserve in moderate frosts, but they must fail to promote growth. *Winter spinach* is often mangled by small birds; a line of rough twine stretched an inch above the leaves will prove an efficient preventive.

Sow, in open weather, when the ground is favourable, a row or two of *spinach*, *spring radish*, *lettuce*, *parsley*, *horn-carrots*; of these there is a *Dutch* variety, which, when sown, produces small long carrots, but is very proper for drawing young. *Peas* and *long-pod beans* must now be sown for successional crops.

Earth-up carefully on each side every row of plants now growing, and stick the *peas* without delay. If *artichoke* plants have not yet been protected, let the directions lately given be attended to without loss of time. Look over the *cauliflowers* raised in frames, displace the decaying leaves and every weed; loosen the surface soil with a hand-fork. Do this in mild weather, and then give air to frames, and also to the plants under hand-glasses. About the middle of the month, if the ground be free from frost and the air genial, transplant young *cabbage* to succeed or make good those set-out in the past autumn.

Celery.—Any that is full-grown, the leaves being fresh and high above the ridges, may again be moulded up, with fine, well-broken earth, after

which the ridge-board, or other defence, can be replaced.

Digging, trenching, and ridging, in dry weather, can still proceed. A good sprinkling of powdered quick-lime (where the soil is deficient in its calcareous element) would be very serviceable, not only chemically, but as a great destroyer of small slugs. If lime be not required, a pound or two of salt scattered over each square rod (30½ square yards) of ridged or fresh-moved ground would destroy the slug, and convey alkaline salt (*i. e.*, soda and chlorine) to the land. We cannot expect that gardeners are as yet qualified to be analytic chemists, but the three ingredients just named are essentials; therefore a moderate application of such elements, and also of fine bone-dust, to yield phosphoric acid, must be advantageous, especially to plots which are perpetually subjected to routine croppings. Soot, also, is a capital adjunct; it contains muriate and sulphate of ammonia, decomposable oils, blended with a bulk of charcoal in the most minute state of division.

Forcing, in the vegetable department, includes the treatment of *mushrooms, cucumbers, melons, asparagus, sea-kale, and rhubarb*.

Of *mushroom*, the art consists in avoiding superfluous moisture and the presence of a gentle bottom heat, not to exceed 80 degrees, while that of the surface shall approach to 55 or 60 degrees, which would correspond tolerably with the average temperature of September, the natural season of our true *agaricus campestris*. A mushroom-house or thatched shed is preferable to any exposed beds, and we would substitute slate, as shelves, in lieu of wooden boxes. In such houses, &c., *sea-kale* and *Buck's scarlet* and the *Tobolsk rhubarb* could be grown fit for table at Christmas.

As to *asparagus* enough has been already said in former articles.

Leaves now mixed with a small proportion of rather fresh and lively stable-dung produce the best *hot-beds*. Prepare hot-beds for *cucumbers* early, for *melons* at the end of the month. *Pits* are to be prepared, which often are heated by hot-water pipes, by external linings, or by both conjunctively. The seeds are sown three or four in a pot of light dryish earth, an inch deep, pressing the points downward. Great care is required to regulate the heat of common-frame hot-beds; but in chambered pits there can be little fear of overheating or burning.

FRUIT DEPARTMENT.

Currants and Gooseberry bushes.—Commence pruning with the first mild and dry weather. Spur the former very closely, cut out old and ill-placed shoots, and shorten the leading new wood. With *gooseberry* plants avoid regular spurring; unless

the habit of the individual sort show that fruit buds do not form along the main shoots, but at the heel of a series of short laterals. Use the knife freely with the old wood, to keep up a constant succession of regular and open branches: avoid shortening those.

Apple and pear trees, on espaliers and walls.—Keep the leading branches in a straight, orderly direction, from eight to ten inches asunder, not shortening the leaders, unless they have attained their prescribed limits. Spur the bearers, cutting back to three or four full eyes; keep them close and compact. Treat the short, dwarf trees much in the same manner, and keep the branches regular and open.

Cherry and plum trees, with one exception, are pruned and treated as apples. The *Morillo cherry* is not properly a spur-bearer; therefore a succession of young, bearing shoots must be provided for, and the old, barren wood must be cut away.

Of *apricots, peaches, and nectarines* enough has been repeatedly said. All I would now insist on is, to avoid pruning till nature shall prove that growth is at hand: the trees and young wood are tender, and we would leave them untouched till the sap is prepared to heal the wounds. Whenever these trees are regulated, the ground should be neatly forked; and then, a board or two being laid in front of the wall, about eighteen inches in advance of it, spare glass sashes placed sloping, so as to cover the trees from top to bottom, would protect the choice fruit from frost far more effectually than nets, bunting, old flags, or mats. As glass is so cheap, why should not our gardeners avail themselves of their advantages? and sashes could very easily be safely fastened at top.

All kinds of fruit trees and bearing-berry shrubs can be planted at the end of January, provided the ground be thoroughly prepared and worked; then, after planting, mulched with three or four inches of long litter, half-decayed tree-leaves, or fern. To keep the moisture in, and the ground warm, is the grand consideration in these late removals.

Third week.—Now make cuttings of *currants* and *gooseberries*, and plant them deep in nursery rows.

The vinery, to produce *grapes* at the latter end of May and to Midsummer, ought to be started on the first day. Progressive increase of heat from 55 deg. is preferable to sudden high temperature; but great warmth *by night* becomes more and more out of favour with the best authorities. The late president, Thomas Andrew Knight, led the way to this judicious alteration. When in flower *vines* seem to demand the most powerful heat, with dry air by day, and an abatement of moisture; and this because the farina should be left dry, in a condition fit for dispersion in every way.

A PROPAGATION HOUSE,

One purely such, furnished with a tank, slated, and prepared with a bed of sand and charcoal for plunging, and heated by an economical hot-water apparatus, is a most desirable appendage to a good garden. In it every plant can be raised, and all the fine operations of propagation performed. All the other houses should be devoted each to their own particular object; and if we could induce gardeners to adopt the simple method of supplying their furnaces with air led from the house itself (which was described in a former number of last year), they would have at command all the chief advantages of the Polmaise system; without any of its expense, inconvenience, and doubtful results.

So much has, on many occasions, been urged, in reference to general cleanness in all the departments—to giving and taking off air in the greenhouse and pits—to protecting evergreens against the sun after snow, &c., &c., that it is now needless to enlarge our article on subjects of such moment.

Retrospect.—The general condition of the weather

since November 20 could not be mistaken. The land had been constantly soaked with rain-water at the close of October; fortunately the early days of November proved warm and sunny, and a few morning frosts occurred in that month, just sufficient to destroy the *dahlias* and *heliotropes*, to injure some *chrysanthemums*, and to bring down the leaves of *peaches*, *apricots*, and a few other trees, &c. The rain returned, and fell profusely throughout the greater part of December to this time. Saturday, the 16th, was thoroughly wet; but the wind became easterly, the high temperature was gradually reduced, and, after three days of cloud and gloom, the night of the 20th became bright, and the morning of *this* (the shortest) day has dawned with fully 7 deg. of frost (25 deg. F.). The barometer is high: and my instrument now marks 30 in. 30 cents.: we may therefore, perhaps, expect a few days' continuance of bracing weather.

JOHN TOWERS.

Mem. Hort. Soc. of London,

Croydon, Dec. 21. and Roy. Ag. Soc.

REVIEW OF THE CORN TRADE DURING THE MONTH OF DECEMBER.

In looking back to the past, the year 1848 does not afford many points on which to dwell with pleasure. To the British farmer the last twelve months have proved very disastrous: unfavourable seasons and undue foreign competition have combined to deprive him of the fair reward his industry and perseverance entitled him to calculate upon. The weather has, from the commencement, been singularly unpropitious, and the only wonder is that the crops did not turn out much worse than they have; this we attribute mainly to superior drainage and other improvements in cultivation, which, to a certain extent, have counteracted the injurious effects of almost incessant rain towards the end of the summer. The produce of grain of the United Kingdom must, nevertheless, be estimated as very defective in quality and quantity as compared with moderately good average seasons; and the only thing which could have compensated the grower for the shortness of yield would have been prices proportionate to the deficiency. We need not say how miserably farmers have been disappointed in this respect, and how unremunerating must have been the business of arable farming. About the time when the new wheat first came to market, good qualities of red were worth, at Mark-Lane, 54s. to

58s., and white 58s. to 65s. per qr. These comparatively high terms few were, however, fortunate enough to realize; the downward movement commenced almost immediately, and has continued with scarcely a check. It would give us great pleasure if we could hold out hopes of a better state of things for the future; but the prospect ahead is not particularly cheering, and the opening year does not commence very brightly for the British agriculturist. Low as prices of corn now are, holders appear to be fearful of a still further decline when the free-trade policy shall have been fully carried out, and all restrictions on foreign importations removed. The first of February is consequently looked for with a good deal of nervousness; and though we are inclined to think that the effect has already been in a great measure anticipated, still it must be confessed that under existing circumstances there is little chance of prices of grain improving at present. The fact that wheat might now be bought, at many of the continental ports, at something below 40s., and that there are parties willing to contract to deliver good sound qualities of red, weighing 61 to 62 lbs. per bushel, at 38s. to 40s. per qr., free on board in spring, when freights to this country and premiums for insurance will, of course, be lower

than at this season of the year, affords strong ground for doubting whether any advance can be calculated on. The future is certainly looked to with much distrust, and all parties engaged in the corn trade show far more anxiety to realize than to enter into fresh engagements. This disposition to sell, and the unwillingness to purchase more than absolutely necessary, have caused the extreme languor which has for some time prevailed in this branch of business. This, however, is indicative of prudence, and may be the means of effecting an improvement hereafter. No artificial support is afforded to prices by speculation, and the unprofitable result of the greater part of the importations from abroad has deterred and is likely to deter our merchants from sending out large orders for the purchase of corn abroad. It is, therefore, not unlikely that the imports may for some months to come be on a more moderate scale than they have been of late; in which case, the downward movement might be checked. But so little can at present be known of the workings of free trade, that an opinion on the probable range of prices must be almost wholly speculative.

The weather has not been favourable during the autumn for the different kinds of out-door work, still farmers have managed to get the seed in tolerably well. During the greater part of November and the first fortnight in December we had almost constant wet, which rendered the seeding of the land by no means an easy operation; about the 20th a sudden change took place, and for some days we experienced very sharp frost. The ground was full of water when the frost commenced, which cannot be regarded as favourable for the seed, and many parties already begin to predict ill consequences; we are, however, unwilling to anticipate evil, and, knowing the hardy nature of the wheat plant, do not apprehend danger from the sudden changes which the temperature has lately undergone. The appearance of the crop early in the spring will be sure to have great influence on the markets, as all parties are in general very sensitive and easily induced to enter into speculations when prices are low, particularly after so very defective a harvest as the last. Of the shortness of the yield, especially in the southern and western portions of the kingdom, there can be no manner of doubt; and, small as the deliveries of wheat have been up to the present time, we doubt whether farmers have as much remaining on hand as they usually hold at this time of year.

We have now enumerated the different matters for and against an improvement, and must leave our agricultural friends to judge for themselves whether it be the more prudent plan to take advantage of the winter months, during which the

foreign competition will be less active, to realize, or trust to the chapter of accidents for something to turn up in their favour.

The fluctuations in the value of wheat have not been very important during the month, and the transactions have been on so restricted a scale as to allow little scope for comment. At most of the markets in the agricultural districts business has been quite in retail, but sellers have not been very pressing, and prices have been better supported than at the large consuming towns, where the foreign supplies have come into more immediate competition. Taking the kingdom collectively, the fall in prices may, however, be estimated at 2s. to 3s. per qr. since the close of November. How this has occurred will be better explained by detailing the operations as they have taken place at Mark-Lane.

The trade, as already intimated, has throughout the month remained in a wretchedly depressed state; and with as short supplies of English wheat into the port of London as we almost ever recollect in the month of December, the value of that article has gradually receded. This has unquestionably been caused by the unwillingness which millers have naturally felt to hold stocks on the eve of the period when the trade in grain is to become totally free. The desire to meet the new order of things with as little on hand as possible has not been confined to the millers alone; but all parties having anything to dispose of have been alike anxious to realize, and there has been a constant pressure on the market. The first fortnight holders were tolerably firm; and owing to the extreme insignificance of the supplies of home-grown wheat, prices remained nearly stationary up to Monday the 18th; and even then the best dry qualities were not generally sold lower: the commoner descriptions (of which the bulk of what was on sale consisted), though offered at reduced rates, could not be placed. Good runs of red Essex and Kent wheat did not, on that occasion, bring more than 47s. to 48s. per qr., and some inferior lots were sold below 40s. per qr. The following Monday being Christmas, there was, of course, no market; and the operations have since been on so restricted a scale, as to render it a matter of no ordinary difficulty to quote prices. It may, however, be safely affirmed that the turn has been in favour of the purchaser; and that, where sales have been made, even lower rates than those named above have been taken. The very boisterous weather experienced in the early part of the month interfered for a time with the regular arrivals of wheat from abroad, and, for a week or two, the receipts into the port of London were comparatively small. No sooner, however, did the weather moderate, than vessels again began to drop in from

all quarters; and taking the total receipts for the month, we find that 50,000 quarters have come to hand. Only a small proportion of this supply has been entered for home consumption, the importers having mostly preferred to land in bond, with a view of entering at the nominal rate of 1s. per qr. in February. There has, however, been no scarcity of free foreign wheat, either new or old; and the country enquiry having been far from active, prices have receded to fully the same extent as the value of English has fallen. Owing, however, to the superiority of the quality of the former over the latter, quotations are not so low. Prime red Baltic, particularly Rostock, has at no period been sold below 50s. to 52s. per quarter, duty paid; indeed, some parcels have been held some shillings higher. French wheat has ranged from 44s. to 48s. red, and 46s. to 53s. white; and Hamburg, Rhine, and Brabant red, 46s. to 48s. per quarter, all duty paid. We have no means of arriving at the stocks of free foreign wheat in the kingdom; no official account being kept of the deliveries from granary, after the duty has been paid. That it has been going into consumption very freely, is proved by the insignificant quantities of English taken by the millers; still, judging from what we have been enabled to collect from the principal granary keepers, there must be something like 400,000 quarters at this port alone. Under lock we had only 196,131 quarters in the United Kingdom, on the 5th of December, of which 73,624 quarters were in London. The averages and the probable fluctuations in the duty have ceased to be of much interest, owing to the close approach of the period when only a nominal rate is to be levied on imports. The only change which has taken place is a rise in the duty on wheat from 6s. to 7s. per quarter.

We had, at the close of last month, a large quantity of foreign flour—principally French—at this port. Since then, further important arrivals have taken place from that country; and a considerable supply has, besides, reached us from America. These continued receipts have greatly interfered with the sale of flour of home manufacture; and the millers are beginning to call out loudly against the unfairness of admitting the manufactured article on terms corresponding with those levied on the raw material. There has, indeed, of late been some talk about petitioning Parliament on this subject; fears being expressed of the probable effects a free importation of Flour is likely to have on the meal-trade in this country. The town millers have certainly experienced great competition; and though the nominal top price has not been changed, households have been sold at low terms—say, good Norfolk, and similar qualities, at 34s. to 35s. per sack. Superfine French has been offered

freely, duty paid, at 40s., and the secondary sorts at irregular rates, varying from 34s. to 38s. per sack. The highest quotation for American flour is not now over 28s. per barrel, and other sorts may be had at proportionate rates.

The arrivals of barley, of home growth, into the port of London, have been on quite a moderate scale since our last, and the foreign supplies have not been particularly large. What was said at the time of harvest, relative to the inferiority of the quality of this grain, was not, it has since been proved, exaggerated; and really fine malting samples are, and have all along been, scarce. The depression in the corn trade has, therefore, had less effect on the value of barley than on that of other articles; and the best qualities have commanded fully as much money this month as in November—say, 34s. to 35s. per quarter. This has, however, been only the case as regards fine; the common sorts of barley having been quite as difficult to place as other descriptions of grain. Some of the imports from abroad are suitable for malting purposes; notwithstanding which, 30s. per quarter, duty paid, may be regarded as about the highest quotation for foreign. Grinding sorts have been offered at rates varying from 24s. to 28s. per qr.; the latter figure being only obtainable for sweet heavy samples. We have heard of offers to ship in the spring, at continental ports, at very low rates, which we consider to be against any advance on such sorts as are usually received from abroad; but the value of really fine English malting barley may be expected to be maintained.

Very little variation has taken place in prices of malt: the transactions in the article have not been by any means extensive, but the receipts having also been moderate, sellers have remained tolerably firm, and the business done has been at similar terms to those current when we last addressed our readers.

Oats of home growth have not come to hand freely, and the arrivals from abroad have fallen short of expectation; it being, however, the prevailing opinion that a good many vessels laden with this grain are at present on passage to this country from the continent, and that the shipments from Ireland are likely to increase, the dealers have throughout the month conducted their operations with extreme caution. The tendency of prices has therefore, notwithstanding the very moderate character of the receipts, been decidedly downwards, more particularly in regard to light and inferior qualities. The recent arrivals from Scotland have turned out much inferior in quality to the shipments made immediately after harvest, proving that the crops there were not saved much better than in the south. Some parcels have come to

hand quite hot, owing to the green and unripe manner in which they were harvested. Such have been almost unsaleable, and have been placed with great difficulty at prices varying from 17s. to 21s. per qr. Good Scotch feed have been sold at 22s. to 23s., and fine potato at 25s. to 27s. per qr. Irish oats have sold according to weight, say 40lbs., at 20s. to 21s., and 41 to 42lbs. qualities at 21s. to 23s. per qr. The smallness of the supplies of British oats has caused the consumption, for months past, to be in a great measure thrown on foreign, and the stocks of the latter at this port have undergone a material diminution. What now remains consists principally of secondary and inferior qualities, which may be bought at from 18s. to 20s. per qr. For shipment in spring the offers from abroad are at low prices—so low, indeed, as to render it very doubtful whether the British growers will derive any benefit by holding, and the Irish farmers are likely hereafter to feel the competition with foreign in our markets very severely.

So long as the mild weather lasts beans are but little required for horse feeding, and in the early part of the month the value of this article gave way 1s. to 2s. per qr. This decline has not as yet been recovered, but the demand has recently improved, and the turn has been rather against the buyer. Egyptians in warehouse were at one period offered, duty-paid, at 25s. per qr.; now they are again held at 26s., and some fine parcels at 27s. per qr. Good French may be had at 28s. to 31s. per qr., and very nice new English small beans at 34s. to 35s. per qr.

Though peas of home growth have come to hand sparingly, and the arrivals from abroad have not been so liberal as was the case last month, still prices have undergone a further depreciation. Grey and maple have maintained their value better than white, but the former sorts cannot at present be quoted higher than 35s. to 36s. per qr., and the latter have been offered at from 33s. to 36s. per qr. English, and 30s. to 33s. foreign.

In Indian corn, on the spot, there has been very little doing since our last; and it is a curious fact, that the article might be bought cheaper in granary here than it can be purchased floating, though in the latter case the buyer has the risk of the cargo arriving in bad or damaged condition. This may, however, be explained thus: in London this article is scarcely used, and to send it to Ireland would enhance the price, as working expenses, freight, &c., would have to be added; hence the Irish buyers prefer to purchase floating cargoes, as the captains of most of the vessels from the ports eastward of Gibraltar have orders to call at Falmouth, Cork, &c., for instructions as to the port

of discharging. For Galatz, to arrive, 3s. per qr., cost, freight, and insurance, has been asked, and one or two cargoes have, we believe, changed hands at 34s. per qr.

In conclusion, we shall say a few words relative to the position of the corn trade at those places abroad from whence we may hereafter look for supplies.

The weather appears to have been unusually mild all over the world, and the inland navigation remained open later than in ordinary years, not only in Europe, but likewise in North America. The latest accounts from the United States inform us that, owing to the canals and inland water-courses having remained free from ice, supplies were daily arriving from the west to the east, and that the stocks of bread-stuffs on the sea board had accumulated considerably. If, therefore, the British markets should at any time hold out an inducement to consign, shipments might be made.

At New York, on the 6th December, business in flour was dull, the supplies having exceeded the demand. The exports from thence from the 1st to the 30th of November had consisted of 233,681 brls. flour, 180,378 bushels of wheat, and 604,326 bushels of Indian corn. Common brands of Western Canal flour were then obtainable at 5 d. 25 c. to 5 d. 31¼ c., and good parcels at 5 d. 37½ c. to 5 d. 50 c. per brl.; superior lots were held relatively higher, owing to a preponderance of the lower grades. Wheat had not excited much attention, and Indian corn had rather receded in price.

From the Baltic no further shipments are now likely to be made until next spring. By the most recent advices, the navigation was still entirely free from ice, but most of the vessels had departed, and the shipping season was considered over. At Danzig good stocks were held, the arrivals down the Vistula that were much impeded by the want of water during the summer and autumn having come to hand subsequently. The last sales for export had been at 39s. to 40s. high mixed, and 37s. to 38s. per qr. for mixed.

From Rostock we learn that the farmers had begun to deliver wheat rather freely, and that the warehouses were fast being filled. The quality of the produce in that neighbourhood is not equal to that of average seasons, and few of the parcels brought forward have exceeded in weight 611bs., the major part being below 60lbs. per bushel. The lighter sorts might, we are informed, be bought so as to be put free on board in spring at 34s. to 35s., whilst for the heavier kinds prices equal to 36s. to 37s. per qr. had been firmly insisted on.

At Stettin prices were, by the last accounts, about the same as at Rostock.

At Hamburg some fluctuations have occurred in

quotations of wheat. At one time fine Upland was offered at 38s.; subsequently the price rose to 40s. 6d., and the last quotation was 38s. 6d. to 39s. 6d. per qr.

In the Dutch and Belgian markets good wheat might, about the middle of the month, have been purchased at 38s., but since then 40s. per qr. has become the current price.

In France the value of the article has also risen a trifle of late, and neither wheat nor flour could at present be imported from thence at a profit.

At several of the Mediterranean ports large supplies of wheat had arrived from the Black and Azoff Seas. Most of the vessels had been directed to proceed to Great Britain, and we may calculate on receiving some quantity from ports lying east of Gibraltar.

At Marseilles the price for Polish Odessa was 37s., and for Romelia 32s. per qr., free on board on the 6th December.

CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white	50 to 57	45 to 55
Ditto, fine selected runs	—	45 55
Ditto, red	46 52	42 48
Ditto, extra	50 53	50 53
Ditto, Talavera	52 55	56 58
Norfolk, Lincolnshire and Yorkshire	45 50	—
Ditto, white	45 50	—
BARLEY, English, malting and distilling	—	32 34
Ditto, Chevalier	—	34 35
Ditto, grinding	—	27 29
MALT, Essex, Norfolk and Suffolk	—	53 59
Kingston, Ware, and town made	—	53 60
OATS, Essex and Suffolk	—	18 20
Lincolnshire and Yorkshire (Polands)	—	19 22
Ditto, feed	—	17 20
Devon & West Country, feed or ack	—	16 17
Northumberland and Scotch, feed	—	21 25
Dundalk, Newry, and Belfast, potato	—	22 23
Limerick, Sligo, and Westport, potato	—	19 23
Ditto, feed	—	18 21
Cork, Waterford, Dublin, Youghal, and Clonmel, black	—	15 20
Ditto, white	—	17 20
Galway	—	13 17
RYE	—	28 30
FLOUR, best marks (per sack of 250 lbs.)	—	41 46
Norfolk and Suffolk, ex-ship	—	36 38
BEANS, Mazagan	33 35	—
Tick	28 32	—
Harrow	32 38	—
Pigeon, Heligland	37 39	—
Windsor	30 40	—
Long pod	28 30	—
PEAS, non-boilers	30 33	—
White, Essex, and Kent, boilers	35 36	35 36
Ditto, fine Suffolk	36 38	—
Maple	36 38	36 38
Hog and grey	35 37	36 —
TARES	30 35	—
INDIAN CORN	33 35	—
INDIAN CORN MEAL (per brl. of 196 lbs.)	17s. 6d.	to 18s
TARES, winter, per bushel	—	nominal.
RYE MEAL (per ton)	£7 10s.	to £8 0s.
Ditto, foreign, per ton	£8 10s.	to £10 10s.
Rapeseed	£4 15s.	to £5
CAKES, Linseed, English, per 1,000	£12 0s.	to £12 15s.

IMPERIAL AVERAGES.

WEEK ENDING:	FOR THE LAST SIX WEEKS.											
	Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Nov. 11, 1848..	52	0	33	7	20	10	30	5	37	2	40	2
Nov. 18, 1848..	52	3	34	1	20	5	30	10	38	1	40	6
Nov. 25, 1848..	51	6	33	2	20	2	30	10	36	10	40	6
Dec. 2, 1848..	50	3	32	0	19	11	31	2	36	2	40	9
Dec. 9, 1848..	48	9	31	4	19	5	28	5	35	7	39	3
Dec. 16, 1848..	47	6	31	4	18	11	29	8	34	3	38	1
Aggregate Average of the six weeks which regulates duty	50	4	32	7	19	11	30	3	36	4	39	10
Comparative Average same time last year	52	10	31	3	22	7	32	3	41	0	48	6
DUTIES	7	0	2	0	3	0	2	0	2	0	2	0

PRICES OF SEEDS.

BRITISH SEEDS.

Cloverseed, red 30s. to 35s.; fine, 35s. to 36s.; white, 30s. to 40s.
 Cow Grass (nominal) —s. to —s.
 Linseed (per qr.).. sowing 56s. to 60s.; crushing 42s. to 48s.
 Linseed Cakes (per 1,000 of 3 lbs. each) £11 10s. to £12 10s.
 Trefoil (per cwt.) .. 15s. to 21s.
 Rapeseed, new (per last) .. £27 to £30
 Ditto Cake (per ton) .. £4 15s. to £5
 Mustard (per bushel) white .. 8s. to 10s.; brown, (nominal).
 Turnip, white (per bush.) —s. to —s.; do. Swedish, —s. to —s.
 Coriander (per cwt.) .. 18s. to 25s.
 Canary (per qr.) .. 35s. to 90s.; fine, 90s. to 100s.
 Tares, Winter, per bush. 10s. 6d. to 10s. 6d.
 Carraway (per cwt.) .. 28s. to 29s.; new, 30s. to 31s.
 Rye Grass (per qr.) .. 17s. to 38s.

FOREIGN SEEDS, &c.

Clover, red (duty 5s. per cwt.) per cwt. 28s. to 35s.
 Ditto, white (duty 5s. per cwt.) per cwt. 22s. to 45s.
 Linseed (per qr.) .. Baltic 42s. to 46s.; Odessa, 42s. to 46s.
 Linseed Cake (per ton) .. £8 10s. to £10 10s.
 Rape Cake (per cwt.) .. £4 15s. 5d.
 Coriander (per cwt.) .. 16s. to 20s.

NOTE.

In consequence of Mr. Lawes' paper, in our last number (for Dec. 1, 1848), not having been revised in proof-sheet, there are errors in it either of the copyist or the printer, of which the most important are corrected as under:—

At page 479, col. 1, line 23, for "picking," read trickery.

At page 480, col. 2, line 24, for "connecting," read converting.

At page 482, col. 1, line 14, for "No.," read Nos.

From "showing," at line 45, col. 1, page 482, to "14 cwt.," at line 1, col. 2, page 482, is a quotation, and should be within inverted commas, thus, "showing * * * * * 14 cwt."

At page 482, col. 2, line 37, for "imitating" read mistaking.

"At page 484, col. 2, line 31, for "terms" read turns.

At page 485, col. 2, line 3, for "scale" read sale.

At page 487, col. 1, lines 41 and 24, for "application" read applicability.

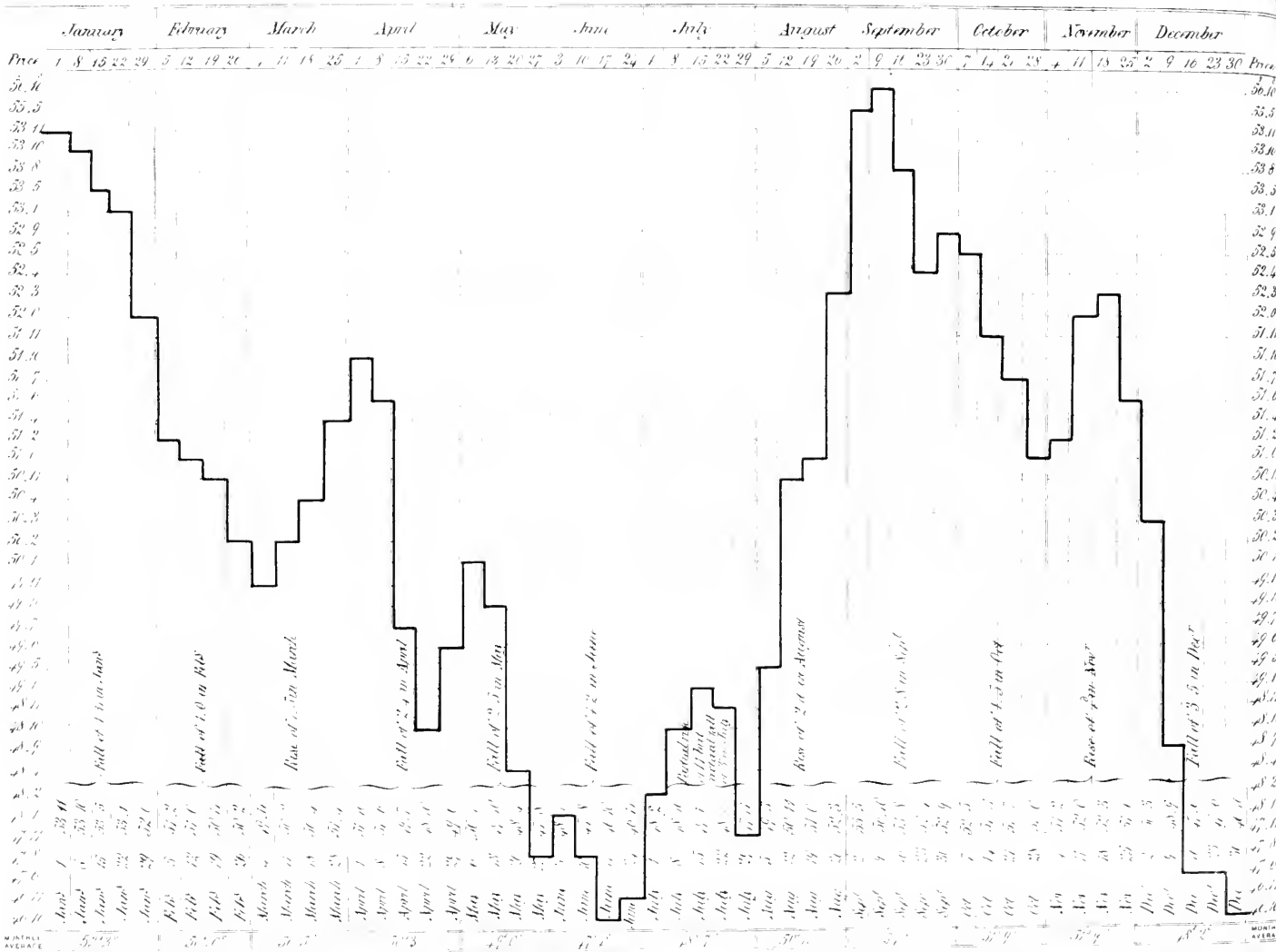
At page 487, col. 2, line 47, for "undeservable" read undesirable.

At page 418, col. 2, line 3, after the word "against" insert us.





DIAGRAM SHEWING THE FLUCTUATION IN THE AVERAGE PRICE OF WHEAT DURING THE YEAR 1848.



MONTHLY AVERAGE

THE FARMER'S MAGAZINE.

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[SECOND SERIES.

PLATE I.

A SHORT-HORNED BULL.

The subject of our first plate (Deception, roan, 7957), was calved in 1845, was bred by Mr. Thomas Gurne, Broadmoor, near Northleach, obtained the first prize at the Melksham Agricultural Show, in 1847, was shown as extra stock at the Chippenham Show, and obtained a prize; the first prize of Forty Sovereigns at the Royal Agricultural Society's Meeting at York, was awarded to him, being then the property of Mr. Richard Keeril, of Shaw Farm, Melksham, Wilts, who afterwards sold him to Mr. Douglas, of Cheltenham, Scotland, for £200. He was got by Elevator (6069), d. (Wellington Lady) by Raffle (7391), g. d. by Consul (1868), gr. g. d. by Gazer (7030).—Vide "Coate's Herd Book," vol. vii., p. 48.

PLATE II.

DIAGRAM SHEWING THE FLUCTUATIONS IN THE AVERAGE PRICE OF WHEAT DURING THE YEAR 1848.

REVIEW OF THE CAUSES WHICH INFLUENCED THE PRICE OF WHEAT DURING THE YEAR 1848.

(See diagram.)

The opening average price of wheat for the year 1847, it will be perceived, was 53s. 11d., to which point it was slowly advancing from the 11th of December previous, the average price then being but 51s. 11d.: but after the 1st of January 1848, the general appearance of the autumn-sown corn, and the reports from the agricultural districts being favourable for our future prospects, a hanging and falling market was the consequence. Added to this, the month of January, although some frost occurred in the early part, was so mild that the anticipation of an early opening of the Baltic prevented anything like a disposition with either the merchants to speculate, or farmers to hold back; on the contrary, the holders of wheat towards the latter end of January manifested a decided inclination to realize. From the mildness of the winter there was less consumption of food than in ordinary years, and more foreign wheat was left on hand than was calculated upon, added to which the arrivals from foreign countries during the months of December and January had exceeded expectation, and the demand for bread-stuffs for shipment to Ireland was less than what was anticipated in the previous autumn. We therefore find in the first month a fall in the average price of wheat of nearly two shillings. On the last week of January, in consequence of heavy frost and snow having suspended all out-door work the farmers were obliged to employ their men in thrashing, and although not an excessive, yet a steady supply was kept up in the principal markets of the kingdom, the consequence was a fall in the second week in February of nearly one shilling. During that month the operations in the corn markets, not only of London, but in the country generally, were of a hand-to-mouth character; and notwithstanding that on the coming 1st of March the corn law would again come into operation, yet such was the disinclination to make investments in corn that we find

the prices falling week after week until March the 11th. This may be accounted for by the reports from every part of the kingdom being of so favourable a character as regarded the autumn sown wheat, which was described as "being vigorous without being too gay," and that farmers were holders of a greater proportion of the previous year's crop than is usually held at that period.

The month of February having been on the whole a wet one, and several parts of the lowlands of the country being flooded in the early part of March, thereby rendering it too wet to be worked for the spring corn, added to the fact that there was then a duty payable on foreign corn of 6s. per qr., caused a little reaction in the trade, and we consequently find the averages going up during the month of March, to the extent of 2s. nearly;—this was also at the time partly caused by the French revolution, and the general tendency evidenced by the other kingdoms of the continent to become disturbed, which it was feared would preclude the possibility of our drawing large supplies from abroad;—added to which, from the wet weather in the early part of March, out-door work had scarcely commenced up to the 20th; consequently the state of the corn trade, from these inauspicious circumstances, could not be otherwise than favourable to the seller. The corn brought to market was also much deteriorated by the wet weather, and the demand for dry samples was very general, nevertheless upon the first appearance of dry weather at the latter end of the month, the markets again became unsteady, and this, notwithstanding it was well known that millers and dealers had miserably short stock on hands. The first week of April brought a series of depressions in the trade that, with few exceptions, continued until the middle of June. The weather underwent a decided improvement, and the spring corn, with the exception of some districts, was very generally being sown. The reports also from the agricultural districts of the young wheat plant were more favourable than from the previous wet weather was anticipated—it was represented as "wearing a healthy aspect," and that this did not arise from premature luxuriance was strengthened by the fact, that farmers at the commencement of April manifested a greater desire to sell than they showed earlier in the season. A very general opinion was likewise expressed that farmers were holders of larger stocks than usually held at a corresponding period of the year; in fact, from the disinclination of merchants or millers to speculate, no rise in the price of wheat was expected unless the general appearance of the growing crops were such as to anticipate a coming deficient harvest. The importations of foreign corn were liberal, 111,778 qrs.

having been received during the month ending the 5th of April, 1848, so that speculative investments were avoided by all.

The months of May and June were very favourable for the growth of the spring corn, a larger breadth of potatoes was sown in the kingdom than the previous year, and the accounts of the luxuriant appearance of the latter crop was so satisfactory as to bring the average down gradually from the 5th of May, when it was 50s. 1d., to the 17th of June (with the exception of one week), when it attained the lowest point for the year, viz. 46s. 10d.; the fall from the highest to the lowest point being in the first six months (nearly) 5s. 1d. At this low price although there was not sufficient to encourage importation, and it was manifest that there must be a loss on most of that which had arrived from the continent, yet supplies from abroad kept up a dead weight on the market; the quantity of foreign wheat which arrived in the port of London alone during the quarter ending 28th June, being 165,166 qrs. This amount shows a falling off as compared with the corresponding quarter of the previous year of 75,135 qrs.; but it must be borne in mind that in the year 1847, there was only a nominal duty of 1s., while in the quarter ending 28th June, 1848, the duty payable upon the aggregate average of the six weeks previous to the day on which it is struck was 7s. for the first seven weeks of the quarter, 8s. the next three, and 9s. the last two.

A reaction took place at this time, which could not be ascribed to speculation, but solely to apprehensions which were entertained that the potatoes were not so promising as they had, a month previous, appeared. In the commencement of July the weather became very changeable, whispers came in from several parts of England that the potatoes were becoming diseased, the merchants and millers had run their stocks to the lowest point of convenience, and the farmers kept back the supplies from the country markets upon perceiving the firm tone which was taken by the great leading markets of the kingdom; the supplies from abroad, too, began to fall off, and the belief was fast gaining ground that the foreign arrivals must become more moderate—all those circumstances combined, gave increased confidence to holders; we therefore find that the rise in the price of wheat was rapid, going from the lowest to the highest point it arrived at during the year in the short space of thirteen weeks, the total rise being, however, only 10s. The weather and the progress of the potato disease was the only cause for this advance: the early and the latter part of July was very changeable; heavy rains had fallen, and it was feared had injured more or less the wheat plant, which in many localities was thin on the ground, and the size of the ears smaller than

usual; the lent sown crops too were far from heavy, therefore an average crop was not expected, even with auspicious weather, for its ingathering. But this did not seem likely to occur, as up to the end of August the rain fell heavily and generally throughout the country. Wheat was cut in some districts in the latter end of July; and in the beginning of August, harvest became pretty general in the southern parts of the kingdom; still, from the unsettled state of the weather, hardly any had been carried, and that which was cut, as well as that uncut, was considered in imminent danger. In the last weeks of July a good many orders for wheat and Indian corn were received from abroad, and it was expected that the importation of the latter article would be heavy in autumn. That the rise would have been more rapid, and to a higher amount, is not at all improbable, but for the fact that upon its being so generally stated that the potatoes were diseased and would not keep in the pits, the apprehension of the growers as to this fact induced them to dig and send into market potatoes which were apparently sound, and sell them at almost any price; so abundantly were the markets supplied during the month of August in many parts of the kingdom, as to cause a material decrease in the consumption of every other kind of food, particularly bread; this desire to dispose of the potatoes was the more remarkable, from the fact that those sold were on the whole better than for several years past: in some parts of the kingdom they were sold as low as 3lbs. for one penny. This, as a natural consequence, had the effect of lessening the demand for wheat, which otherwise, from the very uncertain and unsettled state of July and August, would have gone to a much higher figure than it did on the 9th September.

In the early part of September the weather cleared up generally throughout the kingdom, the harvest was secured in most parts of the southern and western parts, and from the favourable accounts which were received, contrary to general expectation, merchants and speculators began to act with extreme caution. Even had they been disposed to forget the lesson taught them the previous year, the same facilities for entering into speculative operations were not obtainable; and although the farmers generally were very moderate in their deliveries, it was not felt, in consequence of the regular supplies of foreign grown, and the abundance and cheapness of the potatoes, which actually glutted the several country markets. The merchants too saw that a new position must be taken, in consequence of the alteration of the corn laws, which was to commence on this day—February the 1st. The important questions now are: “how will prices range when all restriction on importation is re-

moved?” “What will be the amount of the deliveries from America and the continent?” And “to what extent will be the amount of foreign corn imported after the first of February?” when we find that in the fortnight ending the 7th of October, 1848, the enormous supply of 66,000 qrs. of wheat had flooded the London market, and nearly 74,000 in the following fortnight? Indeed by the official account published it appeared that 485,270 qrs. of wheat were imported into the United Kingdom from foreign countries for the month ending the 10th October, that duty was paid within the same space of time on 508,654 qrs., and that there remained under lock on that day 212,909 qrs: the imports of flour were 193,539 cwt., duty was paid on 181,574 cwt., and there remained in bond 35,920 cwt. The importations of other articles were on the same extensive scale, the total quantities of grain and pulse entered for home consumption for that month amounting to the enormous quantity of 1,140,155 qrs., being more than was imported during any whole year from 1811 to 1827 with the exception of 1818, when 1,694,261 qrs. of foreign wheat and flour were received, and this included the trade with Ireland. With these immense supplies the wonder is that prices did not recede still more rapidly.

From the 9th of September, with the exception of the last week in September and the three first weeks in November, the averages were declining, although neither merchants nor millers were half supplied. On the 30th December, the average price of wheat was exactly the same as it was on the 17th June previous; but the causes of this decline were in both cases different. In the former, the weather, and the promise of abundance in the harvest, operated; in the latter, in the teeth of the fact that our harvest was under an average, and our millers buying merely what was required for daily use, nothing could induce speculation, from the fear naturally entertained that the quantity of foreign corn which would be imported after the 1st February would be so enormous as to preclude the chance of improved prices; and this opinion was strengthened, from the fact that importers were anxious to realize on board ship, and not go to the expense of storing for the chance of a rise in the market. All parties were averse to hold stocks, particularly as the weekly supplies exceeded the quantity required for immediate consumption; and the general feeling amongst merchants, millers, and dealers was to meet the new order of things, on the 1st of February, with as little stock on hand as possible; and naturally so, when we find it asserted, a short time before Christmas, by a first-rate authority, that “it would not be difficult to find parties willing to contract to

deliver fine quantities of red wheat, weighing 61 to 62 lbs. the bushel, at 38s. to 39s. the qr. free on board next spring."

Duty was paid in the last eleven months of

1848, ending December 5th, on 1,843,536 qrs. of wheat, 829,643 cwts. of flour, 1,352,257 qrs. of maize, and 130,807 cwts. of Indian meal.

ON THE MIXTURE OF GUANO WITH COMPOST.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

An important practical question often arises as to the best mode of applying guano as a manure. It is generally used by the farmer as a top or other dressing, and spread by hand. This is perhaps the most beneficially accomplished in wet weather, when the ammoniacal, and other soluble salts of the guano, are thence dissolved, and intimately mixed with the soil. Another mode is that recommended by Mr. A. F. Gardner, of Borrochan, in Renfrewshire, the object of which is to add to the power of the guano, by increasing the number of chemical ingredients in the mixture, and also by decomposing and rendering some of the salts of ammonia found in guano no longer volatile in the temperature of the atmosphere. He thus decidedly expresses his opinions on the subject (Trans. High. Soc., 1847, p. 16). "From repeated trials now for four years, upon almost every description of plants in our farms and gardens, I am induced to place this mixture in the foremost rank of fertilising substances, if not the very first, I have ever tried. Combined with guano, with or without farm-yard dung, it has grown very large crops of grass, grain, and green crops, leaving the land in first-rate condition. Indeed, I consider that guano ought never to be used without being combined with this mixture, either as a manure or top dressing; and it possesses the property, which many, if not all, other of our artificial manures want—that of not being so easily dissolved and washed out of the soil by rain. The mixture alluded to is made as follows:—Take any quantity of animal charcoal or burnt bones you may require; dissolve these in a tub, with half its weight of sulphuric or muriatic acid, adding to the charcoal, before putting in the acid, as much boiling water as will bring it to the consistency of thin gruel; let it stand and dissolve in the tub at least twenty-four hours, frequently stirring it up during that time. For every 112lb. of animal charcoal or burnt bones so dissolved, take 56lbs. of carbonate or sulphate of magnesia, 56 lbs. of sulphate or muriate of ammonia, 112lbs. of common salt or carbonate of soda, and 56lbs. of potash—mix them well together, and pour them into the tub amongst the dissolved charcoal, stirring it all the time; and again let it stand for ten or twelve hours. If this

mixture is to be used by itself, add saw-dust, dried peat, or any absorbent, to take up the moisture; put it through a half inch sieve, which will divide it, and make it sow better; or you may now add guano, which will absorb a portion of it, and thus have a portion of the ammonia in the guano fixed."

Mr. Gardner gives the result of several trials made with this mixture. For instance, with Swedish turnips grown on a medium loam, which had previously grown a crop of oats, after trenched lea.

1. The soil dressed per acre with 30 tons of farm-yard manure, costing £10 10s., produced, of bulbs, 34 tons 5 cwt.

2. The soil dressed with—

Farm-yard dung	15 tons.
Peruvian guano	3 cwt.
Animal charcoal	2 "
Sulphuric acid	1 "
Carbonate of magnesia	1 "
Sulphate of soda	1 "
Muriate of ammonia.....	1 "
Common salt	1 "
Horn dust.....	3 "

Costing together £9 3s. 4d., produced, of bulbs, 46 tons 5 cwts.

3. The soil dressed with—

Farm-yard dung	15 tons.
Peruvian guano	3 cwts.
Animal charcoal	2 "
Muriatic acid	1 "
Carbonate of magnesia	1 "
Sulphate of soda	1 "
Sulphate of ammonia	1 "
Horn dust.....	3 "
Common salt	1 "

Costing £9 5s. 4d., produced, of bulbs, 46 tons 17 cwts.

The omission of the charcoal, acid, &c., caused a material falling off in the production of bulbs; thus in experiment 4, the soil dressed with—

Farm-yard manure	15 tons.
Peruvian guano	3 cwts.
Horn dust.....	4 "
Common salt	2 "
Sulphate of soda	2 "

Costing together £7 15s., produced, of bulbs, 37 tons 2 cwts.

The object of these additions to the guano is, therefore, not to waste its salts of ammonia, but to convert such of them as are volatile, by the excess of acid in the recommended mixture, into either the sulphate or muriate of ammonia—salts which are not volatilized by the temperature to which they are exposed in the soil. In such a way then guano may be advantageously mixed with other substances.

A very different result, however, is produced by mixing guano with the compost heaps of the farm-yard. For by this plan, although the compost is improved, the guano is more than proportionately impoverished. This is one amongst many instances of ill-considered attempts to form economical fertilising mixtures, without the requisite knowledge of the chemical action produced by the substances employed. The case of guano, too, is only one instance amongst many. Thus, as I lately had occasion to remark in another valuable agricultural periodical, the sprats which abound on the coast of Essex, and which, at the rate of 30 or 40 bushels per acre, produce such extraordinary effects on the oat crops of that county, have frequently been added to the compost heaps of the farm-yard. The result has very commonly been the rapid putrefaction of the fish, the exhalation of a great mass of gaseous matters, the enrichment, it is true, of the dung, but with more than a commensurate loss of the rich matter of the sprats. The practice of the old farmers of Essex and Kent is much better; they either at once spread and plough the fish into the land, or they mix them with earth; in which they dissolve away, it is true, but they escape the fermenting influence of the farm-yard compost heap. It was thus, too, that the late Lord Somerville employed as a manure on the sandy soils of Surrey refuse whale blubber. He mixed it with earth, and even then ploughed it as soon as possible into the soil. To expose such rich oily substances to the heat of a compost heap, he well knew would be to take a certain means of decomposing and wasting them. It is thus that I have frequently of late noticed with regret the erroneous plan employed in the case of guano, of adding it to the compost heap, by way of improving the goodness of the dung. This practice saves very little labour in the use of the guano, and is not nearly so good a plan as spreading it by hand over the surface of the ground, either as a top dressing, or just previous to ploughing. Let the inquiring farmer only refer to the chemical composition of guano, and these facts will appear tolerably clear. The composition of the varieties of guano of commerce is thus stated by Professor J. F. Johnston (Johnston and Shaw's Farmers' Almanac, vol. 3, p. 31)—

Kinds.	Water.	Ammoniacal matter.	Earthy phosphates.
Peruvian	7 to 9	56 to 66	16 to 23
Chilian	10 to 13	50 to 56	22 to 30
Bolivian	6	65 to 64	25 to 29
Ichaboe	18 to 26	36 to 41	21 to 29
Saldanha, light . .	17 to 27	14 to 22	43 to 56
„ dark	33 to 44		
Algoa Bay	{ 2.26	22.37	70.20
	{ 23.93	23.16	43.15
Halifax	{ 24.47	20.61	22.67
Bird's Island	{ 25.49 }	19 to 21	{ 22.43
	{ 14.18 }			{ 5.37
Patagonian, light .	{ 40.99 }	20 to 25	24 to 32
„ dark	{ 20.55 }		

Now it is evident, from the results of this analysis, that the best varieties of guano are those which most abound in the salts of ammonia; the Peruvian, or highest priced guano, containing from about 56 to 66 per cent., the inferior low-priced varieties only yielding from about 15 to 20 per cent. If such then is the fact, the next question which suggests itself is as to the policy of adding these salts of ammonia (a good portion of them very volatile) to the dungheap of a farm-yard. It seems to be a practice of a very injurious nature, since the warmth of the fermenting dung is pretty certain to dissipate a large portion of these salts, without at the same time accomplishing a single good object. It is merely feeding with carbonate of ammonia a mass of fermenting dung, from which that volatile salt is already copiously emitted in almost every instance. The matters which are thus evolved were long since pretty accurately described by Sir H. Davy. Three pints of fermenting dung, when confined in a retort, yielded in three days 35 cubic inches of elastic fluid, which, when analyzed, afforded about 25 cubic inches of carbonic acid gas, the remainder being hydro-carbonate, mixed with some azote; with these gases was evolved a portion of water, which, when collected in the condenser, was found to amount to nearly half an ounce. This had a saline taste, owing to its containing acetate and carbonate of ammonia. Here then was a wasteful evolution of ammonia, which the farmer very correctly endeavours, on all occasions, to avoid as much as possible, by so regulating the fermentation of his compost, as to prevent that excess of temperature by which this evolution of the volatile salts is so materially increased. An attempt has been made to calculate the proportion of the chief chemical ingredients added to the soil in a dressing with farm compost, and in African guano (Quar. Jour. Ag. 1848, p. 554), and this has been done in such a way as to give easily understood information to practical men. The estimate

is based on the supposition, that 10 tons of farm-yard compost and 4 cwt. of African guano are added to the soil. Farm-yard manure contains—

	Tons.	Cwts.
Water, about	6	10
Humus	0	16
Organic matter	1	12
Inorganic matter	1	2

The inorganic matter consists of the following substances—

	Cwts.	Qrs.	Lbs.
Potash	0	2	20
Soda	0	2	0
Lime	0	0	7
Magnesia	0	0	6
Sulphuric acid	0	2	23
Chlorine	0	2	18
Silicic acid	0	0	1
Silica	0	3	2
Phosphate of lime	1	1	18
Phosphate of magnesia	0	1	22
Phosphate of iron	0	3	18
Carbonate of lime	1	3	11
Carbonate of magnesia	0	0	24
Sand	11	0	0

To sum up the more important part of this calculation, in 10 tons of manure is added to the land, of

	Cwts.	Qrs.	Lbs.
Phosphates	2	3	2
Alkalies &c.	1	0	25
Lime and magnesia	2	0	2

Together with azote in organic matters, nearly equal to 1 cwt. of salts of ammonia. To contrast this with the inferior or African guano, we find that 4 cwt. of this manure contains, of

	Cwts.	Qrs.	Lbs.
Ammoniacal salts about	1	0	0
Alkalies	0	1	16
Phosphate of lime	1	2	0
Water	1	0	0
Earthy matter	0	0	12

If, however, the farmer is of opinion that the intimate mixture of the guano and the compost is desirable, then he may still accomplish his object, and yet avoid exposing the guano to the too high temperature of the fermenting dung-heap, by following (and this is only one mode amongst many) the plan adopted by Mr. Pusey, who took some valuable precautions to ensure a correct result in his trials. He remarks (*Jour. R. A. S.*, vol. 6, p. 529), that, "having found that when manures are tried by being spread upon distinct portions of the same field, some uncertainty is cast upon the result by differences in the crop, which evidently do not arise from the action of the respective manures, but from variations in the depth or quality of the soil, from previous manurings, from the depredations of insects, or some other cause that cannot be detected, I apportioned the manures to be tried in a new method, which increased the trouble indeed, but

which I thought would make the result trustworthy. The rows were opened three feet apart upon the whole piece. In three rows I put the heavy dressing with dung; in the next two rows the lighter dressing. In the two following rows we added rape-dust to the dung, and so on, until, in 19 ridges, all the trials had been prepared. We then began again, as before, with the heavy dressing of dung, and completed another set of 19 ridges like the first. The extent of five acres allowed six sets thus to be made, which might be regarded as six repetitions of the same experiment, and as, therefore, deserving greater confidence. Thus the rows which received artificial manure only, of whatever kind, were of a darker green than the rest, until some hot weather came in August; their leaves then blistered, and many of the leaves withered suddenly off. If this had occurred on one patch of ground only it might have been imputed to accident; but no one who saw it repeated on these particular rows in six different stripes across the field could doubt that it was caused by the absence of dung, which on such sandy land as this appears necessary for carrying a crop through to harvest. This experiment (which was made in 1845) with the yellow globe beet, shows very clearly that in this way the addition of guano to farm-yard compost very materially adds to the power of the manure.

"At the end of October the roots were taken up, and the produce ascertained by weighing the yield of half an acre, measured across the six sets of rows at one end. The yield of clean roots per acre was as follows:—

	Tons.
Soil simple	15
Dung 13 loads	27½
Dung 13 loads, guano 3 cwt. ...	36
Rape 7 cwt.	20½
Bones 14 bushels	20
Guano 3 cwts.	20½

These trials, made in widely different portions of the island, all tend to the same conclusion; viz., that guano is a valuable and powerful fertilizer, not only used by itself, but when added to other manures. They seem to prove also, that the best mode of mixture, is not by adding it to the fermenting heaps of the farm-yard, but by avoiding, however, this injurious fermentation, they may be more profitably used in conjunction than when employed in their simple state.

We understand that Mr. Thomas Hine has in the press, a pamphlet on the "Giant Sainfoin, and the Capability of its Successful Cultivation." Coming from one who gives the result of his personal observation and practical tests during several years, upon this plant, this pamphlet, we are confident, will be most valuable to the agriculturist.

JERUSALEM ARTICHOKE IN AGRICULTURE, &c.

BY J. TOWERS, MEMBER OF ROYAL SOCIETIES OF AGRICULTURE AND HORTICULTURE.

Enquiries have from time to time been made concerning the probable utility of this plant to the stock farmer. It has been little thought of lately, as few persons like it, and the gardener dreads to introduce a vegetable which cannot be removed without difficulty from any spot whereon it thrives, and has obtained possession. Hence, as few researches have been undertaken by analysts, we had remained ignorant of its nutritive constituents. Not long since a gentleman, with whom I was in correspondence, wished to ascertain its acreable yield, and also the extent of its nutritive power. Having grown the plant for years, and in several places, I knew it well as a garden vegetable, but no further; and therefore consulted such authorities as were at command, but to little purpose. Within the last week an article has come to hand, which is now copied verbatim, in the hope that it may prove useful to the farmer, to the labourer who participates in the allotment system, and to the rural domestic economist.

“Jerusalem Artichoke.—This plant was introduced from Brazil—and not from Palestine, as is erroneously supposed—in 1617, while the potato was introduced from Peru as early as 1597. Still, the former attracted the attention of the cultivator long before the latter was much thought of; even so late as 1708 we find the potato thus noticed in ‘Mortimer’s Gardeners’ Calendar,’ ‘as a root very near the nature of the Jerusalem artichoke, although not so good and wholesome, but that it may prove good for swine.’

“The following analysis, by M. Braconnet, a French chemist, will show its composition, in 100 parts:—

Uncrystallizable sugar.....	14.80
Inuline	3.00
Gum	1.22
Albumen	0.99
Fatty matter	0.09
Nitrates of potash and lime.....	1.15
Phosphates of potash and lime	0.20
Sulphate of potash	0.12
Chloride of potassium	0.08
Malates and tartrates of potash and lime ..	0.05
Woody fibre	1.22
Silica	0.03
Water.....	77.05

“This root, excellent though it be, has long ago given precedence to the potato, and is now held by many in as low estimation as the potato was in the days of Mortimer. It is, however, the best sub-

stitute, if we except the parsnip, carrot, and beet. Jerusalem artichokes may more properly be said to have been allowed to *exist* in our gardens than cultivated, for no useful plant has been less ceremoniously dealt with; any out-of-the-way corner, where nothing else would grow, has been the place allotted to it. The greatest weight of crop of Jerusalem artichokes, we have ever heard of, is that stated by Bous-singault, namely, 14 tons 8 cwt. 2 qrs. 27 lbs.; and the still more extraordinary return of Mr. Tweed, recorded in the ‘Irish Farmers’ Journal,’ namely, 32 tons 1 qr. 3 lbs. per acre, grown in a garden at Woolwich. If such returns as these could be depended upon, it would be a substitute for the potato.—J. JOHNSTON, December 26, 1848.”

It is gratifying thus—and so recently—to have obtained the authority of so eminent and candid an analyst as is Mr. Johnston. I beg to remark on the elements above tabulated, that the quantity of sugar is of great consequence, but that in all other particulars the inuline—which represents elecampane—the small proportion of gum, and of albumen, must be little esteemed, when compared with the large amount of starch contained in the potato, to say nothing of the fibrous matter and albumen which are separated by mere washing. Davy has written that “Potatoes in general afford from one-seventh to one-fifth of their weight of dry starch.” Einhoft, from the analysis in the great way, of 7,680 parts or pounds of potatoes, obtained of starch 1,153, of fibrous matter 540, albumen 107, mucilage 312, total 2,112 parts, equivalent to nearly one-third of the whole. By two trials in 1827, I obtained from 8 lbs. of potatoes, first of starch 1 lb. 6 oz., of pulp pressed 1 lb. 11 oz., of water and soluble matter in the washings 4 lb. 15 oz.; 2nd, peelings before rasping 1 lb. 5 oz., starch 1 lb. 3 oz., pulp, by pressure, 1 lb. 14 oz., washings 3 lb. 10 oz. Such crude experiments tend only to prove that while potatoes differ considerably in their varieties and products, they all abound in nutritive substances, and cannot be represented by any other vegetables.

The Jerusalem artichoke (*Helianthus tuberosus*, or tuber-bearing sun-flower) is not likely, in my opinion, to yield, under ordinary culture, much more than 12 tons of tubers; but if highly tilled, it is very possible that a much larger crop might be procured, the acreable weight of which would

on an average, be from 15 to 20 tons. But so long as the plant is restricted to any untilled waste plot of an orchard, or the like, it can obtain little more from the earth than salts of potash and lime, corresponding with those detailed in the foregoing table, which, altogether, will be seen to amount to 1.61 per cent. The tuber is a nice vegetable to those who like it; but it greatly lacks gluten and albumen: the former could be supplied by flour of wheat, and by Scotch oatmeal, mashed up with the steamed or boiled tubers. Of the proximate nutritive principles of the entire oat, we may obtain a tolerably correct idea from a table compiled from analyses by Boussingault, Sprengel, and Dumas. There they are estimated as consisting of, water 16 parts, husk and fibre 20, starch, gum, and sugar, 50, gluten, albumen, and casein 14.5, fatty matter 5.6, salts 3.5. By the separation of the husks and water the meal acquires a greater proportion of purely nutritious substances, which, by assimilation, are converted into fat and muscular flesh. If animal chemistry be founded in philosophical truth, we need no longer doubt the extreme value of genuine farinaceous meals; and it is upon this view of the subject that I have repeatedly urged the propriety of combining kiln-dried oatmeal with all those roots which have been recommended as substitutes for the potato.

From table above referred to, I find that the carrot has been found to comprise, in 100 lbs. and a small fraction more, water 85 lbs., coating and fibre 3 lbs., starch, gum, and sugar 10 lbs., gluten, &c., only 2 lbs., fatty matter 0.4 lb., saline matter 1 lb. This root, therefore, stands low in the comparative scale of nutritious elements. Yet it has been greatly extolled, particularly in an article which appeared in the *Mark Lane Express* of January 5th, wherein, if I mistake not, the acreable yield of the root only, without tops, is es-

timated as high as 30 tons. To obtain this crop, the land must be peculiarly appropriate in its fine tilth and temperament. Near Maidenhead, carrots could scarcely be produced nine inches long without fork and distortion. A few miles remote, in the heathy lands of Surrey, the plant would spindle straight downward to the length of eighteen to twenty-four inches, free from spot or blemish. The parsnip does much better in strong land, and I presume should rank higher in feeding qualities. But to return to the carrot. I know, by experience, that in soils which do not suit the long-rooted varieties, the early-horn carrot will grow remarkably well; and, therefore, it should appear that the writer of the paper in question was correct when he recommended that variety as more profitable. The *white Belgiau* is doubtless good; and where the land suits it, and the seed is pure, and judiciously sown in drills, so distant as just to permit a cautious hoeing of the mere surface, it bids fair to rival the mangel wurzel. Carrots of all kinds require a nice and peculiar treatment. If sown too early (before the middle of March), and the weather prove wet, the seedlings are rapidly destroyed by slugs. If the weather of April be dry, and the plant not fairly established, the seed may lie inert in the ground; if deeply sown, under any circumstances, a failure will generally result; and lastly, as is too common, if two-year-old seed be mixed with that of last year, the crop will be very thin; and as the seed is tardy at best, the grower may have to wait till it become too late to recover lost time. If all circumstances prove favourable, there can be no doubt that a crop of considerable value, extremely salubrious to horses and cattle may be obtained. But I repeat it—the soil *must* be light and sandy, deeply moved, and be naturally free from stones and roots. Manure, I think, should always be placed deep, to attract the tap-root.

AGRICULTURAL STATISTICS.

A LETTER TO THE RIGHT HONOURABLE THE EARL OF CARLISLE.

MY LORD,—Since the introduction of the bill for making provision for the collection of agricultural statistics, the agricultural portion of the community have had a full opportunity of examining its principles and details, and of expressing their opinion of its character.

Under the impression that it was withdrawn rather to court an expression of opinion, than from any doubt of its value and necessity, I have ventured to address your Lordship on the subject; and some excuse for so doing may be pleaded from the

intercourse I have had with all classes of farmers, and from having some knowledge of their wants and feelings.

It is impossible to escape the notice of persons acquainted with our soil and climate—with the wants of our large and increasing population, and the capabilities of production of the soil of this country—that we are unable to arrive at any definite conclusion as to the means we possess of supplying its wants. Experience has shown, that, on a sudden deficiency of one vegetable production—a

calamity to which all cultivated plants are more or less liable in the course of a series of years—no adequate conception was entertained of the wants of the country; and the very ignorance of this subject involved thousands of parties in speculations ruinous to themselves—and others with whom they were connected, caused fluctuations of a most frightful and ruinous character to prevail, and placed thousands of parties, once considered rich, in a position unable to meet their liabilities.

No reasoning from past experience, no analogy can help a government in such an emergency: they have no data, neither to determine the precise amount of any deficiency, and therefore are unable to decide what kind or degree of interference will be necessary, to place our population in possession of their necessary amount of food, nor have they any better means of ascertaining the consumption of our masses either by the quarters or by the acre; and the guesses of statisticians differ so materially in themselves, that it is difficult to say whether any or all are to be equally discredited. The only remedy for this most uncertain state of things, is a well-digested mode of obtaining an account, not only of the surface growing any particular description of food for our people, but the produce of that area in weights and measures more appreciable by the recognized modes of calculation.

When the deficiency of the harvest, and the potato failure, in 1846, became so manifest that the consequences were severely and extensively felt, the government rescinded the minimum duty to save the country from the horrors of starvation, and an importation of some ten millions of quarters of corn was the consequence; but so general on the continent was the failure of the crops found to be, that the continental purchasers were all in the market, and from this circumstance the price was nearly doubled compared with what it was just after the harvest; and we have had to pay some 33½ millions of money for our importations to supply the deficiency. Had the government been in possession of accurate and detailed statistical information of the quantities and produce of food, these ten millions of quarters of corn, instead of 33½ millions of pounds, would probably not have cost more than 20 or at most 25 millions, and our commercial and monetary difficulties would have been less by that very considerable sum.

Had our patriotic government had the means of ascertaining the produce of our own crops, as well as the French had of theirs, they would doubtless have rescinded the four shillings' duty at a much earlier period; so that when the French were buying English corn in Lincolnshire, we should

have known our wants and admitted corn free at a period when it could have been purchased at some 48s. per quarter, instead of having to purchase it when it was nearly double that price.

Unless, on such a subject, accurate information can be obtained,—something more worthy of credit than the vague and unsatisfactory reports which obtain all but general credit if they be only calculated to serve particular interests,—we may be expected often to be placed in similar circumstances, and need ten millions of quarters of corn from abroad, instead of three or four.

The productions of a given area of land are well known to vary from 30 to 100 per cent., from causes totally out of the reach of the cultivator; a dry season may reduce a produce which could be fairly calculated on by fully that ratio, or a wet one produce a similar effect. Cultivated vegetables are liable to periodical visitations of peculiar diseases or insects, and even animals are not free from them; so that any one of these, coming suddenly upon us, may place the government in a most critical position; and if our millions were overtaken by any of those periodical visitations, and the minister of the day were unable to satisfy himself of the fact until a famine were staring us in the face, consequences which it is frightful to contemplate might follow, which would all be obviated if we had a carefully made and accurate system of agricultural statistics.

The only objection with any force used against such a measure is, that it is inquisitorial—that such investigations and returns are likely to be unpalatable to the farmer, and to deprive his business of that privacy and independence which are necessary to his maintaining his proper position with his landlord.

The bill of the session before last was evidently framed to avoid this unpleasantness; and all it provided for, was to ascertain the acres growing wheat, barley, rye, oats, &c., and the number of cattle, sheep, &c., on the various farms. The farmer makes his own returns of the area of land under each kind, and the number of stock he keeps, and these added together would give the aggregate numbers of stock, &c., in the kingdom.

Assuming this fully carried out, what would the government know? They could tell for instance the average acres of wheat—they could compare this with the previous year, or strike an ideal average of the entire produce, and make their calculations accordingly; or they could number up the oxen and sheep existing in the country; but they could not tell whether the land would produce 15 or 35 bushels per acre, nor whether the stock were fattening for market, or used for mere holding purposes.

The whole machinery would therefore be defective in this particular—the entire expense would be incurred, and yet the minister would not possess the precise information he wanted, viz:—the *quarters* of corn, and the heads of fat stock available for food for the population; and yet to expect from the farmers an estimate of their *yield* would be so objectionable that it could never be carried out, and so difficult to obtain from the farmers themselves, that no dependence whatever could be placed upon it. A plan of this kind would meet with universal dislike and opposition, and too many would try to defeat, rather than assist its operations.

The farmers generally are by no means adverse to a proper and judicious system of agricultural returns. Their own interests are so much identified with the best means of obtaining the accurate information, that if a fair, open, and reasonable plan be devised, they will readily give their assistance and co-operation; and the government which carry it out will do much to render easier the management of the affairs of this great and growing community.

The farmers at present are totally ignorant as to the amount of home produce which their saleable article has to meet. Immediately before every harvest, the markets assume a “weather” character. A low barometer—a cloudy day, or even a genial shower gladdening the face of nature, will send corn up or down by some shillings per quarter; and every farmer is anxiously listening to reports of the “appearance,” and “promise,” and circumstances of the crop. In harvest-time hope and fear prevail, according as newspaper reports, and “corn letters” of the satisfactory or unsatisfactory nature of its state in the ear, and before the scythe, preponderate; and as soon as harvest is over, the same anxious feelings pervade, as favourable or unfavourable accounts get into print, as to the appearance of the stackyards, and the *yield* of the crops.

It would manifest little knowledge of the character of the earth's products, if I conceived that no difficulty exists as to obtaining correct information of the yield before it is thrashed; but a close approximation is not impossible. A changing tenant has often to ascertain it; a purchaser of a crop in the field has it to do, and does it with great accuracy; and tithe-owners have had it to do, as a basis for letting their tithe: none of these processes are considered improperly inquisitorial, and yet they are so accurate, that many thousands, and possibly some millions of pounds, are risked upon them annually.

Now, if a process like this has worked satisfactorily for centuries—if no one is offended, and no one aggrieved, why, my Lord, should not the govern-

ment adopt a similar course? There would be no difficulties, no complaints; and a return would be obtained, sufficiently accurate for all practical purposes, and a full and detailed body of statistical information procured, not only capable of settling the means of subsistence of the population in any particular year, but an historical document exhibiting the steps of the development of the agricultural resources of the country, and would be a most invaluable collection of certain essential facts.

Nor would the machinery be expensive. Let a commission be appointed, attached either to the Board of Trade, Registrar General's, or the Poor Law Commissioners' Office, or even an independent office, provided with clerks, &c.; at a particular day, say June 30th in each year, let a form of notice be sent, through the overseer of the poor, who has now but few duties, to each occupier of land in the kingdom exceeding three acres, with instructions for him to fill up the acres he has growing corn and other crops, and stating the number of feeding and holding stock he possesses.

Then for each poor law union, let a valuator be appointed by the government, who shall, on a certain day, commence and take these returns, either in detail from the overseer, or in a summary to be made by him; and let him make an inspection of the crops in each township of the union, and deliver in an estimate of the average produce, say by the 30th of July. This is to be attached to the schedules, and returned to the central office by the valuator, within a certain day; and the officer and clerks of the central establishment shall calculate the whole. An aggregate would thus be obtained from correct and irrefragable data, and yet no occupier's secrets would be betrayed, either to the government, to the landlord, or his neighbours; the valuator making a return only for the aggregate township.

The cost of this measure would be comparatively trifling. The overseer of the poor acting as distributor, the enumerators would thus be saved. The payments of the superintendent registrars would also be avoided, and beyond the simple office expenses, necessary to any return whatever, there would be no payments except to the valutors. This would be much less costly than the machinery of the bill of last session.

Assuming the poor law unions to average an area of 80,000 acres each, and the average number of occupiers of above 3 acres to be 20 for every 1,000 acres, or 1,600 occupiers in the whole; the cost of enumerators would be £40, and the charge of the superintendent registrar would be £4, so that the sum of £44 would be expended to ascertain the average of the union. Now as there would be scarcely 20,000 acres of corn in the assumed area,

in any union, and as the grass-land crops would not have to be valued, the valuator might very easily form his estimate in ten days—eight for the view, and two for the calculation; this, at three guineas per day, would amount to £31 10s.; or if an additional allowance were made for expenses, it would still be within the sum charged for the enumerators, and supply an impartial, clear, and accurate estimate of produce, on which to base any measure which might be required for the safety or advantage of the community in times of scarcity.

A measure of this kind would be in every respect unobjectionable;—it would silence opposition, because it would be precisely the kind of enquiry to which most of the farmers living have been subjected from time to time, till the tithes were commuted, and to which they are constantly liable on leaving or entering on a farm; and it is too reasonable and sound for any person of common sense being likely to oppose it, merely because it is put-

ting government in the possession of accurate information, when the question of providing food for upwards of 20 millions of our population becomes an element in deciding the measures of a paternal government. The cultivators themselves may derive advantage from it, but injury they cannot.

I trust that an humble farmer thus expressing the feelings of himself and his class to your Lordship, will not be taken amiss. The interest you take in agricultural matters, and the fact of your being a Yorkshireman, have induced me to address your Lordship, in preference to the Vice President of the Board of Trade—assured, however, that the hints, so far as they are practical and useful, will be received with candour and forbearance, even though emanating from so obscure an individual as myself.

I have the honour to be,

My Lord,

Your Lordship's most obedient servant,

MATTHEW M. MILBURN.

Sowerby, near Thirsk.

THE UPTON DRAINING TOOL.

SIR,—I had recently an opportunity of examining a draining tool, novel both in form and in its principle of action, the invention of a gentleman residing in this neighbourhood. As it appears likely to prove useful for deep draining in clay soils, and to be attended with a considerable saving in the cost of labour, a description of it may not be unacceptable.

It is well known that in digging deep drains, according to the usual practice, it is found necessary to make the upper part of the cutting considerably wider than is required for the cylindrical pipe to be laid at the bottom; and this occasions a waste of labour both in excavating and returning a larger quantity of earth than is absolutely needful.

The tools used for excavating the drain are of two different classes; they are either flat or curved. In the *actual use* of the flat instrument, it will be found that the workman inserts his tool thrice into the ground before he can remove the spit of earth; a thrust on each side separates the spit laterally, and the last thrust detaches it at the bottom. Great force would be required to tear the spit of earth from its place without previously detaching it at the sides. The scoop or curved tool is intended to obviate this necessity, but is not found to do so effectually in practice; the spit of earth is still not completely separated at the sides, and must either be torn away or detached by side thrusts.

It has been well shown that *friction* is the great and main antagonist which an agricultural tool has to overcome; and it will be found that the resistance offered when an ordinary draining tool is thrust into the ground is very great. My friend found reason to conclude that this resistance would be very materially diminished if the spit could be entirely detached as the tool descended. He decided, therefore, on the trial of a tool with two sides united together at the back, so that its section would be like the letter V. Considering, also, that if spits in the form of equilateral prisms could be taken out the drain would be most readily excavated, the angle between the sides was fixed at 60°—the angle of an equilateral triangle.

The advantages of the new tool are—the ease with which a considerable depth is obtained at one thrust, and the small quantity of earth required to be excavated and filled in. It is clear that the manner of using this tool is equally peculiar with its form.

Of the accompanying figures, No. 1 shows (in ground plan) the manner in which the ordinary flat tool is used in practice, the black lines indicating the place on the surface where the spade is to be inserted; No. 2 shows the same for the scoop or curved instrument; No. 3 shows the manner of using the new tool above described, and of which a drawing is also given.



FIG. 1.

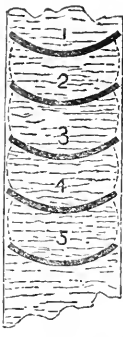


FIG. 2.

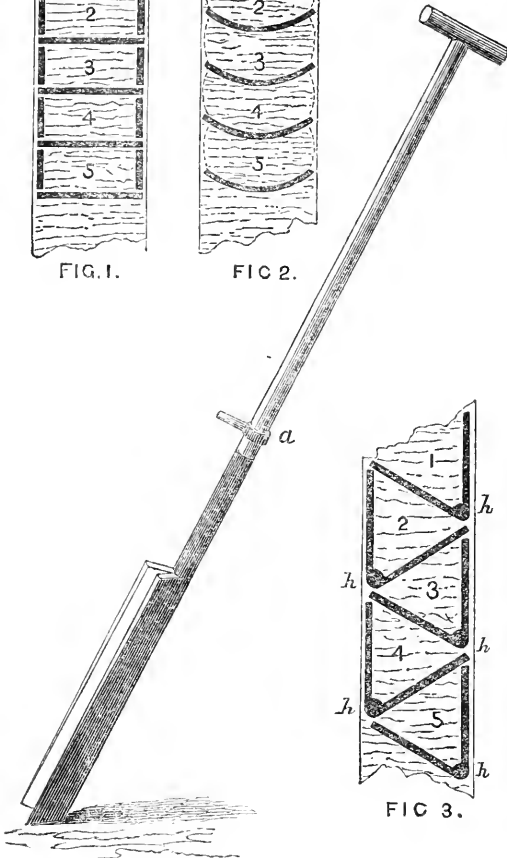


FIG. 3.

It will be understood that in thrusting in the tool, the *right* side must be kept flat against the *right* side of the drain; and when this spit is withdrawn, and the next thrust is made, the *left* side of the tool must be kept against the *left* side of the drain, and so on alternately.

The black line (V) shows, as before, the mark made on the surface by thrusting the tool into the ground; *h* indicates the position of the handle; the spits of earth marked out on the surface are numbered 1, 2, 3, &c., in the order in which they are removed. The blade of the tool is from 19 inches in length by 4 in breadth to 24 inches by 3 or 2, and the length of the handle 2 feet 6 inches to 4 feet 6 inches. *a* is a piece of iron fixed by a wedge as a rest for the foot in driving the tool into the ground.

In a district comparatively free from stones, my friend was led to the invention by the wish to ob-

viate the disadvantages described when he had occasion to drain, and he has availed himself to some extent of the facilities and economy which it offered. The success of the tool appeared to me remarkable. When the drain is once begun, the resistance offered to the descent of the tool is comparatively small; the friction is confined to the first few inches, and above that, even after considerable use, the varnish remained on several of the tools which I examined; this arises from the spit being wholly detached as the tool descends, so that there is no pressure on the upper part of the tool. A little dexterity is required in keeping the tool properly along the side of the drain, also in withdrawing the spit which has been cut out. On the latter account, it will not do to drive the tool straight down; it must, as usual, be inclined as is found convenient.

It is well to make use of two or more sizes of the tool. Of these, the first and largest takes out about 18 inches of earth; and when the drain has been excavated so deep, a smaller tool (which is usually made longer) will complete it to a total depth of four or five feet. I had the opportunity of seeing a drain, only 4½ inches wide at the top, 3 at the bottom, and 5 feet deep, excavated with ease by a boy of sixteen with these tools; the soil was a stiff loam.

On account of the diminished resistance, the great size and weight of most draining tools is rendered no longer necessary, and the handles may be much lighter.

The value of the principle of avoiding *after-resistance* by detaching the spit as the tool moves on may be illustrated by attempting to thrust this tool into the unmoved soil before an opening has been made for it to work in; a strong man cannot force it more than a few inches into the ground. This principle is worthy of consideration in the case of other agricultural instruments. The frequent practice of running the point of the ploughshare several inches beyond the coulter appears to violate it, as it has to force its own way through the unmoved subsoil. I may mention that in some very excellent ploughs which I recently examined, near Lausanne, in Switzerland (where the form of the mould-board showed the attention which had been bestowed on them), the point of the share was one inch *behind* the point of the coulter.

I have the honour to be, sir,

Your obedient servant,

Keynsham, Somersetshire.

A. MILWARD.

BAKEWELL FARMERS' CLUB.

At a meeting of the "Bakewell Farmers' Club," held on Monday, the 23rd of October—present, Mr. Gardom, Chairman; Mr. L. Furniss, Secretary; Messrs. Greaves, White, Walters, P. Furniss, Mower, Gregory, Bagshaw, &c.—

The Chairman called upon Mr. L. Furniss to introduce the subject for discussion:

Mr. FURNISS said: The subject appointed for discussion, which I beg leave to introduce to the notice of the club, is one in which the cattle breeder is deeply interested; namely, "The best and most economical system of feeding cattle during the winter months." In the first place, I beg to digress a little from the subject under notice, in making a few remarks as to the quality of stock which the farmer should possess. I conceive it to be of the utmost importance to the success of the breeder that his stock should be of good quality. I am decidedly of opinion that if there is one circumstance more than another in the routine of farming which tends to the ruin of the farmer, it is maintaining on his farm an inferior stock of sheep and cattle.

In stating what I have to say on the subject of cattle feeding, I purpose dividing the cattle on the farm into classes, beginning with

Class 1. *The weaned or rearing Calves.*—First week after birth, give 4 quarts of the mother's milk per day, 3 pints in the morning, 2 pints at mid-day, and 3 pints in the evening. Give the same quantity of new milk the second week, per day, in two equal proportions, morning and evening. The third and fourth week the quantity of new milk to be increased to 6 quarts per day. The next four weeks the calf to have 6 quarts of skimmed milk, per day, with an addition of 2 quarts of linseed gruel made from the best quality of ground linseed cake. At the end of this period, until the calf is twelve weeks old, the skimmed milk may be diminished to 3 quarts per day, the quantity of linseed gruel increased to 5 quarts per day, that the calf shall not have less than 4 quarts at each end of the day. When twelve weeks old the calf to be weaned; hay, &c., may be given to the calf when four or five weeks old. After weaning to be fed on hay, mangold wurtzel, and Swede turnips, with a small quantity of linseed cake, say half a pound per day, which will maintain the animal in a thriving condition until turned out to grass.

Class 2. *The year-old Calves.*—This class to have suitable building in which to feed and lodge; to

have access to the same early in October. The proper feeding of these animals, at this period of their existence, is of greater importance than the farmer is apt to imagine; if well supported the result will be improvement in their natural constitution, and the animals' bulk and proportions fully developed. A result the reverse will take place if improperly fed, constitution enfeebled, stunted in their growth, and consequently, when brought to market, of much less value. The food I would recommend is a plentiful supply of good hay, with one pound of linseed cake per day to each calf: if straw be given instead of hay, allow a supply of yellow or Swede turnips, not omitting to give the cake.

Class 3. *The two-year-old Steers and Heifers,* which are expected to consume the coarsest food on the farm, namely, the straw; which, of itself, is not sufficiently nutritious; in addition, give 2 pecks of yellow turnips, with one pound of cake, to each beast per day, to go out in the fields on fine days. If no turnips are given, allow two pound of cake to each beast per day. I would recommend that this class be tied in sheds open behind, having mangers in which to eat their food; thereby each beast would get its due proportion thereof, at the same time being properly sheltered from the severity of the weather.

Class 4. *The three-year-old Heifers and Steers* I would have maintained somewhat better than the two-year-olds; the heifers supposed to be incalved (the steers I shall class with the stall-fed cattle); the incalved heifers to feed upon straw until a month of calving, with 4 pecks of yellow turnip and 2 pounds of cake per day to each beast. When within the specified time of calving, give hay instead of straw, with 2 pecks of turnips, giving the prescribed quantity of cake at the same time, to be tied in sheds open behind, as recommended in class 3, until near calving.

Class 5. *The Cows giving milk.*—Give to this class a plentiful supply of nutritious food: hay alone is not sufficiently nutritious for the new calved cow. Cabbage will be a good addition; two pecks of turnips per day—more would give the milk an unpleasant flavour. Mangold wurtzel is an excellent vegetable for producing milk; give likewise ground oats, with an admixture of bran; add to which a little bean-flour, which will be found excellent, not only for producing milk and butter, but for maintaining the cow in good condition.

By all means see that the milk cow is properly housed and kept warm, otherwise much valuable food will be expended for another purpose than in the production of milk &c. Cows that have been giving milk for a length of time do not require such high feeding, but may be maintained after the same manner as the heifers in class 4. Do not give less nutritious food to the cow because she is dry for calving (condition being highly essential at the time of calving), otherwise the cow for the dairy will fail to be a source of profit to the farmer for that season.

Class 6. *The Cattle intended for stall feeding.*—In this class I would include, as before stated, the three-year-old steers, they having arrived at an age when they should be grazed for the butcher. All cattle intended to be fattened during the winter months to be housed at the commencement of November, in sheds open behind, or cow houses, as most convenient. Food best adapted for producing beef: for a few weeks at the beginning of the season give the commoner sort of turnips, to be succeeded by the yellow and Swede turnip, the Swede turnip to be principally relied on; in addition to hay or straw, give ground oats, barley flour, bean flour, and linseed cake; be sure to give variety of food. The quantity to be given to each beast will depend upon circumstances, and must be regulated at the discretion of the grazier. Other most essential points to be attended to are cleanliness, warmth, and regular feeding. Give the first meal, to consist of sliced turnips, by six o'clock in

the morning. At nine o'clock give each beast its feed of corn or cake; at one the turnips to be repeated; at 5 o'clock the feed of corn &c. to be repeated; the night meal to consist of hay or straw, hay preferable, especially if made from the artificial grasses. A system of stall-feeding cattle has been practised of late by several eminent graziers, and it is said with great success, giving to each beast one pound of linseed boiled for two or three hours in about 1½ gallons of water; added to this 2 or 3 lbs. of ground corn to 5 lbs. of cut chaff, this quantity given to each beast twice a day.

In the remarks that I have made I have kept as closely as possible to the side of economy, so as to be compatible with the well-being of the cattle, as there can be no doubt on the well-being of the cattle depends the success of the breeders and graziers. I have likewise, as much as possible, economised the hay produce of the farm, knowing it to be an expensive crop, and to the farmer's interest to avoid growing it to a great extent. The green crop system I would recommend the farmer to carry out to the greatest possible extent; by so doing he will be enabled to maintain the greatest possible amount of stock on his farm.

Mr. Furniss having closed his remarks, none of the members present appeared disposed to say much on the subject, except to signify their approval of what had been said.

The subject for next meeting: The best and most economical mode of keeping farm horses throughout the year; by Mr. Greaves.

ON SMUT IN WHEAT.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—At the commencement of the present wheat seed time, I received a circular from H. Down, Chemist, Woburn, or one of his agents, strongly recommending Down's Farmer's Friend, as a certain remedy for the smut in wheat, also a preventive to the ravages of the slug, grub, and wireworm; and containing also upwards of forty letters and testimonials from some of the first practical farmers of the day.

My clover land this year being very much infested with the slug, I was induced to purchase a quantity of the "Farmer's Friend," and prepared some wheat according to the directions given in the circular; but before sowing it I thought it would be wise to ascertain, if possible, how far unpalatable the wheat was rendered by the said preparation. Accordingly I took some of the wheat, and scattered along the seam between the furrows,

and carefully covered it with a board, to prevent the birds or mice getting to it, and left it for the night. The next morning on turning up the board I found a great quantity of slugs feeding upon it, and a great deal of the corn completely eaten, and almost every grain sufficiently eaten to destroy vegetation, the slugs apparently none the worse.

It may be a remedy to a certain degree against the smut in wheat; but as to its being a preventive to the ravages of the slug and wireworm the above experiment affords a sufficient proof of the fallacy of the statement.

I have found by many years' experience that it is entirely the farmer's own fault, who grows smut instead of good wheat. The general practice in the neighbourhood in which I live is to use quick-lime mixed in boiling water, in the same manner as

masons mix their lime-wash, and about the same consistency, applied to the wheat boiling hot.

THE MODE.

Shoot four bushels of wheat on a brick floor; one man pours the mixture on the heap, another quickly turns it over until it is completely saturated, then proceed with other portions, until a sufficient quantity is prepared. This should be done at least three weeks before sowing; but the general practice here is to sow the wheat the following day, consequently the dressing proves ineffectual, of which I had a convincing proof some years ago. I limed a quantity of wheat, intending the whole to be sown the next day; but owing to a heavy rain coming about the middle of the day, only part of it was sown: the remainder was sown three weeks after. At harvest I found the wheat sown the day after it was dressed produced a great deal of smut: that which grew from that dressed three weeks before sown was perfectly free of smut. Such being

the case, I was induced the next autumn to try the following experiments:

I procured a sample of fine wheat, also a quantity of smut-balls, and rubbed them together until completely black; I then divided it into three equal parts. The first was sown without any preparation. Second, limed as above, and sown the next day. Third, dressed in the same way, and sown three weeks after. The utmost care was taken during the following year to mark the result, which was as follows:—

First.—About four-fifths of this was smut.

Second.—Almost the same in every respect as the first.

Third.—Completely free of smut.

Should you consider this worthy your notice, I should feel obliged by your inserting it in your Journal.

I remain, yours, &c.,

A NORTHAMPTONSHIRE FARMER.

ON THE ADVANTAGES OF DIBBLING IN SOWING.

BY A MEMBER OF THE ROYAL AGRICULTURAL SOCIETY.

The practice of dibbling wheat has been carried on from time immemorial in the eastern counties of England to a considerable extent; and having lived in the district, I shall be able to give the opinion of the farmers of that part of the country, respecting the utility of the practice.

In the first place we shall consider the relative advantages of dibbling grain in comparison with other methods. Broadcast sowing was the ancient and, until the last few years, the most prevalent way of depositing the seed: but this manner of sowing has many objections; for, however evenly the seed is distributed over the surface of the soil, there will always be an inequality in the depth at which the seed is deposited; this equality of depth cannot be secured by broadcast sowing, or by the harrowing which follows that operation. Consequently the seed, lying at several depths in the soil, will vegetate at different periods; and the crop will not only be unequal in its growth, but those plants which have had an unfavourable vegetation, from the seed being exposed on the surface, or from being imbedded deep in the soil, will have acquired a feeble habit of growth, from which they will be some time in recovering. Broadcast sowing also frequently occasions a great loss of grain; for as some quantity is scattered about on the surface, it either does not vegetate at all, or very imperfectly, or is eaten by birds and other vermin. However, after

all, the greatest objection is the utter impossibility of pulverizing the land, or clearing it of weeds: in consequence of this, broadcast sowing has been superseded by drilling and dibbling.

Drilling possesses very great advantages; the seed being planted in rows, admits the pulverization and loosening of the soil about the roots of the plants, which at the same time promotes the growth of the cultivated plant, and destroys weeds. Though drilling is vastly superior to sowing by hand, yet the crowding together of grain crops in rows cannot develop their full vegetative power, for this obvious reason: the air, instead of having access to all parts of the plant, will only gain perfect access on two of its sides; and the roots in like manner will only have room to extend in a lateral direction.

The following will be some of the advantages possessed by dibbling: the roots spread and the plant tillers in every direction; the roots have a good hold of the soil, and as these derive plenty of nourishment the plant is developed in its greatest perfection; and from the room the corn has to tiller, a saving of the quantity of seed sown is effected. The small squares of land occupied by each bunch of grain will admit the hand-hoe to be used completely round the plant, and, with the exception of the spaces occupied by the bunches of grain, the whole of the ground may be cut by the hoe.

The custom of the country to which I have been

accustomed is to plant wheat on one year's clover or seeds. In ploughing up the clover layer, care is taken to have the furrows laid flat, and of as regular a size as possible. Two rows of holes are generally made on each furrow slice, by a man who uses two dibbles; walking backwards, and giving the instruments a twist as he makes the holes—the twisting motion prevents the holes filling up when the dibble is withdrawn. It has been recommended to place the two rows near together in the centre of the furrow slice, so that the wheat has a firm bed to grow in, while a wider space is left for weeding. It is found that where wheat is planted after seeds, the weeds and grass grows chiefly at the edges of the furrows, so that this part requires the most hoeing, which cannot be given it if that part of the soil is occupied by the crop. A single row of holes is sometimes placed on a narrow furrow slice; and on rich land, this method combined with a small quantity of seed may be beneficial. When two rows of holes occupy each furrow, the distance between the rows is about five inches, and the distance of the holes in the rows from three to five inches. To cover in the seed the land will require a light harrowing; this is often done with bush harrows, and even hand raking has occasionally been resorted to. When the latter practice is adopted the trampling the land with horses will be prevented.

We may now consider some of the advantages of dibbling, independent of having the seed distributed at equal distances, so that the crop grows in small bunches; a perfect consolidation of the soil is secured by the trampling of the persons employed—this on soils of a loose nature, on which the wheat crop is liable to be thrown out by the action of frost, and on land where wire-worm exists, is of paramount importance.

The cost of dibbling wheat by hand, day-wages being 1s. 8d. for an able man, is from 7s. to 8s. for two rows on a furrow, and about 5s. per acre when one row on each furrow. A man used to the work will dibble nearly half an acre in a day, and find employment for three boys or girls dropping the seed.

I have thus in a cursory manner mentioned some of the advantages attending the practice of hand dibbling, as this is the method usually practised. But we have, among many other improvements in agricultural machines, some for the process of dib-

bling, and which in all probability will in a short time be as common as the drill. The drop drill, which is a modified form of dibbling, is of great service in economising the use of expensive fertilizers; for as the manure is dropped in a small quantity immediately under the seed, a proportionately small quantity will produce an equal effect in the quick development of the young plant, and at a much less expense than if a large quantity had been sown or drilled over the surface. The planting by the drop drill applies more particularly to turnip sowing; as not only will the quantity of the manure be economised, but the turnips will be planted at the proper intervals, and will therefore merely require singling out by the hand.

The following is an experiment inserted in Mr. E. Roberts' prize essay on the Management of Wheat:—"In order to show the tillering properties of wheat when dibbled, I planted several varieties in 1843, of which the following is a memorandum; the result sufficiently shows that plants of dibbled wheat will multiply to a very great extent. October, 1843, planted 30 grains of six varieties of wheat, with a view of testing their tillering properties, as well as their time of coming to maturity. The wheat being dibbled one grain in each hole at equal depths and distances, the intervals being ten inches by four inches. The following table will show the result of the experiment:—

Variety of Wheat.	No. of plants from 30 grains.	Time of coming into ear.	Number of ears.	Average number of ears from 1 grain.
Belle-vue Talavera, white	26	June 3	234	9.
Marygold, red	26	June 14	134	5.1
Spanish Talavera, white	26	June 8	203	7.8
Spalding's Prolific, red	27	June 14	155	5.9
Jonas's Seedling, white	26	June 12	168	6.4
Shirriff's Hopetoun white	25	June 12	191	7.6

The experiment was made on a loamy garden soil."

R.

ON THE ADVANTAGES OF BREAKING UP GRASS LAND.

BY A MEMBER OF THE ROYAL AGRICULTURAL SOCIETY.

The breaking up grass land will, with a few exceptions, be a source of profit to the farmer, of employment to the labourer, of improvement to the landowner's property, as well as a means of producing a larger quantity of the necessaries of life to the public. This is a sweeping condemnation of permanent pasture; yet I think, if circumstances are favourable to the bringing arable land into the highest state of cultivation of which it is capable, there would hardly be a need of permanent pasture at all; but as circumstances are not always favourable, I shall proceed to show the causes why breaking up grass cannot be adopted by all farmers.

In the first place, the tenant is often fettered by stringent covenants, which confine him to a certain course of husbandry, and do not allow him the right of breaking up grass land; and secondly, a want of capital will often render the farmer unable to cultivate the new land to the best advantage. From a want of this, the farmer is perhaps obliged to take a succession of corn crops without manure; and in a short time the once-fertile tract of meadow becomes a barren waste of arable soil, barely paying for cropping; or should it be again laid down, it will take many years of rest to recover, by a fresh accumulation of organic matter, its former state of productiveness. It is not, therefore, much to be wondered that when grass land is brought into tillage, and scourged by frequent cropping and bad management, many landlords have put their veto upon the practice altogether. But when land is broken up by an occupier who has both skill and capital, the matter is far otherwise: the land being judiciously manured and cultivated, it will continue to produce crops of corn, roots, and grass alternately, which will more amply repay the cost of farming than if it had remained in its former state.

The cases in which the breaking up grass cannot be done with advantage are irrigated and water-meadows, and those rich and fertile marshes and grazing grounds upon which so many cattle and sheep are annually fattened; and it is to be doubted whether we should, by the most favourable calculation, be able to make a larger return either to the tenant or landlord. There are also clay soils of such a tenacious character, that the labour and expense is too great for their successful cultivation; and consequently, the cheapest way is to allow

them to remain in pasture; or if the land produces rough and useless grasses, the land may be broken up, with a view of laying down again with better and more nutritious varieties. Land liable to be flooded cannot be brought under the plough. This is also the case with pastures abounding with peat; and land of a hilly nature can, of course, more profitably be planted, or used as sheep-walk.

The direct advantage of grass-land to the labourer bears no comparison with arable land; for we shall find the cost of labour on some lands of the former kind is the mere amount of wages paid to the shepherd or person who tends the sheep, who is the only man employed on perhaps three or four hundred acres. This applies to downs, open heaths, and sandy soils, used as sheep-walks, which very rarely receive any other manure than the droppings of the sheep fed thereon.

Where cattle or sheep are pastured in small inclosures, the cost of labour will be increased by the necessity of keeping the fences in proper order, by the cost of draining on wet soils, and by carting and spreading manure, should any be used.

Grass mown for making into hay will give an increase in the price of labour, by the mowing, making into hay, stacking, and the occasional manuring, rolling, and harrowing. In Suffolk, grass is mown and made into hay at a cost of 4s. or 5s. per acre; and the other operations rarely, if ever, make up the cost to 15s. per acre; and, indeed, there are many hay-farmers who do not expend near that sum per acre. In the neighbourhood of London the meadow lands afford more employment to the labourer. A different plan of haymaking is adopted, and there is altogether a more liberal system of management pursued in manuring and the other et-ceteras of grass land farming.*

Taking the produce of inferior meadow-land, not including downs, at one ton of hay per acre, the marketable value at £3 per ton, and the value of the aftermath at 15s., it will give a total of £31 5s. per acre. The same land, taken under the plough, and cultivated on the four-course rotation, would produce, on an average, as follows:—

* From a careful calculation, founded upon data derived from various parts of the country, I have no hesitation in saying that the average expense for labour, throughout England, upon arable land, amounts to from five to eight times as much per acre as that expended upon grass land.

	£	s.
Turnips, 15 tons, at 10s.	7	10
Barley, 9 coomb, at 16s.	9	4
Straw, 1 ton, at 10s. }		
Clover, 1½ ton, at £4; and after- math at 20s. an acre.	6	0
Wheat, 7 coomb, at 25s.	10	15
Straw, 1½ ton, at 32s. . . }		
Total.	£33	9

Being an average of £8 per acre for one year.

The expenditure for labour would, upon a low calculation, amount to, per acre—

	£	s.
1st, Turnips.	1	5
2nd, Barley.	1	3
3rd, Clover.	0	11
4th, Wheat.	1	14

In describing the manner of breaking-up and tilling grass-land, I shall divide my subject into three heads; namely, down lands, cold pastures, and good meadow or grazing ground.

1. *Down lands.*—Under this head I shall allude to those soils that chiefly occur on the chalk and limestone formations, where they are often found in extensive tracts of sheep walk; these occur upon the downs of the south of England, the wolds of Lincolnshire and Yorkshire, the heaths of Norfolk and Suffolk, and also upon the limestone formations of Gloucestershire, and many other counties. Where the calcareous matter is close to the surface, the produce in grass is short and of slow growth, though sheep thrive well upon the herbage; and as the life they lead approaches towards their natural habits, they are comparatively hardy and free from disease.

These tracts include some of the most naturally barren land in the kingdom, produce a scanty covering of turf, overrun with furze, ling, and brakes; in some parts, as in Suffolk and Norfolk, the soil is often of so fine and loose a texture, as to be blown and drifted into heaps in the manner of snow, by high winds. The greater part of such lands formerly produced but a nominal rent to their owner, a scanty supply of grass to the flock-master and occupier, and but a few furze, and no employment worth speaking of to the labourer. The benefit the public derived from these lands, in their unbroken state, must have been trifling. However, some of these—in Lincolnshire and Norfolk, for instance—now grow as fine crops of turnip and corn as any in England; though it must be confessed, in many places, there is still room for improvement.

The first object to be considered, in breaking up the very light and exposed pasture, is to afford

shelter from high winds, which are a great trouble and annoyance to the farmer; for if his fields are unprotected, the chances are very bad for obtaining the means of improvement by a turnip crop. For upon a blowing sand in a windy season there will be a difficulty in getting a plant: the sand is then blown so that some of the seed is either blown with the soil or exposed on the surface, and some covered too deep for it ever to vegetate. The blowing sand also does much damage to other crops.

Belts for shelter are usually formed of Scotch firs, and these answer the purpose for which they were intended, though for timber they are of little value. Banks faced with turf are sometimes raised to form enclosures: upon these, furze or Scotch firs may be planted, and thus form an additional shelter.

We shall now proceed in bringing the land into tillage. If the soil is covered with furze or heath, the general practice is to get rid of these by stubbing them up, and burning on the spot; the land certainly derives benefit from the ashes, but the furze might be more profitably disposed of for the purpose of fuel. On calcareous soils covered with a fair quantity of turf or decayed vegetable matter, paring and burning may next be resorted to; but if the soil consists principally of sand, with a thin surface of turf, I would not recommend it. By paring and burning a thin sandy soil, we shall lessen that which already exists in a small proportion—the organic or combustible part of the soil, consisting of decayed vegetable and animal substances, accumulated by the decay of the grass and by the droppings of sheep. In all soils organic matter is found in a less or greater degree; and being the combustible portion of the soil, it is in some measure consumed by the process of burning; and it cannot but be productive of ill effects where it exists only in a small proportion to the inorganic or incombustible portion. And again, the expense of paring and burning can hardly be repaid on very light sandy land; and therefore, I should imagine, the best way of bringing such land into cultivation is simply by the plough: if roots abound, the first time of ploughing will be a troublesome operation; and it will require the attendance of a man or two, to remove them as the plough proceeds. The ploughing is best done in autumn, or the beginning of winter; for, by exposure to the frost, the land will work better in the spring than when freshly broken up; it may then be either sown with oats, turnips, or coleseed, to whichever the land is best suited. If we begin with oats, turnips may follow, then rye, which is better suited for dry sandy land than wheat, as it produces a greater quantity of straw for converting

into manure. However, the same kind of rotation cannot always be pursued on first breaking up land; as a general rule, I would never take two corn crops in succession, and if the land was fine enough, I would first take a root crop if not, oats or wheat might be grown. Wheat dibbled on a piece of land, just after being ploughed up for the first time, produces a good crop, though the practice is hazardous where grub and wire-worm abound.

After a time, the following crops may be grown with advantage:—

- 1.—Turnips, coleseed, or carrots.
- 2.—Rye or barley.
- 3.—Peas.
- 4.—Rye or barley.
- 5.—Clover one year, or seeds two years; or on a chalky soil, sainfoin for three or four years.
- 6.—Wheat.

On breaking up the sainfoin, a crop of oats, rye, or wheat may succeed, followed by turnips. In addition to what I have already mentioned, rye may be grown for sheep, and will be found to answer well for spring-feed on dry soils.

The means of improving land brought into tillage will depend upon the resources of the farmer. On fresh broken-up heath land, lime may sometimes be used; but as its effects are in proportion to the animal or vegetable substances in a soil, it will be of little use unless farm-yard manure has been used. Bones may be drilled with the turnip crop in conjunction, if they can be procured, with peat-ashes and burnt clay. The benefit derived from using bones on a chalky or limestone soil is well-known; and to this alone the improvements in the turnip cultivation of Lincolnshire may be attributed. However, the great source of the improvement of the thin soils and blowing sands, and indeed of a very large portion of Norfolk and Suffolk, is the application of clay, marl, and even chalk; or, in other words, the admixture of the subsoil with the surface. Where clay or marl can be found within a few feet of the surface, its application, as a means of improvement, is not so expensive an operation as may be imagined, and the results it has produced are most satisfactory to the light-land farmer. A moderate dressing of 50 cubic yards per acre can be applied at a cost not exceeding 35s., if the carriage is not more than a quarter of a mile; of this, 12s. will be for the labour of filling and spreading. The clay, if it is of a good quality, will effect a permanent improvement upon the soil by giving it a firmer texture and adhesiveness, and it becomes more retentive of moisture, so that the crops are the better able to withstand a dry summer; clay

also prevents the injurious blowing of loose sands.

2.—*Cold Pastures*.—Under this head may be classed grass-lands which are wet, cold, and tenacious; and also peat and fenny-land, lying on the borders of rivers and other situations. When the soil consists of a very stiff, tenacious clay, difficult and expensive to work, the advantage of breaking up grass is much questioned; but, nevertheless, if the farmer has spirit and money, it may be done with advantage; and there are no soils which, by being brought into cultivation, will give so much employment to the labourer, and by that means be a public good. The quickest and perhaps the best way of bringing cold pastures into a fit state for tillage is by paring and burning, for here we are not likely to do that injury by it as on light sands. On clay soils burning will in a great degree reduce the stiffness and tenacity.

With us, the expense of paring and burning varies from 25s. to 30s. per acre, and is almost entirely done by manual labour by means of the paring spade, or, as it is sometimes termed, the breast-plough; when dry, the flags are burnt in small heaps, distant from each other 5 or 6 yards; each of which, when burnt, contains six or seven bushels of ashes; but this, of course, varies with the thickness of the flags and nature of the soil. The whole of the ashes are generally spread upon the land, though it is good policy to cart a portion of them away for drilling with turnips.

The operation of paring is commenced in March, and if the weather is favourable, the burning is completed in time to plough for a late crop of oats; but, should it be too late, coleseed will serve as a substitute. Oats and coleseed are grown as the first crops both on cold clay and on peat; and are, I think, well chosen. New land always produces bulky crops of straw and bad quality of grain. Oat straw is most valuable for feeding; and the prime quality of oats is not of so much importance, as we usually consume them at home.

Coleseed, independently of its succeeding well on new land, is to be preferred to turnips, on wet land, as it may be fed-off during summer and autumn.

Burning the surface soil of cold clayey soils has been proved to be a great source of amelioration; and, next to draining, it is probably the most important aid the farmer possesses. The soil is dried and burnt in large heaps with coal or wood, at an expense of about 5d. per cube yard.

Draining and Burning are found to bring a clayey soil nearly upon a level with a first-rate loam; the same kind of crops are grown, and the expense of cultivation is about the same, where it has been carried to its full extent, as upon some farms in Worcestershire.

The following crops may be taken on freshly broken clay lands:—

First year, Coleseed; 2nd, Oats; 3rd, Beans; 4th, Wheat; 5th, Turnips, swedes, or beet; 6th, Barley; 7th, Clover, followed by oats or wheat.

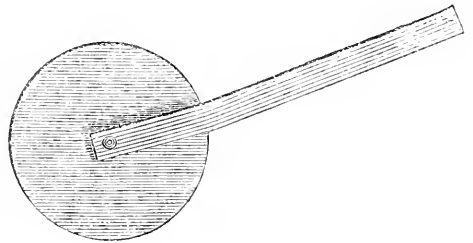
I shall now give the details of the practice pursued in breaking up a loamy soil, resting on a subsoil of clay, intermixed with veins of sand and gravel. The pasture was coarse and rushy: the value in rent could not be reckoned more than 15s. an acre.—1st year of breaking up: Pared and burned at a cost of 27s. an acre; the land was then ploughed and sown with Skirving's swede: a very fair crop. 2nd year: Partly drained during winter; the field was unlevel, and was made dry by running drains along the low parts, then planted with spring wheat: a very bulky crop, though the yield was not more than six loads an acre. 3rd year: Winter tares fed off by sheep in June; the land was then sown with coleseed, fed off in October. 4th year: Wheat sown with Italian rye-grass, produce about nine coomb per acre. 5th year: Italian rye-grass, mown three times for soiling, and then fed with sheep. The land is now being clayed at the rate of 40 cubic yards per acre. The extra amount of manual labour during these five years would be per acre—1st year; Tillage, 4s.; paring and burning, 27s.; total 31s. 2nd year: Drains, 20s.; tillage, 4s.; hoeing, 3s.; cutting, carting, and stacking, 12s.; threshing, 10s.; total 49s. 3rd year: Tillage, 9s.; hoeing, 4s.; mowing tares, 2s.; total 15s. 4th year: Tillage, 6s.; hoeing, 3s.; cutting, carting, and stacking, 12s.; threshing, 10s.; total 31s. 5th year: Mowing and carting off rye-grass, 8s.; claying, 8s.; total 16s. The total for five years is £7 2s., or for one year £1 8s. 5d. This is direct advantage to the labourer, as the land in its state of pasture gave but little employment, except for tending sheep, and this is amply balanced by the labour of feeding sheep on the alternate system; besides which, the labour attending the making straw into manure has not been reckoned.

On a peat soil, which produced abundance of rough and poor grass, of but little value (for, notwithstanding its bulk, cattle thrive but little upon it), the following system of breaking up and tilling was practised:—The meadow was bordered by a small stream, by which it was occasionally flooded; this has, however, been put a stop to by heightening the banks, and by digging an open ditch to receive the overflowing water, at a distance of about 9 or 10 yards from the river bank. In bringing this soil into cultivation, paring and burning was again resorted to at a cost of 27s. an acre. The land was then sown with coleseed, and produced an abundant crop; next year, oats; then coleseed again; then rye, with which grass seeds are to be sown in the spring. Rye may not appear well suited to this

kind of land, but it is thought to be better for sowing with seeds than oats, as it is not so liable to destroy the young grass by being laid.

On another field of the same kind of land, pared and burned, we grew coleseed, cabbages, and oats, with which Italian rye-grass was sown; this grew so fast, and appeared so well suited to the soil, that it was mown for soiling four times in a year, and produced more than double the bulk as well as of a better quality, than the soil had ever done in any previous year of permanent grass. The rye-grass remained for two years, and was followed by oats.

In ploughing up freshly broken peat, and other soils free from stones, in place of the common plough-coulter an instrument called a cutting coulter is used, and does the work cleaner and better: it is formed of a circular piece of iron, sharp at the edge, and about ten inches in diameter; it is fixed on a stalk by a small axle, upon which it turns when the plough is in motion; but it will be a better explanation if I make a rough sketch—



In the improvement of peat the practice of claying stands next to drainage; for, though we may have rendered our peat soil dry, yet it is often of so loose a texture that corn cannot be grown without much danger of losing plant in winter by the action of successive frosts and thaws, or of its becoming root-fallen in summer from a want of sufficient firmness in the soil. The application of clay will correct the want of tenacity, and give the roots of grain crops a better hold upon the land. In the fenny districts of Lincoln and Cambridgeshires clay is frequently found close to the surface, and is often dug by making trenches and throwing out the clay without any aid from horses or carts. Bones have also tended to produce a high degree of fertility in all well-drained fenny soils. Lime is also beneficial, and tends to reduce the inert vegetable matter of a peaty soil.

The following is a rotation resembling in some respects the course of cropping of some of the best fen farmers:—Coleseed, drilled with bones; Oats; Seeds, clover, trefoil, or Italian ryegrass, for one or two years; Wheat; Beans; Oats.

3. *Good Meadow or Grazing Ground.*—The advantage of breaking up land of this description is much doubted; and before doing so, it will always be a matter of serious consideration to both the landlord and tenant. Productive meadow land will certainly be as fertile arable as it has hitherto been fertile and productive in grass; but it is very difficult to determine whether such land is most profitable to the agriculturist in grass or in tillage. When doubts like these exist, it is perhaps as well to allow the meadows to remain as they are; for it is a hard matter to restore to broken-up land its good covering of permanent grass: for though we shall be able to produce abundant crops of clover or ryegrass for a year or two, yet it will take several years when laid down again to recover its former goodness. Nevertheless there are certain cases in which even the most productive meadow land may be broken up with advantage to the farmer, though more particularly to the labourer. I mean in those places where the number of labourers is such, that the farmer is obliged either to maintain them by poor-rates or by finding them employment. In such a case as this, it must be an advantage to break up the most fertile pasture. By doing so, the farmer will not only find employment to the poor, but produce more of the absolute necessities of life; and thus become a twofold benefactor to the public. However, where the calls for the employment of the labourer are not so urgent, we must take another view of the case, and be guided by our account of profit and loss; and if we find permanent grass the most profitable, it will be folly to pursue a practice to our own disadvantage. In the neighbourhood of London, for instance, where the management of hay meadows is perhaps better

understood than any other part of the country, hay farming is made profitable by a good market. It would therefore be imprudent to exchange the cultivation of hay—which by its bulk is out of the reach of competition from distant and cheaper districts—for that of corn, or the business of grazing sheep and cattle, as he then would have to compete with articles brought to market at an expense for carriage not much exceeding his own. And again, it would be foolish to convert the rich grazing land of Lincolnshire and other places, where the grass is naturally so fattening that it requires no aid from corn or other artificial food to bring cattle and sheep to perfection.

In breaking up good meadow land, as well as all soils rich in decayed vegetable matter, paring and burning may be resorted to as the readiest way of bringing grass into tillage, and of forming the unyielding and tough sward into a fit state for the reception of the seed of coleseed, or oats, or whatever is first grown. Where the inducement of breaking up grass land is to give employment to the labourer during winter, digging, or even trenching, may be resorted to as a means of getting rid of the toughness of the grass.

I shall not give any further details of the cropping on good soils, as when good meadow land is broken-up the land may be farmed in the same manner as superior arable land of the same description. Remembering it is a good maxim not to take too much from the land at first without returning anything in the shape of manure, as many are apt to do when they see the first crops of corn so very abundant in straw; and they therefore continue to grow corn crops till they get but little of either straw or grain.

TENANT-RIGHT.—BURTON-ON-TRENT FARMERS' CLUB.

At the meeting held on the 12th October, there were present a large and influential portion of the members, and several visitors. The President, R. C. Chawner, Esq., took the chair, and in discharge of his engagement to bring forward the subject appointed for discussion, read the following paper:—

“What should be accounted dilapidation of the land, and what improvement, and in what respects might the customs of this part of the country be altered with advantage to the progress of good farming, and to the interests of both landlord and tenant.”

Gentlemen, having the honour of being the President for the year, of this club, I could not hesitate when requested by the committee to undertake the task of introducing to your notice the above important subject, involving as it does the question

of tenant-right. The subject is not a new one, for it has been discussed in various forms in this club on previous occasions. The greatest possible interest has always been evinced by the members of this club upon the question of tenant-right, and it has been their unanimous opinion that, by full, fair, and free discussion, a satisfactory settlement of the question might be arrived at. I may now congratulate the club upon the present position of this question, not only with reference to the legislature, but to public opinion as expressed at various clubs and agricultural meetings, as also through the press. You are aware, gentlemen, that a committee of the House of Commons was appointed early in the last session of Parliament, upon the question of agricultural customs. You know also that much valuable evidence was collected, and that a report was made by that committee. I rejoice to see that evidence and report before us. The farmers of England have

at last obtained their blue book. They have now, as I hope and believe, the material for successful legislation upon this most important subject. But before I enter into detail, or call your attention to particular evidence, evidence the more valuable because sifted by a committee taking some pains to show their hostility to legislative interference, I wish to place this question upon its true basis, and to divest it of that personal character with which it has for some time been so pertinaciously surrounded. The very name of tenant-right has been objected to, and the claim has been most unfairly represented as an unjustifiable and impertinent interference with private property. Had this been true the subject would never have obtained the attention of this and similar societies, would never have been referred to a committee by the legislature, nor should I have been at the present moment its humble but sincere advocate.

If we fail in showing that the adoption of a tenant right will secure the interests of the landowner and labourer, as well as the tenant farmer, we have no satisfactory grounds for an appeal to the legislature. It is a notorious fact that a very large proportion of the land of this country passes from one occupier to another every year. It is equally notorious that with some exceptions such land (whether it be held under lease or by annual agreement, written, or simply according to the custom of the country), is, in its transition from one to another, purposely deteriorated and reduced in condition; thus impairing the landowner's property, the in-coming tenant's capital, and worse than all, depriving the labourer of his continuous employment, and thus threatening his very existence. If we add to this the fact seriously affecting the public interest—that in almost every instance of change of tenancy, under the present system, is introduced a serious diminution in the supply of food—we shall be fully borne out by the evidence before us. Mr. James Stewart, an eminent barrister, who has paid considerable attention to the subject of the rights of in-coming and out-going tenants, thus describes the present state of the law:—"I conceive the law to be this, that if the tenant in any way improves the land let to him, either by erecting fixtures or by manuring the land, or by any other thing that goes to improve the land, either by that which is temporary in its nature, or that which is permanent, I conceive that he has no right by law, independent of custom, or going off the land demised to him, to claim anything either from the landlord or the in-coming-tenant."

Such then being the state of the law, and custom being the only protection for the tenants, if we can show that such protection is totally insufficient, we have a clear right to ask for recognition at least, by the law, of that property of the tenant which is employed in making valuable the property of the landlord. Mr. Stewart also says, in reference to legislation on this subject:—"I think the rule should be that the right of the tenant should be admitted;" and he being the first witness called, adds in conclusion, "If there were a body of evidence collected upon the subject, then it is possible that legislation might be advised upon it." Mr. C. W. Hoskyns, also a barrister, is of opinion that a species of court of arbitration should be established, by which the

tenant-rights might be ascertained. Mr. C. T. Beasley, gives evidence as to the customs of Lincolnshire:—"The usual compensations in South Lincolnshire are as to tillage, manure, and draining. The whole of the last year's bill for bones is allowed, when only a crop of turnips has been taken; one-fourth part of the cake bill is allowed, which is ascertained by producing the bill for last year. We have found it desirable to promote the tenant-right as much as possible. The tenant (having the permission of the landlord), upon receiving notice to quit, continues the same manner of cultivating, with the assurance that he will be paid for all acts of labour performed between Michaelmas and Lady-day; that is, sowing wheat, and ploughing the land ready for the turnip fallows. He is paid for the herbage upon the land that is sown with wheat seed. The custom," he adds, "in regard to draining is to allow the out-going tenant the whole expense incurred, where he finds the tiles, during the five preceding years, divided over five years; if the landlord has found the tiles, the tenant is allowed only three years for the labour." Mr. Beasley considers the tenant-right as now existing in Lincolnshire to be in a satisfactory condition, and yet he says, "The tenantry of Lincolnshire would be glad to have the custom which now prevails in Lincolnshire secured to them by an act of Parliament. I think," says Mr. Beasley, "a man who had a family would feel more confidence in farming the land, if he knew that his wife and children, if he died, and they could not continue the cultivation of his farm, would be paid for any unexhausted improvements."

I will not multiply these quotations, but rather refer you to the whole evidence, and proceed to direct your attention to those gentlemen (witnesses), who are opposed to legislative interference. A question was repeatedly asked by a member of the committee to this effect, "Can you not effect by private agreement, the parties being willing, all that you expect from legislation?" Now it is most true that if the golden rule of, "doing unto others as we would they should do unto us" was observed in its most comprehensive sense, no legislation would be necessary; but, unfortunately, we have to grapple with the fact that a great portion of the land is not held under agreement; that the tenant is left to the custom of the country; that such custom is ill defined, often contradictory, affording little or no protection to the tenant; and that the consequence of such a system is, depreciation of the landlord's property and the tenant's capital. The very reverse of all that takes place where an equitable tenant-right has been agreed upon. Mr. Clutton argues that, because certain customs in Surrey have a mischievous tendency, legislation would perpetuate them, and therefore prejudice the interests of landlord and tenant. The continued existence of bad customs rather proves the necessity for legislative interference, not to perpetuate, but to abolish them, by restricting the tenant's compensation to such unexhausted improvements as must, in his change of tenancy, become the property of the landlord or the in-coming tenant. You will observe, in examining the evidence of those gentlemen who are opposed to legislation on this subject,

that they one and all approve of certain extensions of tenant right, viz., as for drainage, buildings, cake, bones, chalking, marling, and liming; in fact, the extension of tenant-right as it prevails in Lincolnshire, to other districts at present possessing no similar advantages.

I will now proceed to state in detail how far, and in what manner, the interference of the legislature is necessary and desirable; and it is here more particularly that I expect to receive the benefit of your several opinions. I quite concur in the observation made by a member of the committee, "that if practical men who have turned their attention to this subject are unable to point out a satisfactory mode by which this question may be arranged, we shall look in vain for relief and assistance to that mystery called the wisdom of the legislature."

By the term "unexhausted improvements," I mean that portion of the tenant's property which he must of necessity leave in the land for the benefit of the owner or the incoming tenant. The recognition by the legislature of that property is what I especially desire to obtain; convinced as I am that the additional capital which is required for the proper cultivation of the soil would be speedily brought into action by the confidence which would be excited by the enactment of such a law; and thus would be secured the interest of all parties connected with the land. Taking into consideration the extension of tenant-right in certain districts, by the various additions which have been made from time to time to the local customs, and believing in the future progress of agriculture, I look to the appointment of arbitrators, with an umpire, as the proper means for securing to the landowners and the tenant their respective rights in every case of change of tenancy, whether such tenancy be by lease, agreement, or simply according to the custom of the country. The arbitrators would be called in (one by each party), men of practical experience, but the umpire should be a man having a knowledge of evidence. I believe that the judge of the county court would be an eligible umpire. In all cases of tenancy by lease, or agreement, the duty of the arbitrators would be restricted to this point, viz.—the satisfactory fulfilment of the covenants, or the carrying out of agreement fairly and impartially. In the absence of all agreement the arbitrators would have to consider that part of my subject, "What should be accounted dilapidations, and what improvements."

Dilapidations are already legally considered, and I trust that improvements will ere long be placed in the same position. Equal facility in obtaining compensation ought to be afforded to both parties. A schedule of the claims on either side should be produced to the arbitrators. In the list of dilapidations would be enumerated, neglect of buildings, drains and fences, crops, cropping, or crops out of proper rotation, and any other act by which the productive power of the soil was diminished, so far as it might be possible to bring it into detail, supported by evidence. Such dilapidations to be taken as a set-off against any claim for compensation.

Improvements must be considered as permanent or temporary. The former includes buildings, drains, extensive works of irrigation, roads and boundary fences; with respect to these it appears

only just and reasonable that the landlord should have notice—an opportunity to assent or object to such improvements. The committee are of opinion, as expressed in their report, that the tenant's privilege of removal, with respect to fixtures set up for trading purposes, should be extended to those erected for agricultural objects. With respect to the other permanent improvements, the application of the same principle is generally conceded, and further (as stated by Mr. Hoskyns), the same analogy must necessarily be followed in degree throughout the class of improvements which are less permanent, viz.—alterations which change the constitution of the soil, as marling, chalking, or claying. The more temporary improvements would include artificial food and manures, to which I believe the customs of this part of the country do not extend. These two main questions of dilapidations and improvements should (in my opinion) be settled between the landlord and the off-going tenant, without the intervention of the incoming tenant, and for these reasons the productive power should be kept up in the land to the period of the expiration of the tenancy; and this would be done if the tenant could look to the landlord for remuneration from his continuing to lay out his capital up to the time when he could not any longer receive the interest of it back, in consequence of leaving the farm: he then ought to receive it from the landlord, who ought to make a new agreement with the incoming tenant. In making the new agreement the landlord might then put his outlay to the out-going tenant in the shape of rent upon the incoming tenant, and not take from him that capital so necessary for the cultivation of the land. I may add, that the landlord is as much interested in the question of improvement as that of dilapidation: as he receives for the latter, he should remunerate his tenant for the former. He would thus be practically taught the advantage which an equitable and extended tenant-right would confer on his own property. The same power which the landlord now possesses over his tenant for the recovery of his rent (which I would extend to dilapidations), should be granted to the tenant for the recovery of his compensation; or it might be made a rent-charge upon the land, the same as the tithe commutation. It has been suggested, in order to facilitate the business of the arbitrators, that the tenant should send in a list of items to the landlord, at the end of each year, upon which he intended to claim compensation. I have some doubts whether such a plan would work well in practice. In addition to the schedule of claims which the tenant must produce to the arbitrators, the landlord ought by his agent to have free access to the farm, to make his own inquiries, and might rely upon the evidence which his arbitrator would call for in proof of the tenant's claims. The arbitrator must have reference to the customs of the district; but they should require proof of expenditure, either in labour or manure, as in the case of half tillages and half manures claimed by custom in Surrey. They should also have the power of awarding compensation for unexhausted improvements, although any improvements may not be recognised by the existing custom of the country: thus extending the tenant-right,

as has been done in Lincolnshire with such great success. I must here add, what I stated to the committee, that in all annual agreements the present notice to quit should be extended from six to twelve months, this being as short a period as will enable a tenant to change his position, to sell his stock, and invest again under totally different circumstances. In reference to our local customs, I may say that they are meagre, insufficient for the protection of the tenant, ill-defined, and varying in every locality. In addition to the uncertainty of the customs, a tenant claims to quit as he entered; and in many cases he has entered upon a farm without observing the usual customs, and probably claims the right of selling off hay, straw, and manure, thus increasing the difficulty of effecting any arrangement between himself and his landlord. In addition to the claims for compensation for the permanent improvements, of which the landlord has had notice, viz., building, draining, and irrigating, and of which the arbitrators must determine the unexhausted value (and here I beg your attention to the evidence of Mr. H. Blandford), I would add to our own the admitted customs of Lincolnshire, which are detailed in the evidence of Mr. Beasley, already quoted. I will only add that for marling and claying the outlay is spread over four years, securing a great amount of employment to agricultural labourers in the winter.

I must not omit to draw your attention to the report of the committee, for although the suggestions for legislative interference are few, they are sufficient to prove that, in the opinion of the committee the present state of the tenant-right question is by no means satisfactory. In addition to the recommendation as to an improvement in the law as regards agricultural buildings, they report—"That it seems desirable that estates under settlement should be endowed with every practicable privilege which is attached to absolute property;" that is, in plain language, that landowners thus situated should be enabled by law to grant just and extended tenant-right, which they now cannot do. The committee seem alarmed at the practical difficulties which surround the question, and their suggestions for future legislation are consequently very limited. I must, however, in conclusion, gentlemen, presume to express an opinion, that great as may be these difficulties, the considerations upon which the claim for tenant-right is founded are so serious and important that an earnest attempt ought to be made to legislate upon this subject in the very next session of Parliament. The individual interests of landlord and tenant cannot be separated from the two great questions—the employment of labour and the supply of food. Constantly increasing as may be the demand for food, great as may be the number of able-bodied (and ere long, I fear, of unemployed) labourers, the food could well be supplied, and the labour usefully absorbed, if that additional capital, which an honest adjustment of this question would render available, was brought to bear upon the cultivation of the land.

Mr. ROBINSON, of Tamworth, expressed pleasure that this important subject was receiving so much attention. It was certain that the laws re-

lating to tenants' compensation were not in a satisfactory state; and the more the subject was examined, the more clearly it would appear that the interests of the tenant and those of the landlord were entirely one and the same, and every day would add to the number of those who desired an alteration of the law. He was not prepared to say that the exact estimation of the respective rights of the owner and occupier could in every case be arrived at; but he had no doubt that the attention of Parliament being once directed to the discovery of a remedy for a manifest defect, some satisfactory method of valuation, and a safe means of enforcing it, would be found. He was glad, therefore, that Parliament had begun the inquiry.

Mr. JOSHUA HARDING agreed in almost all that had been so ably set forth in Mr. Chawner's paper. Of the several hindrances to the advance of the practice of good farming, none was so serious as the want of protection to the capital invested in improvements. There was no lack of knowledge, if farmers dared but put it in practice. He was of opinion that a sufficient definition of the tenants' rights could not ever come from a continuance of the present dependence on customs, which were so uncertain and various. A legislative enactment was necessary, and he was glad that there was now a good assurance of the attainment of one. He agreed with Mr. Chawner that farm buildings erected by the tenant should be placed on the same footing as those erected by persons in trade. As to draining, he thought the compensation made for it was commonly too low, but he did not quite go the length of Mr. Blandford in estimating the tenant's fair interest in it.

Mr. ROPER thought it expedient that the various customs should be superseded by a legislative measure, which should declare the principles on which compensation was to be given to the tenant. He did not see any great difficulty in estimating improvements, nor in apportioning to the tenant his fair interest in them. If it had been relevant to the subject under discussion he would have had pleasure in stating his views on the exact mode of compensating various kinds of improvements. In all cases the rate of compensation should be such as would stimulate a tenant to make improvements. A tenant might receive back the cost of drainage in five years by the augmented productiveness of his land; still, if the interest of the tenant in drainage was limited to five years, it would not operate as an inducement to that kind of improvement: yet he thought there should be a limit.

Mr. WORTHINGTON was sorry to say that in conversing with landlords on the subject of a tenant-right he had generally found them averse from any legislative interference with the relations of landlord

and tenant; they had a belief that somehow or other something was intended which was at enmity with their interests. That was a fancy which could only arise from an imperfect examination of the matter. Landlords, as a body, were not apt to look after their own business, and had not the best eyes in the world to see what was best for themselves. He hoped the spectacles furnished by this club would, in time, enable them to see the matter in its true light. If it was true that the landlord was benefited when the land was improved, it must be equally true that it was his interest to offer every inducement to a tenant to improve it. A tenant could improve land without making the land worth more to rent, and after a time the improvements would become the landlord's. It was in vain to expect men to exert themselves unless you offered the necessary inducements; and when a tenant is not legally entitled to remuneration, he has more inducements to forbear than to make improvements. Put the most favourable case, where he was pretty sure his possession of his farm would be continued to him, yet he would ask what might become of his wife and children in the event of his death? Perhaps the wife would find it best to leave the farm: then what becomes of the capital wasted in improvements?

Mr. W. T. S. DANIEL, of the Chancery bar, observed that as he had no practical knowledge of farming, he felt diffidence in addressing any observations to the meeting upon the subject. The Chairman, however, had stated that the question was one upon which the views of a practical lawyer might be of service. He (Mr. D.) had often felt astonishment at the difference in the law as to the rights in respect to improvements made by tenant traders and tenant farmers. The law favoured trade and commerce, but left the interests of those engaged in cultivating the land to take care of themselves, and the result had been that the tenant's rights had been very much neglected. The farmer was as much a manufacturer as the cotton spinner. Corn and beef could only be produced by the skilful application of capital and labour, and were as much a manufacture as a table-cloth, or any like article of convenience or luxury. The right of the tenant farmer to compensation appeared to him so clear that it could not be much longer withheld, and he had often thought that it would have been conceded long ago, if farming had been considered a trade. The consequence of its not being so considered had been that farmers were not subject to the Bankruptcy laws. This, which had been considered a favourable exemption, he believed had been prejudicial to the interests of farmers as a class: he thought that if their estates had been administered in bankruptcy, their creditors, who probably had supplied

the very materials by means of which improvements had been made, would have succeeded in establishing against the landlord the tenant's claim. The principle of a tenant-right would require some modifications to adapt it to holdings from year to year, and to leases for a term of years: but he did not think that minute legislation on the subject would be desirable. Over legislation was one of the evils of the day. Once establish the principle, with its proper modifications, and he thought it might be safely left to the good sense and experience of practical men to apply it. He agreed with Mr. Chawner that it could be very well done by arbitration of competent men. He doubted, however, whether, as suggested by Mr. Chawner, the judges of the County Courts should be the umpires. These judges could not generally be possessed of sufficient practical knowledge of the subject; and as their districts were fixed, he felt some jealousy of their decision of such matters. It was impossible altogether to be proof against the influence of neighbourhood and caste, and he thought the safest way would be to leave the choice of the umpire to the arbitrators, according to the usual habits of men of business.

Mr. CHAWNER said that during the inquiry by the parliamentary committee, the question was often asked of the supporters of a legal tenant-right where they would find men of skill and experience capable of deciding the questions that would arise.

Mr. DANIEL thought it was a sufficient answer to the question to say that when once a demand for such men arose they would surely be forthcoming. If upon the first railway bill, Mr. Geo. Stephenson had stated that he expected to live and see what is now seen—trains travelling from London to Liverpool in six hours, at the rate of fifty miles an hour, stage coaches superseded, and post horses abandoned—and if he had been asked where he would find the working men to manage the engines travelling at such speed, he might have had difficulty in answering the question. But these anticipations had been realized, and the men needed to realize them had arisen at the call of the occasion. And so it would be in every other instance; whatever the public interests require, which human skill could supply, would always be forthcoming when the emergency arose. Let but men be free to direct their talents, and exert their energies to any useful design, and it would be accomplished, if it was within the compass of man's power. Freedom was the mother of improvement and progress.

Mr. J. ORDISH thought it would be more satisfactory if the landlord in all cases supplied proper buildings for the use of the land. The rain drains should also be made by him. The tenant should only take on himself the less heavy, but not less

important, operations of draining and improving the texture of the soil, by marling, &c., and enriching it by extra manures. For his part he did not know how any one could refuse his assent to the tenant's being fully compensated for what he did. He would give seven years' interest in marling, but was not disposed to think that artificial manures need have any long date assigned them.

Mr. GRETTON said that after the paper of Mr. Chawner, and the able arguments of Mr. Daniel, he was in no doubt that it would be just and expedient that a recognition of the tenant's claim to all unexhausted improvements should be embodied in the law. A tenant should certainly be compensated for improvements, as he is made to pay for dilapidations. Still, he was of opinion that a long lease would form the best tenant-right, and that where improvements were needed, no mode of tenant-right was so good as that which left to the tenant the risk of the unskilful, and the reward of the skilful, application of his capital.

Mr. DANIEL reminded Mr. Gretton that to secure the land from dilapidation at the end of the term of a lease, and to enable a tenant to expend his capital at that period in fertilizing the land, for the benefit not only of himself, but his successor, a tenant-right was equally necessary in the case of a lease, as of a yearly tenancy. To this Mr. Gretton assented.

Mr. W. HOLLIER was glad to see this subject so ably taken up; he agreed with Mr. Chawner that the principle of compensation ought to be that which was advanced by Mr. Blandford. The improvements of the tenant should be taken at what they were worth when he quitted the land, without regard to the time he might have enjoyed them. He had seen drains that had been laid twenty years apparently as perfect as at first, and, in his opinion, the tilth of the tenant lasted as long as the benefit rendered to the land by what his capital and skill had done to it.

Mr. G. GREAVES not having had the advantage of hearing Mr. Chawner's paper read, could not address his observations to it, but would state his view of the changes required, in the arrangement between the on-coming and off-going tenant. It would be useless to advert to the customs of this neighbourhood particularly; he would confine himself to pointing out the main features of what he considered the best system. The on-coming tenant could scarce have too much to pay for unexhausted temporary improvements of the land, but he should have as little as possible to pay for the things that were permanent, and the produce of the land itself, and the operations of the off-going tenant. The farm manure should be left on the farm, as belonging to it; but extra manures should be paid for.

Fodder and straw should be left at a consuming price, because the manure in them belonged to the land. But he thought a tenant ought to have the power of carrying off hay, &c., on quitting, on condition of paying the price of as much manure as it would have made. If a tenant paid for manure on entering a farm, the capital he advanced for it lay dead until he quitted the land; it returned him nothing. It was not so in his advances for crops, or tillage operations, or produce; for these he was repaid in his first year for any advance of capital on them. It did not, therefore, much signify whether the land was entered at Lady-day or Michaelmas, merely on account of the capital required; but it was, he thought, better to enter at Michaelmas for another reason, namely, that the on-coming tenant would then have to pay for less labour done by the off-going tenant, and thus avoid the risk of paying for things that had been done unskilfully. Yet a Michaelmas entry was inconvenient to the off-going tenant, and the interests of both parties were of equal importance. As to payment for farming operations, all customary work done by off-going tenants must be paid for, though sometimes they may have done but little service to the land. It was true that a full luxuriant crop often cleaned land more than a slovenly fallow; nevertheless the fallow must be paid for if the work has been well done. The principle of the present customs was, that the on-coming tenant should pay for the benefit the land had received by what the off-going tenant had done for its future productiveness. The customs would fulfil all the purposes of a good tenant-right if they were but altered to the model of the best among them, and made to include improvements which were not thought of when they first arose. It seemed strange that custom should so often allow manure to be paid for, which belonged to the land, and yet, that manures actually carried on to the land should not be paid for; yet so it was. He saw no difficulty whatever in adjusting claims for improvements on the principle of the present customs. Any competent man who was told what a tenant had done to land in the way of improvement, and how he had farmed it, would be able to say what the tenant ought in fairness to receive. He thought you could not enter into detail and declare by law that certain things should be paid after this or that date. But it could easily be declared that what was really beneficial to the land, and had been done for the prospective fertility of it, should be compensated according to the judgment of arbitrators fairly chosen. Such parties as did not choose to abide by such a law might enter into special agreements to modify it just as the present customs were modified by agreements now. As to what should be accounted improvement or dilapi-

dation, it was manifestly such things as fencing, draining, marling, manures brought on the land, and extra produce consumed on it. But if a farm was left with pasture well laid down by the tenant, or if he took it after being over-cropped with corn, and left it with a greater proportion of well-laid seeds, and fallow green crop, the improvement was equally decided, and a tenant would give more to take to land in such better state. If, on the contrary, land was taken with much grass, clover, and green crop, and left in stubble, it was dilapidated; and no one would deny that a landlord had as good a title for compensation for dilapidation as the tenant for improvement. He thought it a bad plan for a tenant to pay for all seeds or grass, &c., on entering, and receiving for all when he left; he should receive or pay only for the excess over, or deficiency under, what was on the land at his entrance; he would thus not have so much dead capital in the land, and it was important for a tenant to avoid all outlay of capital which was not to return him a farming profit.

Mr. W. HIGGOTT spoke in favour of the practice of entering at Lady-day as more convenient.

Mr. WAGSTAFF agreed that compensation ought to be made on a tenant's improvements according to the principle laid down in his evidence by Mr. Blandford; but regard should be had to the actual benefit done to the land, and the landlord should not be obliged to take to buildings which were unserviceable to the farm—such, the tenant should have the power of removing.

Mr. A. BASS had on former discussions of this question been accustomed to say a few words on its legal aspect. Mr. Daniel, however, had so well

trod this ground that he would not attempt to halt after him over it. The club had reason to be proud of enlisting his valuable assistance in a cause of which it had from its first origin acknowledged the justice and importance. He congratulated the club on the present aspect of the question; as, however humble its efforts had been, there had gone forth from it something which certainly had not been without its effect on the opinions of the general body of farmers. The refusal of a fair legal tenant-right, in his opinion, could not be continued. Common justice demanded it, and it was a manifest absurdity, as well as injustice, that a state of the law should exist, in which a landlord might claim and recover compensation for a pound's worth of dilapidation of a single field, at the same time that a thousand pounds' worth of improvement had been done by the tenant on the whole farm.

Mr. GREAVES said that such a case had actually occurred. Mr. Smith, of Dishley, had a verdict against him for a few pounds' dilapidation, in a suit in which he proved that his improvements on the farm were of several hundred pounds' value.

The PRESIDENT felt it to be unnecessary to prolong the discussion by any remarks, for the members had, without exception, expressed their assent to his opinions; he would, therefore, only ask them to concur in a resolution to the effect "that the club is of opinion that a tenant ought to receive compensation for all unexhausted improvements, and that it would be expedient to give a title to such compensation, by a legal enactment which would enlarge or supersede the customs now prevalent."

The club then voted its thanks to the President for his valuable paper.

COLMAN'S CONTINENTAL AGRICULTURE.

We were very glad again to meet with a work from the pen of the author of "English Agriculture;" and as the latter was written in a fair, candid tone of criticism, there was every reason to hope that something useful to English farmers might be found in the work, the title of which is at the head of this article. Nor have we been altogether disappointed. Notwithstanding the title be "Continental Agriculture," the work is confined to a description of France, Holland, and a very few pages on Switzerland, none of the other European countries being mentioned.

In addition to this (perhaps not very serious fault), as we like to get over our criticism at once, we have, especially, to remark an evident feeling in favour of the republican tendency of the laws affecting land in France. To this part of the subject

we will again recur, and proceed to point out a few exaggerated statements scattered through the book.

Colman speaks highly, and perhaps truly, of the condition of the French agricultural labourers, and commends their sober habits: he says,—

"In all respects they furnish a striking contrast with a considerable portion of the Scotch agricultural labourers, who are dirty and squalid to an excess; with many of the English, who are servile, broken-spirited, and severely straitened in their means of living; and with the poor Irish, who are half-clad, and in a half-savage condition, and to whom *truth and fidelity are ordinarily words without meaning.*"

As we have spent the whole of our life amongst the agricultural labourers of these three countries, we give the whole paragraph a flat contradiction. The Scotch labourers are not squalid, the English

labourers are not servile and broken-spirited; and as for their means of living, the wages through much of the north of England and south of Scotland are at the present time about 14s. per week; and it appears from the savings' banks returns, that in Devonshire, where the wages are lowest, we there find the greatest number of depositors to be agricultural labourers. Whilst we admit the misery of the Irish, still they do not deserve the imputation of not knowing the meaning of the words *truth* and *fidelity*. Such generalizations as the above must damage the character of any work.

There can be no doubt but that circumstances do not warrant any such strong expressions as the following:

"If there exists a more wicked, inhuman, oppressive, and demoralizing system, than that of the gang-system in Norfolk, where the cottages of the poor labourers have been removed from the large estates, and the people have been driven into a crowded village, and are wholly at the mercy of the farmer or the gang-master, I have yet to find it. In physical comforts, the condition of the slaves in the Southern United States is a paradise in comparison to it. I have no hesitation in holding up such a system to public indignation. It is said these people are free to choose what they will do. That is to say, they may work on the terms prescribed to them, or they may die. This is the only freedom left to them. There is no alternative or remedy. What freedom is this? What slavery more galling? They are in the power of their masters as much as if they were their own property. The extreme exactions of avarice and abuse of power follow of course. The condition of the French peasantry is wholly different from this," &c.

It may be necessary to inform our readers that Colman is an American, and perhaps intends the above tirade as a set-off for the statements of the Anti-Slavery and other societies. Whilst we admit that there is much to be found fault with in the Norfolk system, it is strange that one very important difference between the Norfolk labourer and the slave, of whose superior condition he would convince us, has not met his discerning eye. If the Norfolk labourer have fewer opportunities than the Frenchman of possessing a piece of land, he can at least transport himself to the paradise of slavery in the Southern States, if he feels inclined to do so. On the other hand, it is indeed strange that whilst we read in almost every newspaper of the efforts made by these happy slaves to escape from their paradise, we never hear of any of our numerous agricultural emigrants shipping themselves to the *blissful cotton fields of the Southern States*. It is scarcely worth occupying any space in confuting such assertions as those contained in the last quotation. John

Bull can well afford to laugh at a slave-holder's imputations on his character. Besides, Colman ought to know that the master cannot of his own will reduce his labourer's wages—these, like everything else, are regulated by the supply and demand.

Besides the above, after commiserating the state of Ireland, he gravely assures his readers that upwards of 1,000,000 people perished in consequence of the potato disease; and in another place he limits the number to 116,000.

The great peculiarity of the French agriculture arises from the law which originated with the revolution of 1790. By this law, landed property must always be left by will in nearly equal proportions amongst the children; the object being to prevent the accumulation of such large landed estates as we have in this country. This, Colman assures us, has been attended with the happiest effects in France, and contrasts it with the state of England. Our government, it appears, makes a mistake in protecting *property*, it ought to protect *poverty*. He asserts that labour has the first claim, "as the great source and instrument of subsistence and wealth. A man is not the richer for houses which he cannot occupy, lands which he cannot use, money that he cannot spend." These are strong assertions, and are not even attempted to be proved, except as regards land; and though the weakness of our author's position renders him a tempting mark, we will confine our observations to agriculture.

The first point is, are large or small farms the most advantageous to the community?

The average size of the farms in France is under fifty acres. Should we divide all our farms into holdings of that size?

The second question is, are large estates injurious?—And the third is,

Will land be better farmed when the tenant rents it from another, or farms his own?

It will be obvious that these questions involve the subject matter of many a learned volume and tough dispute. It is scarcely possible in the limits of this article to enter upon them as they deserve. We shall, therefore, briefly answer them from the results of our own observations.

1st. Are farms of fifty acres the best size? We decidedly think not. However much it may suit would-be patriots to rail against those proprietors who let their land in farms of 200 to 1,000 acres, we fear they will fail to make their cause good. Small farms might do when the farmer sent his own corn to the mill, and spun his own coat from the wool of his own sheep; but now a farmer must be possessed of capital and intelligence, with a good education—and these are rarely found combined, with a farmer on fifty acres of land. Not that we would say that it is impossible to find farms

of that size well managed; but we are inclined to think that, as a rule, those of a larger size will be found to be better and more economically managed. Besides, a farm of fifty acres will scarcely employ a pair of horses, and with one pair of horses a thrashing machine cannot be advantageously worked. On this view, a farm of 100 acres is the smallest that we can wish to see, and would rather recommend 400 to 500 acres, or one on which a steam thrashing-machine would be used.

2nd. Are large estates injurious? There is no subject more agreeable to an uneducated populace than to hear the owners of large estates reviled as everything that is evil. For our part, all the advocates for a subdivision of estates have failed to convince us that any one of our social evils can be traced to the existence of the princely estates of our landed proprietors. On the contrary, independent of every other consideration, they certainly afford the best possible safeguard against the constant changes which we fear would take place in the government of our country, to the utter ruin of trade and commerce. We are strongly disposed to attribute the present state of affairs in France to the want of such a bulwark. Besides this consideration, we find that the owners of large (or, at least, moderately sized) estates are always the most anxious to encourage improvements, and more capable of effecting them than the owners of fifty acres, which is the size that Colman so much admires in France.

3rd. Will land be better farmed when the tenant rents it from another, or farms his own? A few years ago the writer of this article was engaged in a railway survey, which took him across a great extent of country, and he invariably found the owner of a small farm managing his land much worse than his neighbour who paid rent. We have remarked that the law of France compels the parent to divide his property nearly equally amongst his children; thus giving nearly every Frenchman the chance of possessing a few acres of land, and it is this state of things which Colman praises so much, as he says that nothing tends to encourage saving habits amongst the working classes so much as the chance of possessing a few acres, which, he alleges, our laws of entail completely prevent an English labourer from doing. The last assertion we deny, as there are always small properties in the market for sale. But we think that even were they more numerous, they are not by any means the best investment for

the savings of a working man in England. *He has the savings' bank*; and long and learnedly may Colman argue before he can convince us that France, with the chance of being the owner of a few acres, is a better country than England with her savings' bank. It is true that they have savings' banks in France, but one of the first acts of the revolution of February last was virtually to confiscate the money deposited in them. In this respect, perhaps, land may be, in France, the more preferable investment. But what security have we that the next Provisional Government may not see the same reasons for seizing the land, that the present one has seen for seizing the railways and Bank deposits. In our humble opinion (as we have already remarked), the present state of affairs in France is to be directly attributed to the existence of the very law which Colman praises so much. It does seem strange that Republicans in the old and new world, with all their boasted superiority to honest John Bull, should be so unwilling to perceive—whether they make a law preventing a parent from doing what he chooses with the money* he may have earned or the land he may have purchased; whether they, by another law, apply the savings' banks and railway shares to the purpose of government; or whether, by a third law, they may repudiate their debts altogether—that the only true road to national prosperity and the only true business of government consists in giving security to savings wherever they may be deposited, and not in directing or forcing them into certain channels.

Colman says that the possession of a few acres of land tends to promote the happiness and advance the true interests of the individual.

Here again we must differ from him, and without entering into any arguments on this much disputed point, we would point to the poor dupes of O'Connor's land scheme, as a sample of small proprietors cultivating their own land, and to the miserable holdings in Ireland, as an example of small tenants paying rent, as the best arguments against his opinion.

In the next number we will proceed with Colman's book, and extract all the practical information it may contain.

T. L. C.

* Money, as well as land, is to be nearly equally divided amongst the children, by the law of France.

CHEAP MANURING.

The writer of this has been for several years watching the progress of experimental and scientific manuring; and giving, from time to time, summaries of the results, when of particular interest or benefit. So many of these results are now confirmed by repeated experience, as well as by chemical reasoning, that it seems time to collect them into a concise system, for the benefit of the small and unlearned farmer, who has little time or means for experiments or study, and can still worse afford to misapply his manures, upon the old rule of thumb system. And it is for those only that this and some following letters are intended; the stocky and learned farmer having the same means of information as the writer. His object is, then, to give the working farmer with small capital as much of the benefit of the modern experiments in manuring as he can make simply and concisely intelligible to persons of such limited education; to show them the *cheapest* means of increasing their produce, and at the same time improving their land, by applying to each crop or course just the right sort of manure it requires, instead of turning them in at random, without selection or understanding the preference of one to another.

But in all our cheap selections, the dung-heap must still stand first, as the farmer's treasury; and whatever may be hereafter discovered, it may still be said, so far, that the good and economical management of this will do more for him, than all the other new experiments put together.

We will, therefore, begin with the dung heap, return to it occasionally, and conclude with the same—so that such of your farming readers as take interest in what I have to say, should keep this for reference.

FARM-YARD DUNG, or rather MUCK, remains to be, notwithstanding the valuable help of the mineral fertilizers, the great store of food for plants, and should be thoroughly understood in all its bearings—quantity, quality, preparation, waste, fermentation, and application.

a. Quantity. The solid and liquid excrements of animals, of all kinds, should be carefully preserved (see *Waste, m*), and may be much more largely collected by soiling and stall feeding; every kind of animal offal and refuse should be likewise taken care of.

Two acres of ground will keep a beast, which, well littered, will make 1 cwt. dung, &c., per day, or 18 tons a year; and this may be tripled by

the addition of vegetable compost (see *Preparation, i*): one beast, or two acres, thus giving $18 \times 3 = 54$ tons, or 27 tons per acre yearly. It is for the farmer to judge how many beasts he will keep, and how much of their time he will feed them in the homestead (the more dung the heavier green crops; the more green crops, the more cattle food; the more cattle the more dung; and so improving from year to year). A horse may nearly equal a cow, setting quality against quantity; and two or three pigs may perhaps equal one beast. Sheep are so much out, that they add but little to the *heap*, though very effectual in fold and pasture.

b. Vegetable matter of all kinds, fresh, dry, or decayed, should be also brought to the heap; or if too distant, composted where it lies, not rotted to waste. Weeds, roots harrowed up, hedge clippings, fallen leaves, or other recent herbage, containing the vegetable salts, readily decay with salt and lime ($\frac{1}{2}$ cwt. each to the ton), producing an excellent *humus*. The addition of sea weed improves it much, and the salt is not then required.

c. Peat, sods, turf-parings, ditch and pond scourings, way soil, humous earth in whatever form, and ashes of all kinds, are good for the heap.

d. All *liquids* in which vegetables or animal matters have been soaked or boiled, and all that contain fertilizing materials, as soap suds, dish washings, pot liquor, &c., are good to moisten it.

e. Quality.—We must remember that vegetable matters work sour, and that animal substances generate ammonia, which neutralizes the acid, and is fixed by it; so that, in due proportions, they correct each other. Urine gives most ammonia.

f. But vegetable matters, including peat, sods, &c. (*e*, above), being much more plenty than animal, the acid may still predominate. This may be corrected by lime and salt (*b*), which will also kill weeds and insects, and quicken the manure.

g. It should contain, not only all the elements of vegetable food, but all in due *proportions*. Much of the dung tried in experiments against other manures, seems to have been exhausted by drainage.

h. The heap should be alike throughout in composition and consistence, which requires a circulation of the juices. For this purpose, the drainings should be thrown back upon it, from time to time, to spread the soluble matters right through the whole. But no other water should touch it, unless it gets too dry, and therefore it is best under a shed, or any cover from rain.

i. Preparation.—A staunch pit, rather deep than wide, being made to receive the drainings, clear of land-springs; a bed of humous earth may be first laid down, inclining towards the pit. Upon this, spread hard stalks, &c., which are slow to decay, then a layer of dung, &c., mixed from the cow houses, stables, and styes, six inches thick, sprinkled with salt; next a layer of vegetable matter (*b*), same thickness, dusted with slaked lime; and upon this four inches of peat, bark, sawdust, turf parings, or other humous earth (*c*); and so repeating salted dung, limed vegetables, and humous earth; keeping the lime from touching the dung, until four or five feet high. If green turfs are used, they are best laid face to face, with the lime strewed between them.

k. Then pour over it the liquid drainage, &c., described below (*l*), till it soaks right through. Then build on again as before, and pour the drainage, &c., upon the next four feet; and so as high as you find convenient. In this way your quantity is threefold, your quality free from sourness, but may be deficient in activity, for want of ammonia—for this you have to depend on the urine.

l. Every drop of this essence, not absorbed by the litter, must run into the tank or pit, to be thrown upon the heap: deep narrow drains being cut from every stable, stye, and cow house, to the pit or tank. All the other liquids (*d*) may be thrown on as they are got, so as to mix in soaking down. As the liquid passes through it will dissolve salt and lime, and carrying the juices of one layer to another, give it the same quality throughout. When finished, slant it at top with straw or long dung, to throw off the rain; and once a month open the centre, to throw back the drainage, which should always soak right through; and if there is not enough, including the liquids (*d*), water must be added.

If the farmer thinks the proportion of vegetable, &c., too great, or more than he can collect, he may, of course, put less; but experience has shown that well saved dung will bear double its weight of such additions, with aid of salt and lime. In six months it is ready for use.

Many other improvements have been proposed for the muck heap; but this appears to me the best, considering quantity as well as quality.

m. Waste.—Materials for the dung heap are wasted in many ways. The *essence* itself (the urine and drainage) is let run away, or even wash out by the water-course of the yard and weather, leaving the dung cold and hungry (*g*). The dung dropped on pasture is let lie in patches, throwing up coarse grass, which the cattle will not eat for a year or more, till the dung is exhausted. Vegetable and humous matters are left lying about unnoticed, or put to rot in running water, which carries off their

salts; even the wash of the country is let run through the straw-yard. Roots, weeds, and parings are needlessly burnt, whereby their humus is wasted; and the ammonia, which gives life to the manure, is let fly off in fermentation. These wastes, brought together, would sometimes make a larger and better heap than that remaining in the yard.

n. Fermentation.—The greater the number of vegetable elements, thoroughly united together in a sufficiently soluble state, the better the manure for general purposes. In the above muck heap we have most of the vegetable elements, and can regulate their proportions by those of dung and vegetable matters; and add all that are wanting by the inorganic manures to be hereafter described. And by *fermentation* they may be brought to a state of uniform composition and solubility. Spit dung, when well made, cuts down soft and fat, with little appearance of straw. This is probably the most generally active condition, half digested for the root sap; and with care it may be fermented so far, with little other loss than the evaporation of water: over-worked, it loses both ammonia and humus. Short dung having less risk of loss, it may be safest generally to stop there.

o. The ammonia may be retained by crusting over with humous earth (*c*), and still better by mixing gypsum and sulphate of magnesia with the salt thrown on the dung (*i*), by which the deficient magnesia and sulphuric acid are at the same time supplied.

p. Application.—Long dung is said to do best in stiff land, and for potatoes and pasture. It works slower in the ground than in the warm heap, and may therefore require three or four years to become thoroughly incorporated with the soil; and the quantity must be in proportion. But spit or short dung, which is all ready for the root sap, may be applied every other year to the green crop, in half the quantity; thus bringing a quicker return, and allowing less waste by the weather when the land lies open.

By thus returning to the soil not only all that he draws from it, but also much carbon which the plants have drawn from the air, the farmer may gradually enrich his land to the highest degree. But do what he will in this way, the salts actually carried off by his market crops must be restored, or his crops will be limited, and the most costly of these will be potass and phosphate, of which more in future letters.

Stable dung, containing more ammonia and phosphate, would bear a larger proportion of vegetable matters, &c., say three to one, if there was spare urine to pour on, which is seldom the case. But as it is generally collected in towns, this deficiency may be made up by night soil, which is much richer still; and any of the liquids (*d*), or even common

water, poured on to keep it moist and circulate the juices.

Prepared night soils are yearly increasing in importance, and may make good our wants of phosphate, by the time the supplies of bone fail; for the present waste of night soil (and urine), by sewerage and neglect, probably exceeds 4,000,000 tons yearly. The best materials for stiffening and unstinking it

for carriage are charred sods, or other compounds of charcoal with burnt earth; but coal ashes answer the purpose, and are easier obtained in towns. Lime is unfit, as it wastes the ammonia.

g. Gypsum, salt, and sulphate of magnesia, compose an excellent fixer of ammonia, and supply the sulphate, soda, and magnesia chiefly wanting in muck heaps. J. PRIDEAUX.

HINCKLEY AGRICULTURAL SOCIETY.

The first annual meeting of this very promising Society took place at Hinckley, on Monday, the 27th of November; and a stronger proof of what energy, perseverance, and determination can do, we never witnessed. The society was established on October the 16th, 1848; and on the 27th of November following, the institution then being about some six weeks old, the first exhibition of stock took place—and such an exhibition it was as must make the Hinckley society's elder brethren look well around them unless they are prepared to be shorn of their laurels. We may venture to say that there was scarcely a visitor to the show who was not astonished at what he saw. Some of the finest and some of the most useful animals, that could only have been expected to be brought forward for competition after long preparation by a society in its maturity, instead of by one only in its infancy, graced the show-yard, much to the credit of their breeders and feeders, and greatly, we are sure, to the advantage not only of the Hinckley Agricultural Society, but of the public in general. There were also some fine pens of sheep, some excellent pigs, and a few good useful horses. The entries were, beast, 90 head; sheep, 165; mares, 4; pigs, 18 pens; foals, 2; total, 279. Of implements and vegetables there were not many shown. Of the former the principal, if not the only exhibitors, were Messrs. Cort, Law, and Co., of Leicester, and Hinckley.

Of course, from the short time that there was for preparation, the necessary arrangements were not so perfect as we may hope to see them in a future year. As for example, the beast were classed in the various stables and sheds of the George Inn, instead of being exhibited in an open paddock. The consequence of this was, that about the more deserving animals there was a crowd continually gathered, so that it was almost impossible to do more than take a cursory glance at them. Of one apparently fine Hereford bull, who might as well have been among the Hinckley catacombs as in his dark stall, all that we could see was his horns. Another year this no doubt will be remedied. Mr. Orton's splendid

three years and nine months old Durham bull, bred by Mr. T. Miles, of Keyham, attracted considerable attention, as also did the Earl Howe's fat Durham cow, Josephine; Mr. Crosland's Durham dairy cow Gay Lass, the same gentleman's roan Durham heifers Venus and Ruby, and his white Durham bull Salisbury, Mr. Thomas Johnson's six years and eight months old long-horned dairy cow, and Mr. Richard Warner's pair of long-horned heifers, were likewise very commendable animals. The extra stock was remarkably good. Earl Howe's seven years old Durham dairy cow, bred by the Marquis of Downshire, and Mr. Crosland's Durham dairy cow Red Rose, winning the two prizes; and Mr. John Toone's ten years old dairy cow being highly commended by the judges. One of the prettiest (if such a term can be used of a pig) among the swine class was the Hon. E. Russell's Neapolitan fat pig, two years old, bred at Naples (not competing). The competition must have been close between Mr. Henry Footman's black Essex fat pig, and Mr. James Hollier's new Leicester fat pig, although to the latter the prize was awarded. Indeed the same remark will apply to almost all the classes.

The principal exhibitors were Lord Howe, who showed four beasts; Mr. Crosland, of Burbage House, twelve beasts and two pigs; Mr. W. Warner, of Ryeton Gorse, two beasts and one pig; Kirby Fenton, Esq., of Caldecote Hall, two beasts; Mr. Geo. Townshend, of Sapcote, eight beasts (one withdrawn from competition) and one horse; Mr. Nicholas Ward, five beasts (three withdrawn from competition), two pens of sheep, and two pigs; Mr. Shakspeare, of Griff, two beasts (one withdrawn), two pens of sheep, and one pig; Mr. S. C. Pilgrim, of Burbage, one beast, four pens of sheep, and two pigs; Mr. C. D. Breton, of Elnsthorpe, four beasts (three withdrawn), and two pigs; Mr. T. Johnson, of Burton Fields, three beasts; Mr. Wright, of Earl Shilton, three pens of sheep (withdrawn); the Hon. E. S. Russell, M.P., two pigs; Mr. T. Gilbert, of Aston Flamville, three pens of sheep; Mr. W. Millhouse, two beasts, and one pen

of sheep; Mr. S. Bonner, Hinckley, two pens of sheep; Mr. R. Chapman, of Upton, five head (one withdrawn), and one pen of sheep (withdrawn); Mr. T. S. Cotterill, of Hinckley, two beasts, and one pen of sheep; Mr. J. S. Spencer, of Hinckley, two pens of sheep, and one pig; Mr. F. Spencer, of Wibtoft, two beasts, and one pen of sheep; Mr. W. Grewcock, of Barwell Fields, one beast, and two pens of sheep; Mr. R. Warner, of Weston Hill, four beasts; Mr. T. Warner, of Wolvershill, one cart mare, three pens of sheep (one withdrawn), and one pig; Mr. W. Neale Berry, of Stoke Golding, three beasts; Mr. J. Geary, of Dadlington, one pen of sheep, and one pig; Mr. J. Adcock, of Burton Hastings, one beast, one cart mare, and one pen of sheep; and Mr. E. Darlinson, of the same place, three pens of sheep. We here use the terms beast, sheep, and pig, in their general sense for brevity's sake, as including stock and extra stock bulls, cows, heifers, sheep and lambs, boars, sows, and pigs.

The prize-holders, to the amount of £58, were—Mr. Crosland, 7 premiums, the Earl Howe 2, Mr. R. Warner 3, Mr. T. Johnson 2, Mr. W. McEwan 1, Mr. T. S. Cotterill 1, Mr. Townshend 1, Mr. C. Orton 1, Mr. W. Neale Berry 1, Mr. E. Darlinson 1, Mr. J. S. Spencer 2, Mr. N. Ward 1, Mr. T. Gilbert 1, Mr. S. C. Pilgrim 1, Mr. C. D. Breton 1, Mr. J. Hollier 1.

From this it will be seen that, with the exception of Mr. Crosland, who certainly took the lion's share, the competition was very open. Of these, the Earl Howe, Mr. Crosland, Mr. C. D. Breton, and Mr. Warner generously returned their premiums to the society. Upon this point there was much force in the noble Earl's remark; however, that though to a young society it might be advantageous to return the premiums on its first meeting, it might, and no doubt would, be injurious if the same thing were done in after years, as it might tend to restrict competition to those only who could thus afford to indulge their kindly feelings, to the manifest injury of the society, and in contravention of its declared objects; which are—to promote enterprise and emulation in the breeding and feeding of cattle; to advance the cultivation of the land; and to encourage skill, industry, and good conduct among servants and labourers, more particularly those engaged in husbandry.

The rules of the society have been printed, and are in accordance with those of most similar societies, and may be obtained either of Mr. Gilbert, the secretary, or of Mr. Short, both of Hinckley. From these we learn that it is intended to have an annual ploughing match, and that rewards for labourers and servants in husbandry will be taken into consideration by the Committee previous

to the show of 1849, and that these will form an important feature in the objects of the society.

The present officers of the society are the Right Hon. the Earl Howe, president. Vice-presidents: the Right Hon. the Earl of Denbigh; the Right Hon. the Earl de Grey; the Hon. E. S. Russell, M.P., Kirkby Mallory; Sir Grey Skipwith, Bart., Newbold Revel; Sir Frederick W. Heygate, Bart., Roecliffe Hall; Major F. Woollaston, Sheepy Hall; C. W. Packe, Esq., M.P., Prestwold Hall; Rev. Robert T. Adnutt, Rectory, Cadeby; Rev. Joseph Arkwright, Normanton Turville; William Brookes, Esq., Croft; Rev. J. M. Cooper, Rectory, Peckleton; J. S. Crosland, Esq., Burbage House; Dempster Hemming, Esq., Lindley Hall; Henry Townshend, Esq., Stoney Stanton; Robert Goodacre, Esq., Ullesthorpe; Rev. Geo. Mettam, Rectory, Barwell; and Kirby Fenton, Esq., of Caldecote Hall. The Committee are Mr. Breton, Elms-thorpe; Mr. Campion, jun., Sharnford; Mr. Cotterell, Hinckley; Mr. Crafts, Burbage; Mr. Grundy, jun., Drayton; Mr. T. C. Harris, Hinckley; Mr. Kendall, Hog Hall, Burbage; Mr. Milhouse, Barwell House; Mr. F. Spencer, Wibtoft; Mr. J. S. Spencer, Hinckley; Mr. Geo. Townshend, Sapcote Fields; Mr. Nicholas Ward, Hinckley. The Treasurer is Isaac Hodgson, Esq. The Stewards for the present year are J. S. Crosland, Esq., Burbage House; Mr. F. Spencer, Wibtoft; and Mr. G. Townshend, Sapcote Fields. The Secretary is Mr. J. W. Gilbert, at Messrs. Pares' bank, Hinckley.

The Judges of the show were Mr. Chas. Stokes, of Kingstone, near Kegworth; Mr. John F. Potterton, of Stowe, near Weedon; and Mr. John N. Buckley, of Normanton-on-Soar, near Loughborough.

The principal instrument exhibited was one invented by Geo. Coode, Esq., called the Patent Irrigator. We commend it to the consideration of our agricultural friends.

The rest were of the ordinary kind—cheese, presses, ploughs, winnowing machines and the like.

Among the company present we noticed the Earl Howe, Lord Curzon, the Hon. H. W. Wilson, C. W. Packe, Esq., M.P., the Hon. E. S. Russell, M.P., Col. Woollaston, Major Woollaston, R. S. J. Winterton, Esq., Kirby Fenton, Esq., Wm. Brookes, Esq., Wm. Sills, Esq., C. S. Preston, Esq., Henry Trethewey, Esq. (agent to the Earl de Grey), the Rev. J. M. Cooper, Dr. Slade, Rev. — Roby, Rev. T. F. Avar (curate of Hinckley), Rev. W. Wilkinson, Rev. C. Wilkinson, Rev. John Fisher, Rev. N. Small, Rev. J. Longhurst, Rev. D. Somerville, and many with whose names we were not acquainted, comprising almost all the gentry and principal agriculturists of the neighbourhood.

The large influx of visitors to the town, and the connoisseur-like scrutiny and judgmental observations of good judges, all tended to show how great an interest the agricultural world of Hinckley and its neighbourhood—not forgetting Leicester, Coventry, Nuneaton, Loughborough, Lutterworth, and other places—took in this truly agricultural enterprise; an interest which, we hope, will continue to grow with the growth and strengthen with the strength of the Hinckley Agricultural Association. And we were surprised and pleased to observe the extent and excellence of the show, demonstrating, as it clearly did, the generally excellent quality of the farming stock in and about Hinckley, and its prime order—this, too, without any previous preparation or notice, from the recent formation of the society; so that the animals shown had generally been bred and intended for ordinary purposes and sale.

There was also another very pleasing and not very ordinary feature about this show. With a few very marked exceptions the exhibitors were ordinary tenant farmers, living in the vicinity of Hinckley; some, too, occupying only small farms. Indeed one of the prize beasts was bred and fed by a gentleman occupying only 25 acres; another prize beast was fed on a farm of half that size. Yet the breed and character of their stock would not have brought discredit upon breeders of even exalted name and fame, thus proving at once the general improvement of the stock kept by ordinary farmers; and that the coarse, nondescript mule-bred animals, of former days, are fast passing away, or live only in the almost uninhabited portions of our now highly-cultivated land.

The day was fine, and the general good order and arrangements reflected the highest credit upon the stewards—so much so as to induce many ladies to honour the exhibition with their presence.

The judges having made their awards, the yard was thrown open about one o'clock, and till about four was visited by the public "in great force," but without creating any confusion or pressure.

Too much praise cannot be given to that excellent and highly esteemed nobleman, Earl Howe, who, by his very earnest zeal and personal attendance, gave an impetus and importance to this society which it never could otherwise have obtained. Hinckley and its neighbourhood are indebted, and we believe fully acknowledge it, to this kind and benevolent nobleman for very many benefits; and he lives, we know, in their very best affections.

£25 5s. was received for admission to the yard.

THE DINNER

Was served in the Town Hall, which, had it been twice the size, would not have been too large to

hold the company who squeezed themselves into it. The hall was tastefully decorated with evergreens, drapery, and devices. Amongst these were a plough, reaping hook, and other agricultural implements. At the lower end of the room was a gallery filled with ladies, who seemed to take a great interest in the proceedings of the day.

Above the gallery was placed the inscription, "Agriculture—its advantages and blessings:" facing the windows, and above the device of the plough and the reaping hooks to which we have adverted, was the inscription "Speed the plough;" and over the head of the noble president, who sat in a canopied chair or throne of state, belonging to the Freemasons' lodge, was the device of the lion and the crown. In fact, the whole thing was in excellent keeping, and displayed judicious taste and honourable feeling.

The Earl Howe occupied the chair, supported right and left by Lord Curzon, Major Wollaston, the Hon. E. S. Russell, M.P., C. W. Packe, Esq., M.P., the Hon. H. W. Wilson, Kirby Fenton, Esq., W. Brookes, Esq., and other leading gentlemen and clergymen of the district. The vice-chair was occupied by Mr. Crosland, supported by G. Coode, Esq., and other eminent agriculturists.

After the usual loyal toasts the Chairman gave "The health of the Duke of Rutland, the Lord Lieutenant of the county" (cheers, and three times three, and one cheer more).

The judges here rose to leave the room, having to meet the train, which having been noticed by the Earl Howe,

The noble Lord rose and briefly and emphatically proposed the health of those gentlemen, with thanks to them for their services (cheers).

Mr. STOKES shortly acknowledged the toast, and observed that he most heartily congratulated the society upon the exhibition of stock which had been made that day (cheers).

The noble CHAIRMAN then said they had the pleasure of seeing one of the members for that division of the county amongst them; and of him, as of his colleagues, they were truly able to say, that there was no division in the House of Commons, especially in connection with their own county, or with the agricultural interest, or that affected the general welfare of the country, in which their names were not to be found (loud cheers). It was, therefore, the duty of that meeting to show in the only way in which they could display it, the estimation in which they held their parliamentary representatives, and to acknowledge their unwearied diligence and high integrity, by drinking their good healths in a bumper (cheers, and three times three).

Mr. PACKE, who was received with much applause, said—The very kind and flattering manner

in which the noble president had done him the honour to propose his name to their notice, and the enthusiastic reception which it had met with, demanded his warmest and sincerest acknowledgments (cheers). Although not residing within the limits of their association, he was most thankful to the committee for allowing him the opportunity of becoming a member of their society (cheers). He, on two most particular grounds, independently of the situation in which he stood as one of their representatives in parliament, thought it to be his duty to do the best he could for the Hinckley Agricultural Society (cheers). First, he was anxious on this ground, because in the county of Leicester, every part of which, from his having lived in all the four quarters of it, he considered as part of his home, he took such an interest, that he could not, if he would, but be desirous that every interest in it should flourish, and the agricultural more especially (cheers). Another ground was that in this, as he had every reason to believe and regret, most distressed portion of the manufacturing county of Leicester, the establishment of meetings of this description would be of the utmost advantage in circulating money in the town of Hinckley. On those two grounds he was most anxious to lend his aid to this society, in every way which was in his power (Hear). He had the gratification, in conjunction with his honourable friend on his left, of assisting at the establishment of a great society of this kind in the town of Leicester. He had also had the honour of assisting at the establishment of one at Ashby, and he likewise had the honour of assisting in the formation of another, of which he had the pleasure and the pride to be president—at Loughborough (cheers). He could not, therefore, but feel highly gratified at having the opportunity of being present at the opening of the Hinckley Agricultural Association (cheers). He could only wish that the manufacturing interest would take a pattern from the agricultural, in the formation of some such society, to connect together the different classes in that interest (Hear, hear). It was most gratifying to find the land owner, the land occupier, and the humble cultivator of the soil, joining hand in hand for the mutual benefit of all (Hear). He believed it was mainly attributable to that good feeling which existed among, and was promoted by the agricultural societies of Leicester, that the county had been preserved from the vice and crime which had befallen neighbouring counties. He spoke advisedly, from his situation as one of the magistrates for the county, when he said he believed there had been scarcely one incendiary fire in the county, and which, he believed, was attributable to the influence which these societies exercised, and the respect with which they imbued the mind of the

labourer for the employer (loud cheers). They were aware that in those meetings politics were strictly excluded from their discussions, or, as their representative, such would have been the subject upon which it would have been his duty to address them; but, nevertheless, it certainly was a gratifying circumstance that they were enabled to meet to discuss that which was beneficial to agriculture, and therefore of benefit to the community at large (Hear). He had observed in a part of the rules of the society, which had been transmitted to him, that the rewards for good conduct among the labourers were to be commensurate with the encouragement which the society itself might receive. Holding, as he did, that agricultural societies were one of the greatest blessings to the country, and that one of their prime objects was the encouragement of good conduct among the labouring classes, if they would give him leave, he would beg to offer to them two premiums for the encouragement of that particular class, and those two premiums should be equally divided between those who were connected with agriculture, and those who were connected with the manufacture of the town of Hinckley (much cheering). He should propose, then, that for the agricultural labourer who should be supporting the largest number of children, under twelve years of age, without parochial relief, he should be allowed to place at the disposal of the committee the annual sum of £3 (cheers); and he proposed to place at their disposal a similar sum for the stocking-maker, who should be entitled to the premium upon the same conditions (cheers). He was anxious that in dealing with the labouring population, which they, as agriculturists, had more particularly to do with, they should deal at the same time even-handedly with all—those they employed themselves, and those who were associated with the staple manufacture of the county of Leicester (Hear). They all derived great advantage from having good labourers, and he thought it their duty to think of those who, by the decrees of Providence, had been placed among the manufacturing classes. He did not desire that they should be selfish enough merely to consider the interest with which they were themselves more immediately identified, but that they should likewise have regard to the happiness of those connected with the manufacturing interest living among them (Hear). In conclusion, he had to express his most sincere thanks for the kindness he had ever experienced from the constituency he had the honour to represent, and that in every way in which he could promote their well being, whether individually or collectively, he would devote his best services to the accomplishment of that purpose (cheers). But although he had responded to the toast more par-

ticularly as related to the part which he himself bore in it, he might in the name of his colleagues say, that, from what he knew of their sentiments, he was sure they would desire to echo his words were they present (cheers).

Hon. H. W. WILSON had the pleasure of proposing a toast, which was one that had only to be named to be honoured. It was one which he was sure would excite in their breasts all the sympathy and all the enthusiasm which the name of Howe formerly excited in the breasts of English seamen (loud cheers). Although long friendship, and the

feelings of regard which he had towards their noble president might induce him to wish to dilate at length upon the noble earl's merits, he was well aware that it would not be agreeable to his lordship; and he was also aware that the high character and noble qualities of their president were too well known and esteemed to render it necessary that he should say a word about them in a company like that before him (cheers). He would therefore content himself with proposing "the health of their noble President," and many thanks to him for his able support of the interests of the society (cheers, three times three, and one cheer more).

The noble CHAIRMAN, who was received with great applause, said that he could assure them most unaffectedly, that he was unable to find words to express the grateful sense he entertained of their kindness to him. The very undeserved compliments paid to him by his honourable friend had been prompted by the feelings of very old friendship. They had known each other since they had been boys, now some six-and-thirty years ago; and he attributed the enthusiasm with which his name had been received to the fact that in this county he had been born, and in it he had lived all his life, and in it he hoped to die (loud cheers). But passing from the topic of self, he would turn to a much more important subject, and one that was matter of heart-felt congratulation to him—that was, the pleasure of seeing them there that day (Hear). He would not conceal that when first the idea flashed across his mind that he should belong to the society, he almost felt that in their poor little neglected corner of the county, it would be impossible to form such a society as he had now the pleasure of seeing around him, and over which he had great pleasure in presiding. Hesitation, however, he had not felt, but something of alarm lest they should not succeed. But the result had been far different; and now from his heart he congratulated them on the most perfect success which they had achieved (cheers). When they remembered that the society's existence did not date more than six weeks, it seemed almost impossible that in that time they should have assembled so excellent a meeting, and

made so fine an exhibition of stock. He sincerely hoped that this was but the presage of what might yet be accomplished, and that their society would not be excelled by any in the neighbourhood (cheers). The committee had exerted themselves most manfully, and those who had brought animals for exhibition had seconded them most ably; and hence the superior show they had that day witnessed. What he wanted was, to see the tenant able to pay his way, and to be able to rear and exhibit useful animals, such as would make the cheese. It was not simply for those who had abundant means—the men of property—to exhibit fine stock, but he wished to see the tenant farmer placed in a position to be able to pay his rent, and to be able to rear such animals as would enable him to do so; it was easy enough for men of high name and good income to do it; what he wanted was to see the tenant farmer making choice of those things that would place him in that position (cheers). But let not his (the chairman's) meaning be mistaken. His desire was not merely to put money in his own pocket (No, no!) He meant that he hoped to see a man able to pay his rent, and to go back with a cheerful countenance to his own fireside (cheers). He had no doubt that, with a little more encouragement, and a few more premiums, they might have the happiness, another year, of seeing a few more of their brethren joining their society, and exhibiting stock. He would take the liberty, therefore, of handing round a paper that had been prepared, that any one who might feel disposed might be kind enough to put down their names, and whilst that was being done he would read them a note which he held in his hand, offering a premium to the society. It was as follows:—"Mr. Brown presents his compliments to the secretary of the Hinckley Agricultural Society, and he will give a premium of £5, to be divided between three of the stocking-makers of Hinckley, out of twenty, who shall reap the greatest number of thraves of wheat, and in the best workman-like manner, during the next succeeding corn harvest. The ages of the competitors to be between 18 and 21, and the premium to be divided in the following manner, viz.—£2 10s. to the first, £1 10s. to the second, and £1 to the third best reaper, and to be decided and adjudged by some member of the committee of the society, to be chosen by Mr. Brown. Mr. Brown will find a field of corn for the purpose. The names of the competitors to be given in to the secretary on or before the 1st of June, 1849, so that the qualification of each person may be enquired into, and, if satisfactory, to receive a certificate on or before the 24th of the same month" (cheers). That was a very useful thing—to assist the stockinger at times when work was

short. He had been commissioned by his wife (the Countess Howe) to bestow a premium (cheers) to the wife or widow of a framework-knitter, not possessed of property, except gained by her own servitude, to the amount of £10 (exclusive of her household goods), who has brought up, or is now supporting, the largest number of children, all born in wedlock, in the most orderly, cleanly, and moral manner, with the smallest parochial aid, £4; to the next £2; to the next £1 (cheers). He (Lord Howe) had added *the smallest parochial aid*, because it was almost impossible that in times of very severe distress, but that the most industrious man must fall upon the parish (Hear). He proposed for himself to give to the dairy-woman, not possessed of property (except gained by her own servitude), who has lived the longest time, without intermission, and is still living in the house with the same master or mistress, or their son, or daughter, and who, during that time, has had the management of a dairy of not less than twelve cows, £1 10s.; and to the next, £1. To the committee for the benefit of the cottage allotment gardens contained in the district, £10 (cheers). He had been in the habit of giving premiums to the holders of the best cultivated gardens of this character, he now proposed to hand that sum over to the committee for the purpose he had just stated (cheers). He had only further to say that, wishing as he did all success to the society, no exertion of his should be wanting to promote its welfare, and to drink success to the Hinckley Agricultural Society (loud cheers).

The secretary then read the following list of the awards:—

The following Premiums are all by the Society.

CATTLE.

Class 1.—For the best fat cow or heifer, of any age, breed, or weight; breeding open to all counties, but fed in the district; without restrictions as to feed, but the kind of food to be stated, £3, to Mr. Thomas Johnson, Burton Fields. Second ditto, £1, to Mr. Wm. Mc Ewan, Hinckley (7 entries).

Class 2.—For the best fat heifer, under four years old, fed in the district, without restriction as to feed, but the kind of food to be stated, £2, to Mr. Thomas Samuel Cotterill, Hinckley (2 entries).

Class 3.—For the best dairy cow, of the Durham or short-horned breed, fed in the district, in-calved or in-milk, without restrictions as to feed, but the kind of food to be stated; breeding open to all counties, £2 10s., to J. S. Crosland, Esq., Burbage House. Second ditto, £1, to ditto (11 entries).

Class 4.—For the best pair of heifers, in-calved

or in-milk, under three years old, of the Durham or short-horned breed, without restrictions as to feed, but the kind of food to be stated; fed in the district, £2, to J. S. Crosland, Esq., Burbage House (7 entries).

Class 5.—For the best pair of heifers, under two years old, of the Durham or short-horned breed, without restrictions as to feed, but the kind of food to be stated; fed in the district, £2, to J. S. Crosland, Esq., Burbage House (3 entries).

Class 6.—For the best dairy cow, of the old Leicestershire or long-horned breed, in-calved or in-milk, fed in the district, without restrictions as to feed, but the kind of food to be stated; breeding open to all counties, £2 10s., to Mr. Thomas Johnson, of Burton Fields. Second ditto, £1, to Mr. Richard Warner, Weston Hill (7 entries).

Class 7.—For the best pair of heifers, under three years old, in-calved or in-milk, of the old Leicestershire or long-horned breed, without restrictions as to feed, but the kind of food to be stated; fed in the district, £2, to Mr. Richard Warner, Weston Hill (4 entries).

Class 8.—For the best pair of heifers, under two years old, of the old Leicestershire or long-horned breed, without restrictions as to feed, but the kind of food to be stated; fed in the district, £2, to Mr. Richard Warner, Weston Hill (no competition).

Class 9.—For the best bull, of the Durham or short-horned breed, above ten months and under two years old, open to all counties, without restrictions as to feed; to be fed within the district, £3, to J. S. Crosland, Esq., Burbage House (5 entries).

Class 10.—For the best bull, of the Durham or short-horned breed, of any age, that has served cows in the previous season in the district at not exceeding ten shillings each; breeding open to all counties, £3, to Mr. Chas. Orton, Stoney Stanton (4 entries).

Class 11.—For the best bull, of the old Leicestershire or long-horned breed, above ten months and under two years old; breeding open to all counties, without restrictions as to feed, but the kind of food to be stated, £3 (no entries).

Class 12.—For the best bull, of the old Leicestershire or long-horned breed, of any age, that has served cows in the previous season in the district, at not exceeding ten shillings each; breeding open to all counties, £3, to Mr. William Neale Berry, Stoke Golding (no competition).

SHEEP.

Class 13.—For the best pen (of five) under twenty-two months old, long-woolled fat wether sheep, without restrictions as to feeding; breeding open to all counties, £2, to Mr. Edward Darlinson, of Burton Hastings (3 entries).

Class 14.—For the best five ewes, bred and fed in the district, which have suckled lambs to the 1st of July, 1848, and have again been put to the ram, and are supposed to be in-lamb, and have been fed on grass and green vegetable food only, from the 1st of May, 1848, £2, to Mr. Jos. Sharp Spencer, Hinckley (9 entries).

Class 15.—For the best five theaves, that have been put to the ram, and supposed to be in-lamb, and have been fed on grass and green vegetable food only, from the 1st May, 1848, open to the district only, and the property of any member not letting more than four tups, £2, to Mr. N. Ward, Hinckley (10 entries).

Class 16.—For the best pen (of five) Leicester ewe lambs, fed in the district, without restrictions as to feed and breeding, the property of any member not letting more than four tups, £2, to Mr. Thos. Gilbert, Aston Flamville (6 entries).

Class 17.—For the best pen (of five) ewe lambs, of any breed or cross, not qualified to compete as Leicesters, bred within the district, without restrictions as to feed or breed, £2, to Mr. S. C. Pilgrim, Burbage (2 entries).

PIGS.

Class 18.—For the best in-pigged or suckling sow, bred and fed in the district, £1 10s., to J. S. Crosland, Esq., Burbage House (10 entries).

Class 19.—For the best boar, fed in the district; breeding open to all counties, £1 10s., to Mr. Charles D. Breton, Elmsthorpe (4 entries).

Class 20.—For the best fat pig, of any age, bred and fed within the district, £1 10s., to Mr. James Hollier, Market Bosworth (4 entries).

HORSES.

Class 21.—For the best brood mare, the property of a member, and to be considered by the Judges as best adapted for the general purposes of agriculture in the district, £2 10s., to Mr. George Townshend, Sapcote (4 entries).

EXTRA STOCK.

Class 22.—For the best in-calved dairy cow, of any age or breed, that has been regularly milked during the summer, and has been fed on grass, hay, and green vegetable food only, from May 1, 1848, £2, to the Right Hon. the Earl Howe, Gopsal. Second ditto, £1, to J. S. Crosland, Esq., Burbage House. N.B.—This premium will be withheld until the beast has calved (13 entries).

Class 23.—For the best beast, shown as extra stock, £3, to the Right Hon. the Earl Howe, Gopsal (11 entries).

Class 24.—For the best pen (of five) sheep, shewn as extra stock, £2, to Mr. Joseph S. Spencer, Hinckley (3 entries).

SWEEPSTAKES.

Between Mr. Thos. Gilbert, Aston Flamville, and Mr. John Campion, jun., Sharnford Field, of one sovereign each, for the foal best adapted for sporting purposes; decided in favour of Mr. Campion.

Entries:—Beast, 90 head; sheep, 165; mares, 4; pigs, 18 pens; foals, 2. Total, 279.

The CHAIRMAN said the next toast upon the list was one which it was impossible that he could offer to their notice—it was that of “the successful Candidates.” The only way, therefore, in which he could get out of the difficulty was by coupling together, in one toast, “the successful and the unsuccessful Candidates.” He hoped another year the tables might be turned, and that the unsuccessful candidates might then prove to be successful. He would couple with the toast “the health of Mr. Crosland” (cheers).

Mr. CROSLAND, in responding, urged the advantages which the society held out, and recommended the unsuccessful candidates to try next year to beat the at present successful ones.

The CHAIRMAN here said that he was, as all the society must be, deeply sensible of the liberality of the gentlemen who had so kindly returned their premiums to the society. So far as this year was concerned, the object was a good one, and was to be commended. But he would suggest that the same course should not be pursued in future years, inasmuch as it might tend to injure rather than benefit the society, as it might tend to induce those to withdraw from competition, who might not have the same amount of means at their command, and yet who would not like to be behind hand in generosity. He was sure that he should be excused for the suggestion he was offering, and he thought that upon reflection, there could not be a doubt in any man's mind that such must be the result (cheers).

Mr. IVENS remarked that the word “disqualified” had been written against one of the animals he had shown.

The CHAIRMAN explained that it was not intended to cast the least imputation upon the animal, but that it had been “disqualified” because the terms of the condition of exhibition had through mistake not been complied with.

The few remaining toasts were then given, after which the noble earl quitted the chair, amidst the loudest applause.

Another gentleman was then called to the chair, and the last toast proposed in our hearing was that of “Mr. Thomas Moxon and the Press,” whom we left ably responding to the burlesque.

The following song, composed by Mr. J. Dare, of Leicester, was sung in the course of the evening:

HONOUR TO THE TOILING HAND.

All honour to the toiling hand,
 Or in the field or mine,
 Or by the harnessed fire or steam,
 Or on the heaving brine.
 Whatever loom, or barque, or plough
 Hath wrought to bless our land,
 Or given around—above—below,
 We owe the toiling hand.
 Then honour—honour to the toiling hand !

It battles with the elements,
 It breaks the stubborn ward ;
 It rings the forge—the shuttle throws—
 And shapes the social board.
 It conquers clime—it stems the wave—
 And bears from every strand
 The sweetest, best of all we have—
 Gifts of the toiling hand.
 Then honour—honour to the toiling hand !

—Abridged from the Leicester Journal.

SOME ACCOUNT OF JOHN BAMFORDS' FARMING ON HIS FIVE ACRE FARM, AT BARRETT.

WHEAT.—The first work done belonging to this crop was getting in the seed; this was done in November last year. The plot is about half an acre, and the preceding crop was turnips and potatoes. The seed was sown immediately on the removal of the turnips upon the ridges, just as the turnips left them, and was hacked in. The whole amount of labour given to this crop, up to its being safely in the barn, amounted to 12¼ days' work, which, with a bushel of seed, amounts to £1 11s. 6d. No manure was put on, it was sadded down and rolled this spring, and from the results of the prize rod, the produce is at the rate of 44 bushels of 60lb. to the bushel.

OATS.—The next work of any consequence was getting in the oats. The breadth of ground is about ¾ acre. It was dug with the spade (before winter), and sown with 4 bushels of Tartarian oats, and the seed covered from equidistant trenches, after the Flemish mode. This crop, when housed, has occupied 43 days working, and 1½ doz. of lime had been put upon it, the whole expense when in the barn and ready for thrashing is—

	£ s. d.
43 days' labour at 2s. per day	4 6 0
1½ doz. of lime	1 19 9
4 bush. seed	0 13 6
	6 19 3

The return is (according to the measured rod) 100 bushels per acre.

POTATOES.—The preparation of the ground for the potato-crop commenced in November last, by paring about one rood, and, as the weather permitted, removing the parings and ridg-

ing up for exposure to the winter's frost. The amount of labour expended upon this crop from first breaking the ground, to its being cleared off is—

	£ s. d.
61 days	6 2 0
Seed	1 0 0
	7 2 0

This crop is rather a failure, owing to the disease being pretty severe upon it.

CARROTS.—The plot of carrots of about ½ acre is part of the potato ground of last season. At the time of sowing (April) it was covered over with ashes saturated with tank liquor, and dug in. This crop is yet in the ground, five days' labour has been expended on it, which with the seed, amounts to 11s. This crop will be profitable. The white Belgian carrot is a root that may be cultivated in this locality with considerable advantage.

TURNIPS.—The ground constituting the turnip plot is about 1 rood, and is part of the potato ground of last year. In the getting up of the potatoes, the whole soil was completely forked deep, the weeds got out, and the ground left with a smooth uniform surface, and in the March following, it was covered over with ½ doz. of lime, and remained in that state till the latter end of April, when the ridges for sowing upon was formed without any other preparation whatever. In the making of the ridges, a rather scanty quantity of dung was used. Cost—

15¾ days	£1 11 6
½ doz. lime	0 13 6
Seed	0 1 0
	2 6 0

Return is at the rate of 17¾ tons per acre.

The turnips are what I should call an average crop; they are yet on the ground. The method that I have used for this crop is a very ready one for raising a turnip crop, yet it is one that I am not inclined to recommend.

GRASS.—The remainder of the ground of my little farm is in grass, it will be about 3 acres, and is used for stall feeding and making into hay. In mowing and getting the hay, there has been 27¾ days work. Nearly 2 roods has been cut as green food for stall feeding, some part of it has been twice cut this season. I find grass, as a green crop for stall feeding, to be superior to either rye or tares, it can be got earlier, and of greater weight, and in the raising of this crop the tank becomes of special use.

AMOUNT OF LABOUR.	Days.
At the wheat crop	12¼
„ oats	43
„ potato	61
„ carrots	5
„ turnip	15¾
In miscellaneous work	5½
Yet wanting to clear off the crops	20

The spade cultivation of 2 acres 162½
 27¾ days, the grass cultivation of 3 acres.

STURMINSTER AGRICULTURAL SOCIETY.

THE BALANCE SHEET.

The following address was delivered and balance sheet read by the Rev. Anthony Huxtable, at the last meeting :

My most kind friends, I beg to assure you that although this is the fifth time which I have had the honour and happiness of addressing you, I never rose with greater satisfaction on the one hand, or with greater fear and dread on the other, than I do on this occasion. I rise to address you in somewhat of a corporate capacity, for there is one prize of Mr. Hill's, two awarded to Mr. Farquharson, five to Mr. Milfer, and one to Mrs. Jane Hallett ; so that I have to return thanks on behalf of myself and fourteen other candidates. I have no doubt that all these individuals feel gratified with your kindness, but if there is one person to whom you have been more kind still, it is I, myself ; and I should be something more or less than a man—and I profess to be neither—if I did not feel moved by the kindness you have shown to me. The best return which I can make is to tell you all I know. Mr. Hill, just now, was a little roguish when he talked of the strength of my pocket. Without a strong pocket I could not make experiments ; for what did experiments mean ?—chance, trial, risk ; and a man could not risk if he had not got the money, or, as the "Times" facetiously termed it, "a sly reserve in the Three per Cents." I will, in the first place, speak to you about the prize which I have won, which will prove the great use of prizes of this description ; although a Hampshire gentleman has said that he "wished Mr. Huxtable would speak of his failures," which I think was a most unkind cut, for I have always stood before you in a white sheet, and last year I said my swedes were quite a disgrace. What does the gentleman want more than that ? When I went home, I said to my bailiff, "Joseph, you must grow a better crop of turnips next year, as there is a £10 cup to be given : look to it." He did, and won it. The rev. gentleman then proceeded to observe that Mr. Hill had told them that his manure had cost him the sum of £1 4s. 2d. ; his (Mr. Huxtable's) had cost him less—and here he somewhat differed with the judges : they said he ought to charge for the value of the farm-made dung, but he never did so, and on this principle, that in valuing his crops he never valued the straw, and therefore the dung ought not to be valued. The artificial manures he had used were—2 cwt. of coprolites, dissolved in half their weight of sulphuric acid, and seven put loads of dung with the sulphuric acid. He had used a hard word—coprolites—and some of his friends present might ask, "What does it mean ?" He was himself obliged to refer to a Greek lexicon to discover its meaning, which was "dung stone," or in other words, "fossil dung." It was a remarkable discovery, and one which would prove of considerable importance to this country. To show them its value, he would quote a passage from Liebig, the celebrated chemist, on whose wonderful discoveries a farmer once made a bad pun by saying, "It's a *big lie*!"—"As England owes her strength to her manufactures, her power among the nations to the coal mines which are to be found beneath her hills, so it will be discovered that she owes the strength of her agriculture to her fossil phosphates, or the fossilized bones, which she holds in her soil." Well, then, the swedes which he (Mr. Huxtable) grew, were manured with these dung stones, which were obtained

in large quantities from Norfolk, and which he had ground down for the purpose of manure. Those which he had used, he had purchased ; but he had found them in his own parish also. A learned philosopher, who came down to visit him, said—"Sir, this is the grey sand stone, here is the London clay ; and here you will find these stones." Well, he (Mr. Huxtable) dug away, employing men to sink pits, and at last he found them, and he had brought some specimens to show them ; but the portion which he had brought with him was only about the sixteenth part of one. These dung stones were supposed to be the dung dropped from the Saurians, enormous animals, 20 or 30 feet long, which inhabited the earth at a very remote period of its history. It was conjectured that they dropped this dung in the clay, where it had become fossilized. (Considerable laughter from many persons in the room, who appeared to consider Mr. Huxtable's statement as an attempt to impose upon their credulity.) Some of them supposed he was joking ; he was really speaking serious. It was a most providential as well as wonderful thing that this country had these treasures in its soil, for they were of the same composition as though they took horses' legs and bones, and burnt them to pieces. There were tens of thousands of these stones in our soils. He had them in enormous quantities in his own parish, and if any person should feel desirous of seeing the specimens, he should be most happy to open a pit, and show them the stones as they lay in the formation. They do not, however, pay to work, and therefore he was obliged to purchase what he required from his friend, Mr. Iawes, who supplied them from Norfolk. He had used about 2 cwt., and his manure cost him about 10s. an acre—he meant for purchased manure. He would tell them of his failure ; a glorious failure, from which he had learned more than he ever had from anything he had ever done. He had got bumptious about growing swedes ; he thought he could beat everybody, but he had failed signally. He had planted a field of six acres of stiff land with turnips ; he first drilled in 3 cwt. of superphosphate of lime, and put in the seed ; it came up beautifully, but to his utter astonishment the roots never grew, and many of them were not larger than a wine glass. The cause of this was, that after the rains the clay soil had run together and bound the plants so tightly that they could not grow. He then endeavoured to remedy this evil, which he did by dibbling one acre, drawing a gardener's line from one end of the field to the other, making holes, which were filled with dung and superphosphate of lime ; and although, in the other parts of the field which had been heavily dunged because he could not make them grow, because the roots could not make their way through the stiff clay ; yet where he put their food under them, the plants grew wonderfully. With respect to liquid manuring, finding that by the old system the land was cut all to pieces—and knowing that there was no evil for which there was not a remedy—he had set to work, not on a small scale, and had laid down 1,350 yards of wood piping, made of larch, Scotch fir, or elm ; it was bored with a boring machine, by a man at Fontmel, first by a one-inch and afterwards by a two-inch borer. The charge for boring was about 7d. per yard ; it cost him also 2d. per yard for posts, and altogether the expense was about one shilling per yard. He had got a forcing pump

which carried water 30 feet high, and thus he could carry these pipes all over his farm. But it might be asked, How could he afford to do all this? The expense incurred in laying down pipes to water 90 acres of land was £70 10s. He had got stumps placed in various convenient positions, and as the water rushing down into the pipes under ground would always find its level, it rose up in these stumps, which were six feet high, and from which the water carts were supplied. He employed a lame man to pump at the well at a shilling a day (and they must remember that he was lame, and that it was not hard work), and then he employed a boy with pony carts, each able to contain a hogshead and a half. He chose the pony carts and the small carts in preference to larger ones, because he found that the latter cut up the ground, in consequence of broad wheels. It took twelve minutes to fill the hogshead and a half, and it took eight or ten hours to water two acres of land with 36 hogsheads of liquid manure. Thus, it cost him for the man pumping 1s., and for the boy and carts 3s. per day, making a total of 4s.; the actual sum paid for labour being only 2s. per day, to manure each acre of land. The advantage of the liquid manure was very great; it was taken up by the plants at once, for the moment they mowed down the grass it was thirsty beyond measure, and would drink anything they would put upon it. He had intended to have brought them a specimen of the Italian rye-grass, which had been watered with the liquid manure, and had grown ten inches in the last six weeks, and if there was no frost, it would grow a foot higher before Christmas. Thus, these experiments gave them command over the seasons. Here, for instance, was barley (a specimen of which was handed round the room) cut off close to the stumps, which had actually produced 144 stems from one grain, and the barley had been raised by the use of liquid manure. This had been what was called among the farmers a "lipping" season—this was bad English but good Dorset—and the cattle had not done well, the grass being watery. But when he told them that he had cut his clover, which had been watered with the liquid manure four times, they would say that it had really been a "lipping" season, while his other clover, which had not been so watered, he had cut only twice this season. The clover thus raised would be worth its weight in gold if it came in a scarce time, the green crops in the month of August being of great value to the dairy farmer. Speaking of draining, when he began it cost him £7 an acre, but now he was able to get it done for £4 an acre. He thought the interest expended on the draining should be 7 per cent., as it could not be considered a permanent improvement, the drains being likely to get out of repair. He was not going to spin them a long yarn, but he would now speak of the profits; he was quite open to all the world, and he did not wish to disguise. It was a great national question, viz., that where two men were once employed there are now fifteen, and where £50 a-year was once expended for labour there is now £355. It was not a mere personal question to him (Mr. H.), but he felt deeply the importance of the subject, or he should not have attended there that day. Some persons, however, would say he must have a good bank (laughter): at all events he did not keep his experiments to himself; he told them what he could do, and the results of his experience were open to the rest of the world, to have the benefit of them. Mr. Huxtable then proceeded to allude to the observations of the chairman respecting the value of improvements to the farmer, as being as good as capital. Speaking of diminished capital (said the rev. gentleman), it is the same thing whether you give the farmer a certain amount of capital, or whether you diminish his expenses to that amount. He was sorry that some persons represented him as the landlords' friend only, and had made a very im-

proper use of his name. He did not live by his agricultural experiments, but he had taken the farms, and risked his capital on them for the benefit of agricultural improvements (cheers). An unjust imputation had been laid on him; he had been described as saying that the tenant should effect improvements without security: such an assertion was ridiculous. Landlords were but mortals. He maintained that tenants should have a good lease. Mr. Huxtable then read the following statement of his expenditure and receipts at West Farm, Sutton Waldren, from Sept. 1, 1847, to Sept., 1848:—

DEBTOR.

Rent of 100 acres of land, including glebe	£100	0	0	
Interest on capital sunk in permanent improvements:—				
Additional buildings and roads, £400, at 5 per cent. per annum	£20	0	0	
Draining at £4 per acre, the distance between the drains 3 feet deep being 24 feet; pipes 1 inch at 16s.; labour, 8s. the score perch; being just £1 per acre, charged at £7 per cent. on £400	28	0	0	
Wooden pipes of two-inch bore, 1,350 yards, at 1s.; forcing pump, and upright delivery pumps at every 240 yards, £80, at ten per cent.	7	0	0	
		55	0	0
Tithes, 5s. per acre; rates, 1s. 6d. per acre; insurance, £2		31	10	0
Purchased stock: cows, £196 4s.; bulls, £14; pigs, £27 15s.		237	19	0
Purchased food: corn for horses, £78; corn and cake for cattle, £63 16s.		141	16	0
Corn, &c., for seed, £43 17s.; manure, £37 13s. 2d.		81	10	2
Loss by death of cow, £9; miscellaneous articles bought, £4 18s. 9d.		13	18	9
Tradesmen's bills		54	10	0
Labour		375	0	0
Ten per cent. interest on £1,500, working capital		150	0	0
		£1,244	3	11

CREDITOR.

Wheat, 402 sacks 2 bushels, from 40 acres 1 rood, at 25s. per sack	509	2	6	
Butter and cheese from dairy	226	0	0	
Pigs	147	9	9	
Poultry	9	14	9	
Improved value of stock	188	0	0	
Forty bushels of rye-grass, at 7s. per bushel	14	0	0	
Two fat heifers	30	10	0	
Keep for 100 sheep	80	0	0	
Beasts sold	177	15	0	
		£1,382	12	0
Deduct expenses		1,244	3	11
Balance		138	8	1

that is, £1 7s. 8d. per acre, in addition to making ten per cent. of the capital employed. In conclusion, Mr. Huxtable thanked the company for their kind opinion of him, and in referring for a moment to the subject of emigration, he hoped that if it were carried out on so extensive a scale as had been suggested, it would be remembered that the emigrants had souls as well as bodies, and that clergymen should be sent out with them. He knew that at the present time the wants of the poor were very pressing; but, as the song said, better times were coming, and in the hope of those better times he trusted they would all go on and improve. Mr. Huxtable resumed his seat amid loud cheering.

STURMINSTER AGRICULTURAL SOCIETY.
THE BALANCE SHEET.

Among the various contributions to the *Mark Lane Express*, those detailing the experiments of the Rev. A. Huxtable have afforded much interest and instruction in relation to agriculture. I doubt not that the announcement of the "balance sheet" of the Sutton Waldron farm excited more than ordinary curiosity. That balance sheet is not so clear as it may probably be made; and if the rev. gentleman will condescend to supply a little more information, he will add to the obligations already conferred on the agricultural interest. The first question I would ask is, whether the statement of expenditure and receipts is such as may be fairly considered an average annual return? If not, it is worthless. If, however, it may be taken as an instance of what may be fairly calculated upon for a number of years, it is important to ascertain by what process such satisfactory results may be obtained.

Passing by the Dr. account, we come to the first item on the Cr. side; the whole of which I annex:—

	£	s.	d.
"Wheat, 402 sacks 2 bushels, from 40 acres 1 rood, at 25s. per sack.	503	2	0"
[This item in your type is carried out as £509 2s. 6d., which makes a difference in the balance of £6 0s. 6d.]			
"Butter and cheese from the dairy.	226	0	0
Pigs	147	9	9
Poultry	9	14	9
Improved value of stock	188	0	0
Forty bushels of rye-grass at 7s.	14	0	0
Two fat heifers	30	10	0
Keep for 100 sheep	80	0	0
Beasts sold.	177	15	0
	1,376	11	6"

The total shows a produce of rather more than £13 15s. per acre. What, then, is the description of land, and what the course of cultivation which would realise forty bushels of wheat per acre four times in ten years?

The second item is "butter and cheese;" and as this must be connected with the cows purchased, I would ask, how many cows were bought by the £196 4s., as stated in the Dr. account, as well as the number of bulls and of pigs? And this brings me also to the number of pigs sold.

The next item to the "poultry" is "improved value of stock." I would here inquire, what description of stock is referred to, and what has it been fed on?

Passing by the "rye-grass" we come to "two fat heifers, £30 10s."—for these there appears no Dr. account. The next is, "keep for 100 sheep, £80." On what were they fed? We then come to "beasts sold, £177 15s."—and here we are met by the same difficulty that occurs with the heifers: there is no account of beasts bought. Did the heifers and beasts cost nothing; or are the amounts from improved value?

Knowing nothing of the Rev. A. Huxtable beyond what appears in his publications, I feel that an apology would be required from me for thus referring to his statements if it did not appear that a gentleman, who has obtained such a notoriety as to be regarded as an autho-

riety on questions of great importance to agriculture, is bound to give such additional information as is requisite to enable others to comprehend his practice.

As no one reading the statement referred to can form any conception of the mode by which the results are obtained, I will request, as a particular favour to myself (and I doubt not it will be also so considered by numerous other readers of your valuable journal), if the rev. gentleman would give a little more information with reference to the items of his account; and also give us the cropping of the remaining sixty acres of his farm, for which no particular statement has been made.

If anything in my letter should appear offensive, I should much regret it; as my only object is to gain information. Being dependant on agriculture for a livelihood, I am anxious to add as much as possible to the little stock of knowledge I possess. Never having made 10 per cent., and £1 7s. 8d. per acre in addition, with the price of wheat exceeding 25s. per sack, I entertain fears for myself, and my brethren in agriculture also, if a free trade in corn should reduce the average price of wheat much below 25s. per sack, and other articles in proportion.

I am, sir, your obedient servant,
Hitchin, Dec. 27, 1818. WM. HAINWORTH.

MR. HUXTABLE'S BALANCE SHEET.

Sir,—The astounding account given by the Rev. Mr. Huxtable at the Sturminster Farmers' Club, reported in the *Mark Lane Express*, of obtaining produce equal in value to 14 rents, and near 15 per cent. interest on a capital of £2,360, employed on a farm of 100 acres, having led me to endeavour to ascertain its probable correctness, I forward you the result.

I could only estimate the probable value of the stock liable to depreciate in value, from the vague description given as to arable, pasture, and waste; but a per-centage should have been allowed for depreciation.

A credit is taken for improved value of stock to the amount of £188. This seems an enormous amount, and I suppose an error; as the pigs and grazing stock were sold, and the feed of 100 sheep valued at £80—£268. And I do not find that the cost price of the two heifers and other fat beasts is charged or deducted from the sale price.

I estimate the probable value of the fixed stock as follows:—

Cost of cows, as stated	£196
Cost of horses, estimated	100
Dead stock	104
Value of permanent stock	£400

And of course, if thrashing and other expensive machines, it will be much more.

Estimated value of permanent stock, subject to depreciation at 7½ per cent.	£ 30
Cost price of fat stock, sold for £208.....	104
	£134

The £188 credited for improved value of stock I must leave as doubtful; it is a large sum for summer

grazing on a farm of 100 acres, and should have been explained.

Mr. Huxtable observed that the balance of £138 8s. was in addition to the ten per cent. of the capital employed. The interest of £55 on £880 for permanent improvements, and of £150 on £1500, working capital, being added to the disbursements, of course reduce the balance to that amount, and thus the account will stand :—

Interest on £880	£ 55
Ditto on £1,508	150
Surplus balance	138
	343
Deduct as above	134
	£209

£343 is £14 less than 15 per cent. on £2,380 ; £209 is £5 less than 9 per cent. on £2,380. But the balance is struck as if the whole produce was to be sold ; and by so much as is required to hold the farm on, goes to pay off the capital employed ; but if held on, a deduction must be made for horse and seed corn ; and, taking it at the same amount as charged of £78 and £63, it amounts to £121, to be deducted from the surplus calculated as interest on capital employed, and then the account will stand as follows :—

Interest and balance	£343
Previous deduction	£134
Additional deduction	£121
	255
Balance for interest on £2,380 ...	£ 88

Or less than 4 per cent. on the capital expended by £7. Possibly a little more detailed account would have shown that my view of the subject is not correct. Such statements as made by Mr. Huxtable are liable to lead the public to think that farming may be made a very profitable business if capital is expended. It shows that the produce may be greatly increased and doubled, or even trebled in some cases ; but the main question is, Will it pay more interest than by other means ?

The 402 sacks of wheat, of course, were grown in 1847 ; the crop in hand may turn out to be less by one or two sacks per acre, and the selling price may be 2s. or 3s. per sack less, and thus reduce the credit account £50 or £100 for the coming year ; and the profit on grazing may be less. Yet every one will admit that the produce must be increased, or the cost of production reduced. How the difficulty is to be got over I must leave to others better qualified.

CHAS. POPPY.

Wilnesham, Suffolk.

MR. HUXTABLE'S BALANCE SHEET.

SIR,—In the *Mark Lane Express* of Jan. 1, Mr. W. Hainworth requests, as “ a personal favour,” that I would explain certain items on the balance-sheet of my West Farm, which, without knowledge of the system professed

to be followed, appear to him obscure. Though I fear I cannot, without giving a detailed account of the management there adopted, make that statement clear to a stranger, yet, as briefly as possible, I will try to elucidate the particulars to which Mr. Hainworth refers.

The soil of the farm is various, but all of it required frequent drainage, which it has received. 30 acres are of the Oxford clay, 7 acres on the green sandstone, the rest a fair average loam. The cultivator aims to have half of his farm in straw, the rest to be in clover and green crops, which are all consumed in the house by soiling, save what is required by the sheep. But the farm is *unequally* divided by a road, and this was the occasion last year of a considerably larger share of green food than of corn being grown ; but this would occur only in alternate seasons. Wheat hitherto has been grown every other year. The 60 acres devoted to green crops were divided pretty equally between clover, vetches, swedes, carrots, mangel-wurzel, common turnips, and Italian rye-grass.

The butter and cheese, and whey (consumed by breeding sows and their young) were the produce of 20 cows, which was the average number during the milking season. A considerable number of the calves are reared. Thus in September, 1847, there were 18 cows, 1 bull two years old, 1 yearling do., 8 yearling heifers, 12 calves, *i. e.*, 40 head ; but in September 1, 1848, there were 50 head, *i. e.*, 26 cows, 2 bulls, 6 heifers, 8 yearlings, and 8 calves.

Several cows were bought with calves by their side ; some of these were “ milked out ” and sold as “ dry.” These transactions are represented in the debtor and creditor accounts respectively, as—Cows bought, £196 4s. ; cows sold, £177 15s. They were nearly all heifers with their first calves, and being kept in an almost fattening condition whilst milking, their growth and progress prevented much loss by their sale. The two heifers referred to were reared by myself, and sold at 20 months old for £15 5s. each ; therefore they appear not on the debtor account as “ bought.” Similarly with the pigs : 10 breeding sows are constantly kept, and beside these, for fattening, 22 smaller ones were purchased ; in all, 114 pigs were sold, but most of these were parted with as soon as weaned, porkers last year having been in great demand ; the rest were fattened upon boiled roots and corn.

In conclusion, I beg to assure Mr. Hainworth that I by no means calculate on obtaining every year forty bushels per acre of wheat ; but, from five years' experience over the whole farm, I have exceeded thirty-two bushels per acre. But I feel confident that the growth of green crops by the process of liquid manuring can be vastly increased, and therewith the amount of stock kept and reared in the house. On this important subject I should like to have sent you calculations, but I am unwilling to occupy space with matters which might not prove interesting to many of your readers.

I am, sir, your obedient servant,

A. HUXTABLE.

Sutton Walden, Blandford, Jan. 4.

MR. HUXTABLE'S BALANCE SHEET.

SIR,—Your Editorial remarks, and the letter of Mr. Poppy, in your journal of the 8th inst., indicate an interest in the balance sheet of Mr. Huxtable, of which it is probable "many of your readers" partake. The reply to my inquiries in your paper of this week (for which I am greatly obliged) throws a little more light on the subject, although much might have been added without being tedious.

It being admitted that the average yearly produce of Sutton Waldron farm is about 32 bushels, or 8 sacks, of wheat per acre, the amount of which for 40 acres, at 25s. per sack, would be 400*l.*, it follows that the average annual profit, estimated at the above price, would be 109*l.* less than the profit of the year set forth in the balance sheet. After deducting 10 per cent. for working capital, the balance would be about 30*l.*, instead of 138*l.* 8s. 1d., as set forth for the year from Sept. 1st, 1847, to Sept. 1st, 1848; and would give an annual profit, including interest on capital, of 1*l.* 16s. per acre, instead of 2*l.* 17s. 8d. per acre, the profit announced at the Sturminster meeting.

We are informed that the farm is cultivated in two parts; one part (60 acres) being in green crops when the other part (40 acres) is wheat, and *vice versa*. If I understand aright, the stock on this farm—from 40 to 50 head of cattle, 100 sheep, sundry swine and farm horses—were fed on the root crops of 1847, which grew on about 23 acres of land, the proportion allotted to these crops being part of the 40 acres subsequently sown with wheat, which produced the crop of 1848 referred to in the balance sheet. As the swedes of the year 1847 were stated to be "quite a disgrace," it is very important to ascertain on what food this large quantity of stock were kept "in an almost fattening condition from Sept. 1st, 1847, to the time when the rye-grass, clover, and vetches were ready, extending over a period of about eight months." It is also important to know what portion of the green crops on the 60 acre division were consumed by the 1st Sept., 1848, and (if any) what stock of hay or clover, being a portion of that produce, was in hand on the said 1st Sept., 1848.

There are other features of the "balance sheet" which merit attention, but I will not weary you by touching on them. It is to be regretted that on this "important subject" Mr. Huxtable has not furnished a debtor and creditor account of stock in hand Sept. 1st, 1847, to shew on what his stock was fed until the spring of 1848. Until this is done the question will continue a mystery. Apologising to Mr. Huxtable and yourself for again trespassing, I am, Sir, your most obedient servant,
Hitchin, Jan. 12th. WM. HAINWORTH.

THE HIGH FARMING LEDGER.

TO THE EDITOR OF THE WESTERN TIMES.

DEAR SIR,—Having read a long statement in *The Western Times* newspaper of last week, on "High Farming," which is held up as a pattern scheme, I, as well as a very considerable number of your agricultural subscribers, should feel obliged for something like a proof of that statement; viz.:—A full, clear, and comprehensive statement of all the items, so as to leave no room for doubt, and to enable us, if all is right, to copy the pattern—for instance:—

What is Mr. Huxtable's system for cropping his land?

Can he raise forty acres of wheat annually on 100 acres of land?

Can he grow an average of forty bushels of wheat per acre, through the various seasons, throughout the term of fourteen years, on very poor land?

And, if he can, how is the land to be managed for that purpose?

How many cows were kept? How long was each cow milked? What was their united produce—and how was it disposed of?

How many pigs were sold? Were they fattened—and how disposed of?

In what state were the beasts sold and other stock, if any; if fed, what was their estimated weight and price?

How long a time were the 100 sheep kept? At what rate per head, per week, is the calculation made on them?

As Mr. Huxtable grew forty acres of wheat on a farm of one hundred, sixty acres remain, on which he has kept the enormous quantity of live stock—the produce of which amounted to nearly £900 in one year!!!

On what fodder were all these cows, pigs, poultry, farm horses, beasts, sheep, and other improved stock pastured during the whole of the year?

In what year was Mr. Huxtable's balance sheet made up—beginning and ending when?

As Mr. Huxtable has been kind enough to give us (through *The Western Times*) the outline of his farming for the benefit of others, he will, by giving us the detailed proof of a well got-up system of cropping and stocking of lands, give the farmers the most useful lesson they were ever taught, and at the same time confer a lasting benefit on his country.

In conclusion, I trust that you, Mr. Editor, will use your best endeavours to lay such statement as I have now asked for, before your readers as soon as possible.

ONE WHO FARMS.

Exeter, Jan. 3, 1849.

AGRICULTURAL LABOURERS.

That there is room for improvement in the habits, as well as the moral and social condition of agricultural labourers is unquestionable; and if employers had made

their condition the subject of consideration with a view to their benefit, they would themselves have been indirect gainers, more frequently than complainers.

Though here is a village school free of expense and accessible to the children of the poorest inhabitant, yet the fruits of their education give the impression that the children are kept in the most profound ignorance of all that is really essential to their well being in after life; and their education, meagre as it is, is of very short duration, for as soon as the children can do anything in the fields they are taken from school: the parents plead necessity, through the lowness of their own wages, as the reason for this: the children are there contaminated both by precept and example, and too often encouraged in acts of depredation and pilfering by their parents. This is the sort of material from which the labourers in the southern counties are derived. Then, when the future labourer is able to do as much work as a man, whatever his age or qualities as a workman, if single he is paid 2s. a week less than a married man; and this fact, together with his knowledge that his condition hardly can be worse than it is, causes him to get married at the earliest opportunity; although he knows where food and lodging are to come from on that day, he has not the least thought or knowledge how or where he is to get a meal on the morrow. Such is their ignorance and prejudice that if a new tool or implement is put into their hands it is either broken, or the prejudice against it such, that the employer finds he must take to the old plan or tool again, of necessity.

This state of things is often owing to the manner in which labourers are treated by their employers, and the former are frequently objects of sympathy rather than censure; one great evil is that the farmer employs as little labour as possible, more especially in winter, from an idea that the 7s. or 8s. per week he pays a labourer is so much money out of his pocket, and when employed it is always considered as a charity to give a poor man this pittance and have his six days' labour in return; the farmer usually will pay grudgingly 3s. or 4s. a week to keep a man in the workhouse, rather than 7s. or 8s. to employ him. The labourer cannot fail to see that his services are dispensed with as soon as ever the farmer can do without them; if the man does not go to the workhouse, he often does worse, as his state when unemployed is usually the prelude to poaching or pilfering, besides acquiring habits of idleness, which are not easily forgot when he may work if he will.

It is well known that in agriculture, as in manufacture, labour judiciously employed will repay, and is frequently the means of amassing a fortune, as hundreds of manufacturers in Lancashire and Yorkshire are instances, and who will candidly say that employment of labour is the source of their wealth, that the obligation between employer and employed is reciprocal.

There is abundant labour in this country for all who are willing to work; and at a future day, in all human probability, not only additional labour will be employed in existing channels, but new channels will be open for perhaps double the population. I have remarked that where cultivation is most primitive the labourer is in

the worst moral condition; the plough may be seen working four or five inches deep, and the farmer complaining of summers either too wet or too dry, and light crops. I have seen the farmer pay more money in a season for extricating his stock out of the pound than would have paid for labour to keep the hedges in good order; and roads so bad that more horses have been sent for to release his team, when there were plenty of stones upon his land close by for gathering up. I have seen good arable land for weeks together under water, the land producing not a fourth of an average crop, draining considered too expensive; one farmer said his land lost its goodness soon enough without draining it away. I have seen manure spread and exposed to sun and air for a fortnight before it was ploughed in, on land intended for wheat and turnips, and the farmer in arrears at rent-day. I have known the farmer's carts going to the nearest town for guano, and in his cattle yard at home was a large place occupied by a dark coloured liquor, reminding one of Barclay and Perkins's stout. I have seen the seeds of thistles flying in the air, and almost covering the ground for miles in extent, and the farmer only employed women at hay-time and harvest. Can it be wondered that the labourer is in a low condition where such are some of the specimens of agriculture? To make good labourers there must be a good feeling between them and the farmer, as also between the landlord and farmer; when each of these parties have an uncharitable feeling towards the other, the labourer suffers. It is also desirable that piecework should be adopted; the farmer should be as good a judge of a fair day's work as the manufacturer, who ordinarily has his work executed by the piece.

Good wages are the best means of insuring good labourers, and a man to whom a shilling a week additional is paid may and will often save three or four times that sum to his employer. An employer has it in his power to make men either good, indifferent, or bad, according as they are treated; but when all are placed in one category, all looked upon as bad, and treated as such, no encouragement given for the interest the workman takes in his employer's property, illness and industry all treated alike, the good are discouraged; and the bad and indifferent, although under proper treatment the latter would have made a good labourer under a humane and feeling employer, becomes a bad one because it is taken for granted that he is a bad one and always treated as such. That solitary instances of ingratitude and dishonesty are seen, is granted, and this more in higher grades than agricultural labourers; and he who says he has reason to denounce the whole class carries with him his own condemnation, for it shows he has made no effort to improve them. I once heard a labourer say in reference to his master, that his master was so good feeling, high principled, and unsuspecting, that he would rather a man would rob himself than his employer.

J. H.

—Gardeners' Chronicle.

SMITHFIELD CATTLE MARKET.

SIR,—Will you interfere, with your powerful pen, to put a stop to one of the most direful nuisances in this metropolis, viz., the uproar and scenes of desecration which take place in Smithfield-market from Sunday afternoon to the Monday morning following? What with the incessant barking of dogs, the bellowing of the oxen and calves, the bleating of sheep, the grunting of swine, the roaring and swearing of men, with torches, passing to and fro amongst the frightened animals, and the continual sound of blows inflicted on the horns, heads, and bodies of the poor animals, produce an impression on the beholders that no person can adequately describe, and must be seen to be believed. The desecration of the Sabbath is bad enough; but parties who reside in any of the streets leading into Smithfield, from the confined space, are absolutely in danger of their existence, more especially the female portion, from the terror inspired by furious oxen, &c. Surely the present deplorable state of things, as far as regards this nuisance in the heart of the city of London, cannot be much longer endured. Most certainly in no other city of the world would such an abomination be suffered.—I remain, sir, your most obedient servant,

AN INHABITANT OF WEST SMITHFIELD.

December 20, 1848.

The medical men who practise in the city of London declare that cancerous and pulmonary affections have been enormously increased, of late years, by the quantity of meat unfit for human food, which is daily disposed of within the bills of mortality. The obvious cause of this evil is, that, in Smithfield and Newgate markets, where inspectors are appointed, with full power to seize and confiscate such carrion, the accommodation is so execrable that they cannot perform their duties at all; whilst, in the other meat markets of London, no such necessary supervision has been established.

Our ancestors appear, in sanitary matters, to have been wiser than we are. There exists, amongst the Rolls of Parliament of the year 1380, a petition from the citizens of London, praying that, for the sake of the public health, meat should not be slaughtered nearer than “Knyghts-brigg,” under penalty, not only of forfeiting such animals as might be killed in the “butcherie,” but of a year's imprisonment. The prayer of this petition was granted, and its penalties were enforced during several reigns.

In 1848, however, we are not so squeamish. In the course of a year 220,000 head of cattle and 1,500,000 sheep are violently forced into an area of five acres, in the very heart of London, through its narrowest and most crowded thoroughfares; and are there sold, and there slaughtered, in the dark and undrained cellars, stables, and out-houses adjoining.

The inhabitants and shopkeepers, on the line of march taken by these herds and flocks, are weekly frightened from their propriety by the transit of 4,000 oxen and 30,000 sheep, that are hurried along by reckless drovers, and maddened by savage dogs. Scarcely a market-day

passes without some grave accident to man, beast, and property. A letter from “An Inhabitant of West Smithfield,” which will be found elsewhere in our columns, depicts, with the graphic force of truth, the grievous inconveniences and outrages to which those who reside in the neighbourhood of this intolerable nuisance are constantly subjected. The environs of Smithfield are poisoned by blood and garbage; the quality of the meat that we daily eat is deteriorated by the ill-usage which the animals undergo whilst alive, and by the faulty accommodation for cleansing and dressing it when dead. The graziers, who send their stock to London, are fleeced, in consequence of the monopoly which the Smithfield salesmen enjoy; and the poor of the metropolis are sickened by the pestilential trash which the crowded and undisciplined state of the meat markets enables the lower classes of salesmen to foist upon them with impunity. The cruelties, too, practised habitually on the wretched animals defy exaggeration. It will scarcely be accredited that the foreign cattle and sheep which are sold in Smithfield receive, during their transit from the port of their embarkation to Blackwall—a period which varies from two to six days—not one drop of water nor one atom of food. The deterioration of meat from bruises and over-driving is calculated, by butchers themselves, to amount, in Smithfield market alone, to above £100,000 a year. The evidence before the various committees abounds in disgusting details of eyes deliberately knocked out, horns broken off, tongues torn, women and children tossed, drovers killed and mutilated, and shop-fronts forcibly dashed in. And yet these are but the minor evils of Smithfield market.

That on which we now wish most especially to dwell, is the facility which the crowded and disorganized condition of this market affords for the unlawful sale of diseased meat; and, unluckily, meat of that description, being the leanest, is precisely the sort selected, at the low butchers' shops, by the poor, as being the economical.

From the 1st day of January, 1848, to the 7th of the following August, the inspector of Smithfield market confiscated, out of 120,000 cattle and 800,000 sheep, *not one diseased beast, and but five diseased sheep*. We do not mean to censure that officer for not doing his duty. We say that he could not do it. It was notorious, at the time, that on every market day no less than from 50 to 100 head of cattle, and several hundred sheep, calves, pigs, &c., in a fearfully morbid condition, were disposed of. One salesman alone sold weekly, for a considerable period, upwards of 100 sheep, consigned to him from abroad, which were afflicted with the small-pox. The sick animals are divided into three classes—“choppers, rough-uns, and wet-uns.” The best are driven into the low slaughter-houses in Cow Cross-street and Sharp's-alley, are there cleaned, curried, and furnished up, and are then disposed of alive to the in-

ferior class of butchers residing in poor and densely populated neighbourhoods. Those in a more advanced state of disease are slaughtered and sold on the spot to the compilers of German sausages, polonies, saveloys, and black puddings, and to the vendors of à-la-mode beef, meat pies, and cheap soups. It may be interesting to epicures to learn that the red tint observable in London German sausages is derived from a judicious admixture of horse-flesh, for glandered horses, cows which die in calving, and still-born calves, are all considered as fair grist to the sausage mills, which are to be heard in full drive in suspicious proximity to the knackers' yards. The men employed in this foul work often die, from accidentally inoculating themselves with the virus contained in the morbid meat which they prepare for public food. Tyler's-market is especially infamous for the measly quality of its pork, which is never outraged by the censorious eye of an inspector.

These evils exist in the very heart of London. Nobody denies them. They come home to every man's door—nay, to every man's dining table. All that we have here stated, and more, and worse, is to be witnessed twice a week in the City. It is to be found in the reports of the Committees of 1828 and 1847, both of which have in vain condemned Smithfield as a nuisance

which ought to be at once abolished; and we may also refer those interested in the matter to an able pamphlet on the subject, lately published by Mr. Ridgway, of Piccadilly, written in an excellent spirit, by no less a personage than *Mr. John Bull*. We trust that the enemies of over-legislation, who maintain that matters like these ought to be left to find their own level, will not be too hard upon us, if we implore the powers that be, to be as wise in 1848 as our ancestors were in 1380; to exile, at once and for ever, every cattle-market, slaughter-house, and knacker's-yard, far away from the heart of London; to place them under the strictest supervision; and, further, to take such steps as they in their wisdom shall deem advisable, for removing the uncomfortable imputations which the little work, to which we have alluded, has been the means of casting—we fear with much justice—upon the sanitary qualities of the German sausages, polonies, saveloys, black puddings, meat-pies, and à-la-mode beef of the British metropolis. Until the Legislature interferes, it will be impossible for any thoughtful man, who has read *Mr. John Bull's* work, to partake, in future, of these cockney dainties with any feelings save those of nausea and distrust.—*Morning Chronicle*.

THE LORD CHIEF BARON AND MR. WHITEHURST'S OPINIONS AS TO THE SMITHFIELD MARKET NUISANCE, WITH THE PETITION OF THE MERCHANTS AND BANKERS OF LONDON.

The feeling in favour of abating the nuisance of Smithfield market is most rapidly increasing; many who formerly opposed the removal of Smithfield market are now among the foremost to join the movement in favour of transferring it to Islington. Bankers in Smithfield, salesmen in Smithfield, aldermen of the City of London, common councilmen, many butchers, and a host of individuals more or less connected with the cattle trade have already come forward to volunteer their adhesion. Above all, the opinions of the present Lord Chief Baron of the Exchequer, when he was at the bar, and Mr. Whitehurst, the eminent Q. C. (in addition to the law authorities of the city), have given the *coup de grace* to any attempts to legally enlarge Smithfield with the consent of Parliament, which has been nine times refused.

What has been recently and some years before attempted by the Smithfield monopolists to enlarge the area of their market is clearly illegal. They dare not sell beyond the original boundaries. The trick of retaining cattle on the outside until those in the inside of the legal market are sold, is a palpable evasion of the conditions of the charter, and an obstructive nuisance actionable by all who may be injured by it.

Extracts from the opinion of Mr. Whitehurst, Q. C., adopted and confirmed as they are by the present Lord Chief Baron, will prove this.

Extract from the opinion of Mr. Whitehurst, Q. C. :

"I am of opinion the City of London have not the power

to enlarge the Smithfield Market. I consider the law to be clearly established—by the cases *Dixon v. Robinson*, 3 Mod. 108; *Curwen v. Salkeld*, reported 3 East 538; *Rex v. Cotterill*, 1 B. & Al. 67; *De Rietzen v. Lloyd*, 5 Ad. & E. 457, and others—that the grant of a Market or Fair to be holden in a particular place, confines the market to that spot, and that it is not lawful to hold it in any other.

"The charter (non prescription) not authorising the City to make the additions, the markets held on those additions are in the nature of *new* markets unauthorized by law, and must be considered in the same manner as if held in a distant part of the city. As such they are an usurpation on the Crown, and if any individual sustains an injury to his franchises by means of such new markets, he has the same remedies against the corporation as he would have against any person who should erect a new market without authority to the prejudice of his old market.

"*Temple.*"

"C. H. WHITEHURST.

Extract from the opinion of the present Lord Chief Baron of the Exchequer :—

"I am of opinion that the City of London is not authorized, at common law or by charter, to enlarge Smithfield Market from time to time as they may think proper, and to hold the market and take toll on such enlargement.

"The Corporation is liable in various ways to different parties. The Crown may proceed by information for the usurpation: any persons actually injured may obtain redress by action to recover damages. Or the intervention of a court of equity may be prayed by Bill so as to restrain a continuation of the injury. I have read the opinion of Mr.

Whitehurst, with which I entirely agree, and I beg to refer to the authorities cited by that gentleman in support of the opinion I have above written.

"Temple."

"F. POLLOCK.

Such is the law as declared by the greatest legal authorities of the land. Let us now see what is the view of the "merchant princes" and bankers of London. In Petitions to the Houses of Lords and Commons the following firms, among others, offer to advance their money to be heard by Counsel, Agents, &c., against the continuance of the Smithfield-market nuisance.

Barnett, Hoare, and Co.
 Hanbry, Taylor, and Lloyd.
 Cudliffes, Brooke, and Co.
 Lubbock, Foster, and Co.
 Smith, Payne, and Smiths.
 Magniac, Jardine, and Co.
 Roberts, Curtis, and Co.
 Overend, Gurney, and Co.
 Hankey and Co.
 Jones Loyd and Co.
 Baring Brothers.
 Crawford, Colvin, and Co.
 Johnson and Co.
 William Tait.
 Francis Ede and Son.
 W. Bell and Co.
 Ricketts, Bouteher, and Co.
 Sanderson and Co.
 F. A. Lizardi and Co.
 Benjn. Elkin and Son.
 Mangles and Co.
 J. W. Weleh.
 Small and Co.
 Robt. Eglinton and Co.
 H. G. Abbott.
 John Gore and Co.
 Roberts, Mitchell, and Co.
 Rawson, Norton, and Co.
 Daniell, Dickenson, and Co.
 Enthoven and Co.
 Laton, Hulbert, and Co.
 John Allen and Co.
 Hibbert and Co.
 Davidsons and Co.
 John Locke and Co.
 Gonger and Stenart.
 Warre Brothers.
 Moffatt and Co.
 Innes, Hodge, and Co.
 J. Mallett.
 W. Moberley, Son, and Co.
 Alexander Cullen and Co.
 Alison, Cumberlege, and Co.
 Geo. Pye and Co.
 G. W. Harrison.
 Gledstones and Co.
 T. Green and Co.
 Dickson Brothers.
 Bersler, James, and Co.
 Donaldson, Lambert, and Co.
 Wood, Brothers, and Co.
 F. Le Breton.
 Blyth and Greene.
 John Routh.
 Dallas and Coles.

Melville and Co.
 W. Anderson, sen., and Co.
 James Alexander.
 Jamieson, Brothers, and Co.
 Geo. Little and Co.
 Josh. Templeman and Co.
 Siordet, Meyer, and Co.
 Emanuel, Henry, and Co.
 Emanuel Henry Brandth.
 Lya's, Brothers, and Co.
 Burmeston Brothers.
 Thos. Stephens and Co.
 Albert Pelly and Co.
 Goune, Lucas, and Gribble.
 Smclair, Hamilton, and Co.
 Jno. H. Rudall.
 Gillespies, Moffatt, and Co.
 A. Stewart and Westmoreland
 Lesley Alexander and Co.
 J. S. Neave.
 John Entwisle.
 Kelsall and Co.
 M. Hetherington and Co.
 Barclay, Brothers, and Co.
 Gregson and Co.
 Drewett and Fowler.
 Prescott, Grote, and Co.
 H. J. Johnston and Co.
 Barnard and Co.
 Williams, Deacon, and Co.
 John Feltham and Co.
 A. Macdonald and Co.
 G. C. Jackson and Co.
 Trumpeter and Rouquette.
 Boyon, Hoyer, and Tagart.
 W. W. Forbes.
 Charles Ball and Co.
 Gibson, Linton, and Co.
 F. and A. Bovet.
 W. Markland.
 Quarles Harris and Sons.
 Collmann and Stolterfoht.
 Jos. Edermann.
 Peter Dickson and Co.
 Newman, Hunt, and Co.
 Boyds and Thomas.
 Williams and Co.
 Harvey, Brand, and Co.
 Anderson, Brothers, and Co.
 Solm. Hart and Co.
 Martin, Stones, and Co.
 Brown, Janson, and Co.
 Spooner, Atwood, and Co.
 Saunderson, Fry, and Fry.

experience of the association in respect to the mortality of cattle and the amount of losses during the period it has been established, nearly five years, was read; it also contained various suggestions for the future conduct of the business, and for the settlement of subsisting claims. A number of questions were put to the chairman, which were satisfactorily answered, and, upon the motion of Samuel Sandbach, Esq., of Clayley-hall, Handley, Cheshire, seconded by Simon Ralph, Esq., of Saughton-hall, Cheshire, the report was read and adopted with only one dissentient. The various alterations are to take place from the first of January. We have no doubt but that this association, having obtained an amount of experience which was not attainable at the period of its establishment, will progress successfully, and confer a great benefit upon the farmer.—Mark Lane Express.

PIG MANURE.

SIR,—In your valuable paper of this week you have been pleased to give an account of something that fell from me at the Frome Agricultural Society, respecting pig manure; but as it is not exactly correct, I will give you what I did say on the subject—viz., well knowing the excellence of pig manure, five years ago I was induced to try it solely for turnips. I tested it against guano and bone dust. The result was quite equal to the guano, and beat the bone dust hollow. My farm is one part clay and another sand; I found the same result on both. I have also the management of a farm in Hampshire, a poor thin soil, and there the manure was equally beneficial. I have continued to use it ever since, with the same results. To carry out my plan convenient farm buildings are necessary. I have a large dry shed, in which, first of all, I put a layer of dry coal ashes, about a foot thick and four feet wide, to which the deposits of the pigs are taken, both *liquid* and *solid*, and as soon as it begins to ooze out I put on more ashes, and so on till it gets to about four feet in thickness. I then again commence a fresh layer, and treat in the same manner. After lying some time, it is turned two or three times, and then it is fit for drilling. I have put in this year forty-five acres of turnips with nothing but this manure, and the result is now open for the inspection of any who may choose to see it.

I found the droppings of three pigs, carefully preserved, to be ample for two acres, and quite equal to three sacks of bone dust per acre. I am not speaking theoretically, but from actual experience; and I consider if we can get such valuable manure for nothing but the labour, it is much better than putting our hands in our pockets and paying 28s. or 30s. per acre for artificial manures.

This is as near what I said on the subject as I recollect, and if you consider it worth giving a place in your next paper, you are at liberty to do so.

I am, Sir, yours obediently, SAM'L. POORE.

Thoulstone Farm, Dec. 28, 1848.

—Mark Lane Express.

A general meeting of the members of the Farmers and Graziers' Cattle Insurance Association was held at Chester on Saturday, Dec. 22. The meeting was called by advertisement, as required by the regulations of the association. Members were present from several distant counties, and from Scotland. A report showing the result of the

T E N A N T - R I G H T .

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS,
WITH THE EVIDENCE.*(Continued.)**Evidence of GEORGE HEPPEL RAMSEY, Esq.*

CHAIRMAN.] Where do you live?—In the county of Durham, on the borders of Northumberland, five miles west from Newcastle.

I believe you are a proprietor of land, and also an occupier?—Yes, I am.

And you are also a magistrate?—I am.

And you are president of the Newcastle Agricultural Society?—I am not the president; I am the vice-president; but I believe I was a founder of the club.

Are you generally acquainted with the state of agriculture in the counties of Durham and Northumberland?—I am; I have seen a great deal of it.

Can you state generally what is the custom of the country between outgoing and incoming tenants?—I believe that the customs of the county of Durham are in many points very dissimilar from those of Northumberland.

What is the custom of the country in the county of Durham?—There are a good many leases, but there is a great deal of land held without lease; the greatest proportions are upon yearly tenure.

Can you state what is the custom of payment between outgoing and incoming tenants; and first, what is the period of entry?—The period of entry is the 13th of May, except the grass land, and the grass land is at Lady-day; that is, as far as relates to the meadow land; the pasture land the outgoing tenant occupies till the 13th of May.

Does the outgoing tenant in Durham have the succeeding corn crops?—They have. The entry is generally on the 13th of May, and the first rent is paid a little previous to the 13th of May the following year. There is a running half year of six months, both where there are leases and where there are no leases.

Are there any compensations made there by the custom of the country?—Not without special agreement.

Do you know of special agreements for that object?—All agreements, I think, generally embrace subjects of that description.

Do the agreements comprise payment to the outgoing tenant, for draining for instance?—No, I never knew a case of that kind.

You have not much other permanent improvement besides drainage in Durham?—No; the buildings are done by the landlord generally.

What is the usual course of cropping in the county of Durham?—It varies a little between the strong land and the light. The light land has been farmed upon the four-course system with turnips and potatoes, and sometimes on a five-course system, with two years in grass depastured. That we consider an improved system of farming; but upon the strong lands it is very various. In some cases the clay lands are left in fallows and succeeded by wheat, and then sown up with clover, and in some cases beans or peas, and then followed with oats generally speaking; sometimes tares, but not often.

Is there not a great deal of cold unproductive land in the county of Durham?—A very great deal of very bad land, and they are very small farms, many of them, too.

Is there great room for the improvement of farming in the county of Durham?—I think so, very much indeed.

Is there a great deal of draining required?—Yes; there is a great deal required, and a great deal is doing, and has been for some years past.

In your opinion would it be desirable to afford the outgoing tenant compensation for the improvement of the land?—It is my opinion, and it is pretty generally so, that a lease with some arrangement respecting the last four or five years of the lease would be a most desirable system; that is, a lease with a tenant-right at the end of it.

Have you a great many leases in Durham?—Yes, we have; and some very well-farmed lands too.

When you say that some arrangement is required at the end of the lease, do you think that at the end of the lease the land falls back in condition?—Always; it necessarily follows, I think.

Do you find that if a tenant has not a prospect of continuing his holding, in his own defence he returns the land into the hands of his landlord in an impoverished state compared with the state in which he has maintained it during the rest of his holding?—As to the manure in particular, and in other points. If a lease is granted, it in some measure protects the landlord; as to the number of ploughings, for instance, and the kind of crops that the land would bear; but the tenant towards the close of his lease, however good a farmer he has been for the first few years of his lease, naturally buys less artificial manure and keeps less stock.

What is the usual length of leases in the county of Durham?—They vary very much; from seven to twenty years. From twelve to fourteen years are the more common length; the long leases are rather the exception than the rule.

As to the county of Northumberland, what is the usual period of entry there?—It varies a little; most of them are on the 13th of May, but on others the entry is upon a different system altogether.

At what period upon those other estates do they enter?—The Duke of Northumberland is the largest landed proprietor in Northumberland. I am speaking of the usual leases. Entering upon the 13th of May, the tenant has the way-going crop to secure the landlord, because the landlord gives him six months' credit for the payment of the rent; but he has the way-going crop as security against that. In the case of the Duke of Northumberland the tenant enters at Lady day, but the entering tenant enters upon all the crops. The outgoing tenant in the case of the Duke of Northumberland's estates has not the way-going crops, and there is no running half year, no arrears of rent, or at least for a very short period indeed.

Is land usually held from year to year, or on lease, in the county of Northumberland?—A great deal upon lease, more than any county. In Northumberland the farms are much larger.

What is the usual length of the lease?—Many of them are for 21 years.

Do you consider that in Northumberland a tenant-right for improvements is a necessary addition to the lease?—As far as the last four years of the lease go.

In order to secure the landlord?—Yes, as well as the tenant; both indeed, besides keeping up the productive power of the soil.

There is also a good deal of cold land in Northumberland?—Yes; there is a great deal of cold land, but there is a great deal of excellent turnip land, and large breadths of turnips grow in Northumberland.

Speaking of the northern part?—The heavy soils are along the east coast, to Bamfboroughshire and that country. Nearer to the south-east part of the county the land is very strong, and in some parts good, and in some only middling. Then in the middle part of the county towards the north, joining the Tweed, the land is very fine.

Is that in the neighbourhood of Wooler?—Yes; the land is better about Coldstream and that part; the farming there is capital; to the west the moorlands come in, except the Tyne side; on the Tyne side there are excellent turnips again.

Is there not a good deal of improvable waste in the county of Northumberland?—There is more improvable land that is now being inclosed; a very great deal of the moorlands it is almost impossible to improve; some might be done.

Are you of opinion, looking at the whole of the county of Northumberland, that if the tenant received security for improvement an increase of produce would take place throughout the county?—I think there would, and it would be better for the landlord and the tenant, because the tenant would produce more and would be able to pay more rent to the landlord.

It would be an advantage to the landlord as well as to the tenant to give the tenant increased security for the outlay of his capital?—I think their interests are quite identical. I cannot see any difference. I rent some land at present belonging to a gentleman; it has been in my occupation a long time, and from year to year. I have great confidence in him, but now he has changed his opinion he wants to give a lease, and I have agreed to give him a small advance of rent on that account.

Sir J. TROLLOPE.] In speaking of Northumberland, are there any compensations there; you say there are none in Durham?—There are some payments, I can scarcely call them a compensation.

Is there anything allowed for drainage?—No.

Is anything allowed for fencing?—No. If there is a lease, they are bound to keep the fences in repair; if there is no lease, there is no remedy.

Is there any allowance in cases of manure?—There is no allowance.

Are bones used extensively in Northumberland?—Yes; very largely.

The improvements have been great?—Yes.

In your meadow land?—Yes.

And large tracts have been brought from pasture to arable?—Yes; bone manure has been used.

At the expense of the tenantry has that been done?—Yes, generally speaking; but many of the landlords have encouraged them.

By assistance?—Yes, by assistance; but the large farmers do not require it.

They do it themselves?—Yes.

Do they put up the houses and buildings?—No; the landlord finds them.

Who finds the fences?—In the first outset the landlord does it.

Do they improve the fencing?—Many do; but it is their own option.

CHAIRMAN.] Do not some of the large tenants require large buildings?—Yes; and the buildings are very ex-

cellent on most of the Northumberland farms, where, generally speaking, they farm from 700 to 1,200 or 1,400 acres and more.

Sir J. TROLLOPE.] And even more largely?—There are enormous estates in sheepwalks.

Have the tenants on those estates done any improvements in the shape of buildings?—They are never expected to do that; they are generally provided.

And you believe them to be provided on that estate you have referred to?—Yes; on the Earl of Tankerville's estate. I believe 20 of his farms let for about £20,000 a year.

Is that a district where great improvements have been made?—Yes.

Then those have been made at the joint expense of the landlord and the tenant?—As far as the improvement of the land and tillage goes the landlord has nothing to do with it.

The tenant has done the cultivation of the surface, and the landlord has improved it by draining and fencing?—Yes.

And building?—Exactly.

Is any drainage done on that estate you have just named of the 20 large farms?—I cannot speak quite so well respecting that estate as others. There has been a great deal done during the last few years.

Is not the course of cultivation in Northumberland, which is the best, generally the five-course system?—Yes, on the light land.

And the sheep feeding between the crops?—Yes.

Do they mow any of the land?—As much as they require.

And the rest is depastured?—Yes.

Do they give oil-cake?—They give more now than they did formerly, but still not to the extent that it is given in some of the southern counties.

It is not given to such an extent as in Lincolnshire, for instance?—No, I should think not.

Are there any clauses in the leases that you have seen for compensation to tenants on giving up their occupations?—I have seen some trifling things, but it is by no means the system.

What is the common course of proceeding between landlord and tenant when the lease is about to terminate; does it often happen that the same tenant renews the lease for the farm which he has previously occupied?—Yes, very often.

They are never put up to tender in the northern counties as in Scotland?—That is not so much the case now as it was 20 years ago.

Has the tenant any preference to take his old farm?—He has no legal preference.

Is it the custom of the country?—Yes; they stop a long time.

And they go on and renew the lease for a fresh term?—Yes.

Then the question of compensation does not arise?—No, there is nothing to give rise to it.

It is an outgoing compensation?—Yes; the outgoing tenant is obliged to go, as you will see by the entering, at the 13th of May. The green crops are then consumed; the outgoing tenant eats the pasture land till May without any agreement with the incoming tenant. The landlord never interferes; the meadow land he enters upon at Lady-day.

That is to prevent its being stocked too late in the spring?—Yes.

Then the outgoing tenant sows the oats?—Yes, which he reaps, except in the case of the Duke of Northumberland.

Has he the privilege of using the barns?—Yes.

Then the incoming tenant receives no produce of the

soil, except the meadow land, till the ensuing year? None.

It requires great capital? Yes; but he gets a considerable time to pay his rent.

There is the six months, the running half year? Yes, he pays nothing; he is only one-half year in advance.

On that improved system of husbandry, which you have stated exists in Northumberland, do you think that still further improvements might be made with a system of tenant-right? Yes; and generally the more clearly it was understood the more capital would flow into the farms.

Are not the farmers of that country notorious for being high managers, and great capitalists as well? Still they would keep more stock, and use more artificial food.

And if they were paid for it they would farm higher at the termination of the period of the lease? I think if there was a remuneration for the last four years of the lease they would, as a matter of necessity, keep it up, and the farm would be delivered in a better state than it is now.

Do they put up buildings generally? No.

Are they allowed to leave those they do put up, or are they paid for them? As far as threshing machines go they are often the property of the tenant.

Are they fixtures in any shape? No, they are not; and the landlords are not bound to pay for them.

They are placed in sheds? Yes, on the farms; and they are taken away if they cannot agree with the landlord or the incoming tenant. In many cases where there is water power the landlords are at a considerable expense.

In fitting up the power? Yes.

There the landlord finds the power and machinery too? Sometimes.

If the tenant possesses them he is not prevented taking them away? He cannot be prevented.

Is not it a fixture in law? It is generally arranged in the lease; but where there is no lease, by the custom; where there has been a fixture I never knew a tenant prevented taking it away.

They are generally fixed machinery, not portable machinery? They are nearly all fixed; but then there is nothing in the wall excepting a mere beam going through. A question was put just now as to bone manure; I have a large connexion in that business.

Are you engaged in a business of that description? Yes, I have a mill.

Do you crush bones for sale? Yes; I was going to say that some years ago, thinking it was necessary in our northern parts, as well as Hull, I put up a mill at a considerable expense; and to show that when a useful thing is required it is generally supplied in some shape, I may mention this, that I could get at first but two or three tons of bones a week; nobody knew the value of them; there were not collected: I found great difficulty in getting them at all. I then formed establishments in all the towns, or at least gave it to be understood that bones would be bought, and the increase in the supply became enormous. It went on then also from the great importations from abroad, till at length I think, in one year, I sold nearly £20,000 worth, and for many years from £10,000 to £15,000 and £16,000 worth a year in Scotland and Northumberland, and elsewhere.

You sent it out to large distances? Yes.

Then, of course, you wanted largely means of carriage to your mill? Yes.

Can shipping get up there? No, but craft can; keels or lighters, and some small ships.

You state that merely to show the very great increase in the use of bones in your district?—Yes, and the great

improvement in agriculture that has taken place. Bones have fallen off within the last few years.

From what reason?—Guano has interfered with it.

Do you sell that also?—No, not to any great extent; that was found cheaper and more preferable, but there is now a great increase in the demand for bones.

Is the opinion of agriculturists in your neighbourhood not so favourable to guano?—There is a strong feeling in its favour when it is good, but I am afraid it has been greatly adulterated.

That has injured the sale?—Yes.

Have you used it yourself in your own occupations, so as to be a judge of its merits?—Yes.

In cases of compensation, should you include the use of guano?—I do not think it would be a permanent manure.

Not exceeding one year?—Rather more than that.

You think it would extend longer than that?—Yes, in the second year it would effect some good.

You cannot calculate upon it then beyond the second year?—No, not safely.

You would not include it as a tenant-right compensation beyond one year?—I have not observed the benefit go any further than that, without the system of farming was of a nature that the guano produced a large crop of turnips, and those turnips being eaten off by sheep, then the improvement would go on by those means, not by itself.

By means of the sheep?—Yes.

Have you any opinion as to the durability of bones?—They last a long time.

Have you used them with or without the sulphates?—I have used sulphuric acid.

Is it the case that a small quantity of bones dissolved in sulphuric acid, will last as long as bones in the crude state?—No.

How long are bones in a crude state beneficial?—That depends upon circumstances, as to quantity used.

To what extent are they used?—In drained land, about two and a half quarters an acre.

The average turnip land? Yes; I have seen four or five bushels.

Without acid? Yes; put in by the drop drill.

Do you use any farm-yard manure, made from oil-cake or other stimulating matter in connexion with the bones? The most improved plan is this: we raise manure by every possible means we can; suppose we have so much fold-yard dung as will cover 100 acres by itself, say 12 or 14, or 15 tons an acre, we then would spread it over 200 acres and divide the bones over the land also; that is, we would not put the bones upon the one half and the manure upon the other half of the land, but spread the two together over the whole of the land.

Then when you drilled the turnips you would drill that in? Yes.

Then when you break up the pasture land, what white crop do you put in; oats for your first crop? Yes.

Do you grow wheat after turnips? Yes, upon some lands, but generally barley.

Then what is your course; then you have your seeds for one, two, or three years? Yes.

And what do you break up your seeds with? Oats.

Do you use any dressing in breaking up the seed land? Never.

What do you grow wheat upon? The spring wheat upon the turnip soils.

Then in the ordinary course, they do not grow wheat on the turnip land? No; they grow a great deal after the summer fallow.

Mr. HENLEY.] You have stated that the day of entry is upon the 13th of May, and the rent is payable a little before the 13th of May following? Yes.

Is that the custom in the leases as well? Yes, they are generally the same.

Is the rent not reserved quarterly in the leases?—No, they are six months' payments.

When is the first payment stated in the lease to be?—The first payment is six months after the 13th of May you enter; there is seldom any paid till near the May following.

The question you were asked was, when it is made payable in the lease?—Six months after entry; a strict landlord would say, You must pay me six months after the entry; but it is not the custom to ask for it till three or four months afterwards.

That is by the forbearance of the landlord?—Yes.

Still, by law, it would be reserved to be paid six months after?—Yes, he could legally demand it.

It is not the custom to receive the rent quarterly?—No, it is six months in all cases.

Is there any difficulty, in your judgment, in securing, in the leases, a proper tenant-right, if both landlord and tenant were willing to agree to it?—Where there are long leases, there would be very little difficulty indeed.

What would be the difficulty in a short lease?—There would not be much difficulty, but the valuations would be more often necessary.

Would there be any, and if any, what difficulty, in the landlord and tenant agreeing between themselves, that there should be a tenant-right at the end of the term?—I think it would be more likely to get an intelligent man of capital, with a tenant-right for the last few years of the term, than you would be able to get a good tenant to take upon a yearly tenure; for this reason, that a man of capital will not settle down without some certainty of remaining a long time.

In your judgment landlords and tenants, if they both were willing to make an arrangement, can make an arrangement sufficient to secure a proper tenant-right?—I think it would be a great improvement upon the present plan.

And they would be able by law to do it?—Yes; but there is no agreement in the present case; there is seldom any agreement sufficient for the improving tenant.

Would there be any difficulty in introducing proper clauses or covenants into leases or agreements to secure a tenant-right at the end of the term?—Supposing there is a lease and agreement for one year?

Supposing there is a lease or agreement either for one year or 20 years, what difficulty is there in introducing a proper covenant of tenant-right into that agreement or lease?—There would be no difficulty as to the introduction of it.

That would not, in your judgment, answer the purpose?—It would answer the purpose better with a lease than without a lease.

That, of course, is a separate question, whether a lease or agreement is the best system of holding, but the tenant-right to be paid is irrespective of that altogether?—I think it would simplify the whole business both for landlord and tenant in both cases.

To have an agreement?—Yes, to have an agreement, with some sort of arrangement, you may call it tenant-right or anything else.

What is meant in the question by tenant-right is, that the parties should be liable to pay, and the tenant to receive the outlay that he had made upon the farm after he quitted the possession?—I think it would be a great improvement.

You see no difficulty in introducing that into the agreements?—No; I think if it was the general custom throughout the kingdom to enter into those arrangements, then very likely there would be no possible ne-

cessity for going further; but the customs are very various and complex, even in our counties, as well as with reference to some evidence I have heard with respect to other counties, that it might be very prejudicial to allow matters to remain as at present.

Do you not think it is easier for landlords and tenants, the customs being so complex, to settle those matters by agreement rather than by law?—No.

Why?—Because where there are so many different opinions, that in the end, perhaps, there is no opinion at all.

Is not it then a very difficult matter for the law to come in between all those opinions?—Yes, but it must step in at first in any case.

If the tenants and landlords agree they can make their own bargain?—Yes, if they agree upon a system that enables the ground to produce a fair quantity of produce, then I think they are doing all that can be almost done; if land lies in a waste state in a populous country like this, it is disadvantageous to all concerned.

It is the interest of the landlord as well as the tenant to cultivate the land?—Yes.

Should you cultivate it, when properly secured, in laying out your capital?—Yes.

And it is the interest of the tenant and the landlord to do that which is the interest of both?—I should think so; we think that holding from year to year is a bad system with us.

You would not compel persons to grant leases?—You cannot compel any person to grant a lease.

Why should it not be as desirable to leave the landlord and tenant to settle the covenants of a lease, as to settle the question whether they would take a lease or grant one?—The present system is very imperfect, both of letting and taking land.

And yet under this imperfect system the great improvements you have spoken of have gone on in the county of Northumberland?—It does not exist so much there.

What is the plan there?—They have long leases of the large farms.

Are you to be understood to say that the tenancies are very small in Durham?—Yes.

That may be one reason why so much capital has not been outlaid on that land?—The small farms, generally speaking, are very badly farmed.

Those small farmers are probably short of capital?—Very often.

Then is it your opinion that, for the sake of increasing the produce of the land, all those smaller farmers should be swept off? No; I would not say that.

Then if it is requisite to have that capital which they do not possess, how would you deal with them? I should say that many of those farms that have been spoken of in Northumberland are of a different description of farms from the farms in Durham. Smaller farms would suit the county of Durham as well as if they were very large: for instance, I should think that a farm of 1,000 acres would be a very large farm in Durham; a farm in Durham 250 or 300 acres is considered a large farm; the nature of the soil is so different, and there is the smallness of the inclosures besides.

How low do the holdings go in the county of Durham? Many of them just to keep one pair of horses; 40 or 50 acres.

And on that kind of holding the occupiers are generally short of capital? Yes, and they work the farms themselves very often.

If there were to be an extensive outlay of capital on those small farms, those small tenants must be got rid of, and men of capital must be brought in their places?

—Many men have not got capital enough to farm with at present.

Then those improvements would result in those men being put out of their farms, and four or five farms being run together, men of larger capital coming in, in their place?—I think that the great advance that has been taken of late years in farming knowledge will improve those men and make them better farmers.

Have they got the money?—Yes, I think a man with a small farm, generally speaking, with a family of his own, makes it up by industry, and there is not that great difference in the productive power between the one and the other.

The benefit of good farming being generally known, those men are availing themselves of what they see going on, and making improvements upon their own farms?—Yes, just so; though they do not join a farmers' club, they get a newspaper and see what is going on there.

They are improving?—Yes, very fast.

Without any law to help that improvement?—Where they have good landlords they generally improve; where they have bad ones it is not so.

You say the improvements are going on fast; do you consider the bulk of the proprietors to be good landlords?—There is great need of improvement. I do not know that, generally speaking, they are different from other landlords, but many of them are without a large quantity of money, and lands are held under the church and in various ways; there are different tenures of property.

Are the church lands worse or better cultivated than the lands held by laymen?—I have said, generally speaking, I do not know that there is a great deal of difference; the laymen, where they understand the farming business, I think have better tenants than could be expected in common with the church; the church cannot pay so much attention to it.

Are the church lands in Durham generally let to the actual occupier, or are they let to some persons who underlet them to others?—The glebe lands are generally let by some land agent for the rector.

Speaking of church lands, the question does not refer to parish glebes, but to the lands belonging to the cathedral of Durham, under which there is a great deal of land held; is there not?—Not so much in the shape of lands as in the shape of mines.

They have not a great deal of land?—No; as I have said, it is in mines; their great wealth is in the coal and lead mines.

With respect to the Dean and Chapter land, is that, generally speaking, let to the actual occupier, or to other parties who underlet it?—Generally speaking to occupiers; but the Dean and Chapter let land in various ways; a great deal of it in building sites; for instance, the town of South Shields is nearly all Dean and Chapter land.

Have they much farming land?—Not much; they have a very considerable property, of course, in farming land, but not the major part.

In your opinion would it be an advantage if agricultural buildings were put upon the same footing as to right as trade buildings are?—Trade buildings are very various. I should scarcely know how to answer that question.

The trade buildings, in the shape of fixtures, are always the property of the tenant; would it be an improvement, in your judgment, if the same principle in law were applied to agricultural buildings and fixtures?—I have always understood that the property, the houses for instance, will constitute the property of the landlord, and the fixtures that of the tenant.

You do not know the distinction in law between what are termed trade fixtures and other fixtures?—Yes.

There being a great distinction, would it be an advantage to the farmer if the same distinction were extended to agricultural fixtures?—They would have no fixtures except their machinery, which would be the threshing machine.

Buildings put up to put threshing machines in?—That, I would say, would be better to be done by the landlord.

Supposing the tenant does it, would it not be an advantage that he should be able to remove it or be paid for it?—The tenant would not do it unless he paid considerably less rent for his land.

Do you think it would be any advantage to him to have any such alteration in the law?—No; proper restrictions and regulations might answer both parties, but it would be injurious to the landlord if the tenant was to build what he thought necessary, and to call upon the landlord to pay for it.

What would be the injury to the landlord if the tenant was permitted to take it away, leaving the premises as before?—There would be none.

The tenant would have that advantage?—Yes.

He could not do it now without the permission of the landlord?—That depends upon the nature of the fixture; if the tenant were going to take it away he would build it of wood.

Then the law would not consider that a fixture to the soil; in the event of putting up other buildings, would not it be an advantage to tenants to have the right of removing those buildings, if the landlord would not take them?—The tenant would not do so without a lease; then it would be a consideration with the tenant, if he were not quite certain that he could take them away.

But if the law was to be altered, would not it be a benefit to the tenant to be able to take them away?—Yes, it would.

Does any difficulty occur in your knowledge in the counties of Durham of Northumberland from parties not having the fee-simple of the land being unable to give leases to tenants?—Yes, many cases.

Would it be an advantage to the country generally that persons upon such disability should be able to secure the tenant at the end of the term?—Yes, it would be an advantage to the landlord in possession, and also an advantage to the landlord that succeeded.

And also to the tenant?—Yes, and to the tenant also; it would ensure that land to be as well farmed under such regulation as property where there was a full power to grant a lease; tenant-right would apply particularly to that.

Then would it be an advantage that power should be given to parties having limited interest in land to do that under certain regulations, the same as if they had the fee simple?—That is self-evident.

Should that be extended to the cases of incumbrances upon land, mortgages, of course, included?—I do not know that they would be able to protect themselves; a person will not give more money than he sees a prospect of realizing. If he is so improvident he must run the risk of getting it back; he would have a better chance in that way, but of course it would affect him too.

Do you think the mortgagee would be injured by the tenant being secured in the possession of the farm by a lease?—I think his position would be improved.

And the power of the tenant to receive compensation at the end of the lease, under the covenants of the lease, would be no injury to the mortgagee?—Considering the extent which it could ever go to, it would not be large. For instance, as to buildings and drainage, the buildings would still be there, and the land would be of more value than before when it was undrained, therefore the mortgagee would still have a superior guarantee.

The value of the land upon which he has spent his

money being improved, he would be in a better position instead of a worse?—Yes; I do not see that in any case he could be worse.

Do you think that the tenant being about to outlay a large sum of money in drainage or in permanent improvements, should give notice to his landlord?—That would be necessary. I have known serious cases happen in that way.

In your judgment notice ought to be given?—Yes. I know some Scotch farms where the tenant has taken a new lease upon the condition that the landlord would expend a certain sum of money in drainage, and the tenant a certain sum of money; a 19 years' lease has been granted; that is the common way in the Lothians in Scotland. A man of capital goes to work immediately, and goes a little faster than the landlord would like or feel it convenient; but that might be remedied by stipulating that a certain amount of work should be done in each year, which might be done by arrangement either by tenant-right with or without a lease, which is generally done.

Supposing a tenant, by virtue of his agreement, or by law, to be entitled to receive payments for permanent improvements at the end of his tenancy, in your judgment should notice be given to the landlord when those improvements were about to be made?—The word "improvement" would depend upon the opinion of the parties.

But should the landlord have notice of the work about to be done, in order that he might see how it was done?—I think he decidedly ought. I would not trust a great many tenants to drain my land unless I knew how it was done.

Your opinion being that notice should be given, ought the landlord to have the power of objecting to the work or not?—Then it would become a matter of opinion again between the landlord and tenant, which would not be very easy to manage, because the tenant would say, "I will have a drain three feet deep;" and the landlord might say, "It shall only be 18 inches;" and they might be both wrong; it might be left to men of judgment to say what is the best drain, and what the parties are entitled to.

That, of course, is giving the landlord as well as the tenant a voice in the matter?—It is highly necessary that he should have a voice.

Do you extend that to buildings as well as drainage?—Yes, I think so.

Do you extend that generally to all permanent improvements?—Yes; I think the interest of one ought not to be sacrificed to the other.

In the valuation that would take place at the end of the tenancy, should that valuation be based upon the outlay of the tenant, or upon the unexhausted value to the incoming tenant?—I think the outgoing tenant.

In the valuation that would take place at the end of the tenancy, should that valuation be based upon the outlay of the tenant, or upon the unexhausted value to the incoming tenant?—I think the outgoing tenant ought to have what they are worth.

You think it ought to be based upon the outlay of the outgoing tenant?—Yes; leaving the incoming tenant and the landlord to make such arrangement as they pleased upon coming in.

In the valuation that would take place at the end of the tenancy, should that valuation be based upon the outlay of the tenant, or upon the unexhausted value to the incoming tenant?—They are both interested in that.

Without entering into the question of the interest, which do you consider to be the principle upon which the value should be determined?—The principle should be as far as the outgoing tenant goes, and as far as the unexhausted improvements go upon the incoming tenant;

those unexhausted improvements would have to be paid for by him.

Is the amount to be paid by the incoming tenant to be ascertained by reference to the capital expended by the outgoing tenant, or by the value derived by the unexhausted improvements to the incoming tenant?—It strikes me that the question is entirely between the outgoing tenant and the landlord.

Suppose the tenant has expended £500 on drainage, and the drainage has been done so badly that it is no advantage to anybody, what, in your opinion, should the incoming tenant pay for that?—If it was so badly done that it was no advantage to anybody, he would have to pay nothing at all.

The result of that would be, that the valuation should be upon the benefit to the incoming tenant, and not in proportion to the capital spent by the outgoing tenant?—If it were well done, and if there were anything to receive for the money he was expected to pay, then he would get something for the money he paid.

That is an extreme case; but cases may arise, for instance in respect of manures, where a party may have made a great expenditure, and great doubt may arise whether any, and if any, what benefit will accrue to the succeeding tenant?—I think we are not so well acquainted with that subject in the North as they are in the South; but I think, if an injudicious man took saturated lime, for instance, and threw it on the land at great expense, instead of laying it on dry, so that it would come to no good in the one case, though it might do a great deal of good in the other; if he was so bad a judge of his business that he did not impart any benefit to the land thereby, he would be entitled to no remuneration.

Then the result of your answer to those two questions is to be taken to be, that the valuation ought to be made upon the benefit to the incoming tenant, without reference to the capital expended by the outgoing tenant?—Without reference to the capital, but to the improvement.

Then by whom, in your judgment, and how, should the money be paid between the outgoing and incoming tenant; what security should the outgoing tenant have for the payment of the money?—His security ought to be his landlord.

What security would you give him against the landlord?—I should expect that the landlord would pay him and that the landlord would make the best arrangement he could with the incoming tenant, as far as the money part goes.

Your judgment being that the landlord should pay, in what mode would you secure to the outgoing tenant that he should get his money?—I think the landlord ought to deduct it off his rent, or give it him.

Suppose the amount is greater than that amounts to, in what way would you propose that he should be secured in getting his money?—Supposing it was equal to half the rent?

The question was put, supposing it to be more than the rent due?—Then I think the landlord would be as much entitled to pay it if it was more than the rent as if it was the rent itself.

In what mode would you propose that the tenant should get the money from the landlord?—I do not know any other way than its being deducted; not to make the landlord pay it before the tenant had a fair and equitable right to it. I do not know any other way, but the landlord must pay it.

CHAIRMAN.] Supposing the landlord to have a settled estate and to be insolvent, the question is, what remedy would you give the tenant?—The tenant would be exactly in the same position that other people would be in who make bad debts.

MR. HENLEY.] There are a great many estates that

are dealt with by the Receiver of the Court of Chancery, and others that are in the hands of various parties; the landlord may be out of the kingdom, so that the tenant could not get at his person. Have you considered in what way you would give a remedy to the outgoing tenant to get this money you say the landlord ought to pay?—In that case, I do not know how he is to get it.

Then would not that be laying out a trap to induce the tenant to lay out his money, without giving him any security by law to recover it?—If it was a yearly tenancy, the tenant would get the farm cheaper, or have his eyes open to run the risk.

How is he to get it?—In the one case a man cannot perceive what may happen 20 years afterwards, but he may have an idea what will happen one or two years afterwards.

You say a man would not take a yearly holding of an insolvent landlord?—Not without he got it very cheap.

Then you cannot tell the Committee what, in your judgment, would be the best security for the outgoing tenant to get his money in the case supposed?—I think if it was in Chancery, I can scarcely tell what would become of it then.

You having considered the question of tenant-right, can you inform the Committee what you consider to be the best security for the tenant to get his money in the case supposed?—If there were a particular case stated, perhaps then I might be able to give a particular answer; but there are so many various ways of landlords being involved and having nothing to pay, that it would be difficult to answer the question.

In what mode would you propose that a remedy should be against the landlord; various remedies have been suggested to the Committee, and they desire to know your mind upon the subject, you having turned your attention to it?—No, I never thought of it till within this last week or two; it has not been much thought of in the North.

CHAIRMAN.] Could you not give the outgoing tenant a means of recovering his claim for tenant-right similar to the remedy which is given for the recovery of tithes rent-charges?—Yes, that might be done; the land might be made liable to the debt.

MR. COLVILLE.] Prior to other debts?—I do not know that; there are so many things involved.

MR. MOODY.] In the instance of land being under a mortgage, how would you give the remedy then?—It is impossible to pay something out of nothing; as, for instance, the Tithe Commutation Act; there is no legislative measure passed now which could supersede that Act. I conceive that cannot be set aside; that is one charge.

You gave a decided opinion that the remedy should be against the landlord, and not against the incoming tenant?—Yes, I think so.

Having given that decided opinion, the tithes rent-charge, if it were to be similar to that, would be recoverable against the tenant?—Yes, the crop would be seized?—The crop is liable to the tithes rent charge; that is the principle of the Tithe Commutation Act.

You could deduct it?—Yes; the incumbent can seize the farmer's crop.

For the current rent?—Yes; the rent is not so good to recover in the second year.

CHAIRMAN.] When you say that this might be done by private bargain, you do not desire to be understood to express a legal opinion whether the owners of settled estates, and other persons of limited interests, have the power to do so by law?—I should think they had not; in many cases they have not.

You have many settled estates in your part of the country, have you not?—Yes, a good many, under marriage settlements and other things of that kind.

Is that a large proportion?—No, I do not know that it is a large proportion.

Have you a great deal of church land there?—Yes, in the county of Durham.

And land held in fee-simple is often mortgaged?—Yes, and there is a great deal of copyhold.

Then when you take out land under a marriage settlement, and held under the church, and copyhold and land in fee-simple that is more or less mortgaged, will you not have taken a very large proportion indeed of the whole of the county?—A great proportion of the county of Durham; there is so much church land and land of that kind. The copyhold lands are generally let at a very small rent indeed.

MR. HENLEY.] With fines?—The fines are very trifling; the Dean and Chapter I find generally expect one rent in seven, both in land and houses; but copyhold lands are held on very small fines; that is considered a property nearly equal to freehold.

That copyhold land is according to the custom of the manor under which it is held?—Yes, there is a copyhold court.

CHAIRMAN.] Though you have some extensive cases of very large farming in Northumberland, have you not also a great deal of land not well farmed?—The inferior soils are certainly worse farmed than the good ones, but generally speaking it is a very well-farmed county; of course there is a great deal of bad farming in it, as well as in other places; it is much the same in the parts I mention as in Berwickshire and the Lothians.

Then there is first-rate farming?—And there is some in Northumberland, in the neighbourhood of Newcastle; that is rather cold; and when you come near towns, land is not farmed on very scientific principles; they crop away as fast as they can; they pay a high rent, and put on a great deal of manure, and grow plenty of coveh, make the most they can of it, and are it in bad condition.

Evidence of Mr. GEORGE KILBY.

CHAIRMAN.] You reside in Leicestershire?—I do.

What is your occupation?—I am a tenant farmer in the county of Leicester, residing half way between Leicester and Melton Mowbray.

What is the extent of your farm?—Two hundred and sixty acres.

What is the time of entry upon farms in Leicestershire?—At Lady-day, principally.

Does the tenant take the succeeding wheat crop?—No; it is valued to the incoming tenant.

Does he pay anything for the turnip crop that is fed off?—Nothing at all.

To whom does the dung belong?—To the landlord.

Is there any compensation to the outgoing tenant for any improvements that he may have made?—None that I am aware of.

Do you think it desirable that certain compensation should be given?—I do. I think that in consequence of there not being compensation the capabilities of the soil are not developed in that way that they would be if there were compensation allowed.

In what way do you think the land would be improved if compensation were allowed?—Generally, I think, by drainage.

Is there a great deal of drainage required in Leicestershire?—A great deal is required in the county of Leicester; a very great deal indeed.

Would it generally increase the produce of the land?—I think it would very much, especially the produce of corn, and also the food for animals.

Is there any land there that if it were drained would grow root crops for sheep, which now is not capable of

bearing sheep?—Yes, I think that is so. I do not say it would bear them to be fed off; but it would grow very good root crops for food.

Have you any inferior grass land in Leicestershire?—A very great deal undrained.

If that were drained, would it be desirable in your opinion to break it up?—I think so. We have a great deal of the eastern portion of the county that lies entirely in grass, with no arable land whatever attached to the farms, and I think if the inferior parts of those farms were properly drained and broken up, they would produce a vast deal more of food, and everything that would be required, than they do in their present state.

Where there is a farm of poor grass land, without any arable land to produce straw, there is not much good manure made?—No; of course very little.

And there is very little employment for labour there?—There is very little employment for labour there; not one-fourth, nor perhaps one-eighth of the employment for labour that there would be if a certain portion of the farms were broken up.

You think then that in this poor grass district of Leicestershire, if the land were drained and broken up, that that land would be able to employ four or even eight times the number of labourers it does now?—Yes, I think so.

Why is the land not drained at present; is it that the landlords are not disposed, or that they do not find it convenient to lay out so much money on their farms?—I suppose that is partly the reason; perhaps there may be a prejudice in the minds of the landlords against having their land turned from grass to arable land. I think that is the principal reason.

You think that the landlords are afraid that if the grass land were broken up it would be injured in value?—Yes.

In your opinion if there were proper covenants between landlord and tenant, would those dangers arise that the landlords apprehend?—No; they would be entirely removed, I think.

Do you think that if this poor grass land which is now so unproductive were broken up and put under a properly secured course of husbandry they would have a tendency to improve in value rather than to decrease in value?—I think they would, and they would employ more labour at the same time, which would be very desirable in that district.

Are there any other points connected with the subject which you wish to bring before the Committee?—With respect to buildings, there is a great difficulty in that respect; if the tenant erects any buildings for his own convenience I understand by the present law that he is not at liberty to take them away at the expiration of the tenancy; that is a most important matter. I think that if the tenant should choose to erect buildings he ought at least to have the privilege of taking them away at the expiration of his occupancy, provided the landlord would not take them at a valuation; that would be a great point gained.

You say the farm buildings in Leicestershire are frequently inadequate for the improved cultivation you propose; coupled with the breaking up of the land, there would be a greatly increased demand for room for stock?—Yes; it would require a considerable outlay in buildings to break up and drain and turn into arable land that which now is entirely in pasture.

Are there any other points which you wish to mention?—In regard to the present law, I would say that where there is not an agreement between the landlord and tenant, as is frequently the case in our neighbourhood, I believe that a six months' notice to the tenant is extremely inconvenient. If it were extended to the whole year I think it would be to the advantage very much

both of the landlord and of the tenant. I do not see where any inconvenience could arise to either of them from giving a twelvemonths' notice; giving notice at Michaelmas for Lady-day is too short a period to enable the tenant to make the best of what he has to dispose of, and it also gives him very little time to seek out another situation. I think also, on the other hand, that extending the notice to 12 months would give the landlord a better opportunity to look out for an eligible tenant to succeed the one who is going to quit the farm. If there could be any alteration in the law in that respect I think it would be a very good alteration.

Sir J. TROLLOPE.] Do you think a year's notice enough?—Yes, I think generally speaking it is, but for large farms it might be extended to two years, and be of advantage to both landlord and tenant, and of little or no disadvantage at all.

By the eastern part of Leicestershire you understand all that district of land which lies between the town of Leicester and the county of Rutland?—Yes, it lies in that direction.

In that direction has not a large portion of land been already broken up from pasture?—No.

Do you know the parishes of Pickwell and Leesthorpe?—Yes.

Do you know whether land has been broken up in those parishes?—Yes, no doubt, but there is a great deal of land in Pickwell that does not apply; it is a different nature of land.

Still it has been broken up?—Yes, a great deal of it has.

In the parish of Queniborough, in which you live, is not there a great deal of land broken up?—No, very little.

On your farm what is the proportion of grass land to arable land?—About two-fifths are arable land.

Has any of it been broken up since it has been in your occupation?—No, excepting about six acres.

Is not a considerable portion of East Leicestershire exceedingly hilly?—It is rather hilly.

Would it be advantageous to plough those steep hill sides?—There are only very few steep hills that it would be better not to break up.

The question refers to the neighbourhood of Tilton?—The land there might be broken up, except just the steep points.

Some of those hill sides have been broken up, have they not?—Yes; the Honourable Mr. Wilson has broken some up on the steepest hills in that neighbourhood.

Has not it been found in very wet seasons that a great deal of the soil washes to the bottom from those hills?—It must do so. I would not recommend those parts to be broken up.

A considerable portion of the parish adjoining that district of country is steep hill, is it not?—It is not so steep as might be imagined.

The lands there are of a cold nature, are they not?—Yes.

Many of them are unimproved and covered with ant hills, are they not?—Yes.

In your memory has not a great deal of this land been drained?—Some of it has.

Has it been drained on the Leicestershire plan of drainage?—Yes, it has been drained with turf.

Does not that answer the purpose on pasture land?—Yes, it does for a certain number of years.

According to the nature of the subsoil?—Yes.

Has not that greatly increased the quantity of sheep in Leicestershire?—Yes.

The herbage has improved, and the number of sheep kept has increased?—Yes.

Is not that as good a mode of employing the land as breaking it up to tillage?—I think not.

You mean the cold and steep hills?—Yes; but there is a vast deal of other land.

They are almost entirely depastured with sheep, are they not?—Yes, sheep and young cattle; but there is a very small portion of land that might not be broken up.

Has not the breaking up of grass land been going on in Leicestershire for a considerable number of years?—It has been going on, but very slowly; but it has gone on in some degree.

And where land has been broken up to any extent there must be more buildings?—Yes.

The farm buildings in Leicestershire are not very good, are they?—They are very bad indeed.

Did you ever value between incoming and outgoing tenants?—I have always declined doing so.

Are you a member of any farmers' club where this question has been discussed?—Yes, I am a member of the Leicestershire Club, and I am also a member of the Loughborough Club.

Have you ever discussed this question at either of those clubs?—Yes, this question has been considered.

Do you wish to legislate for the customs that exist, by the nature of the custom of the country there?—I do, where it is possible, and for more.

Are not the customs of the country very various?—Yes, the custom of the country is almost nothing.

Does any custom exist beyond paying for seed and labour?—There is nothing beyond that.

Is there anything paid for the use of oil-cake?—I have never known anything allowed for that, neither is there a vast quantity of it used.

And nothing is allowed for draining?—I never knew it.

Then there is no allowance beyond the simple seed and labour?—No, just for that, but for nothing else whatever.

Does not that arise from the land being chiefly occupied as pasture land?—There is a great deal of arable land, as well as pasture; probably there is about one-half arable, excluding the grazing district.

Has it got to that extent?—I think nearly so.

Then the breaking up of the pasture into arable land has gone on pretty quickly?—Not so much so in that district I speak of; there is a vast deal more land that might be broken up, which is of a better nature, and of a better quality.

Mr. HENLEY.] In your judgment, what would be the necessary outlay upon a farm, in the shape of farm-buildings, on a farm of 200 or 300 acres; that is, in the shape of barns, and so forth?—One-tenth.

Would one-tenth be a fair sample?—Yes, I think so; about one-tenth of the value of the land.

If an estate were worth £10,000, then it would be necessary to lay out £1,000 in buildings?—Yes, where entirely new buildings are required.

What is the amount now per acre expended upon land in those farms in that district; that is, upon those grass lands?—It is very trifling indeed; upon purely a grass farm I should think it would be about 4s. an acre, probably.

You mean 4s. an acre in labour?—Yes.

That is to say, upon 200 acres £40 a year would be the whole amount of labour expended?—Yes.

How many acres would be mown of that?—That would depend upon circumstances a great deal.

Upon the average?—It would depend upon what stock they kept; it would vary very much.

Sir J. TROLLOPE.] You are speaking of 4s. an acre being the yearly expense, everything included?—Yes, including the keeping up of the fences, and everything; there is very little labour required in keeping the land clean.

Mr. HENLEY.] Do you adhere to that answer, that

the expenditure upon a farm of 200 acres, in the shape of labour, would not be more than £40 a year?—Yes, I think so.

You believe it would not exceed that?—I do.

And you think that that would cover the getting the hay and repairing the fences, and everything?—I think it would.

And in your judgment what amount of land would it be requisite to break up to increase the labour eight times?—It would depend upon the quality of the soil.

Take a farm of 200 acres, what proportion would you break up to increase the labour eight times?—I do not know whether I could answer that question exactly without some consideration.

How much per week, per head, do you pay for labour?—About 10s. to 12s. a week I have paid lately.

Upon 200 acres of grass land, you would not keep two labourers?—Not upon the poor grass land; perhaps it would be about a labourer and a half.

Two labourers at 12s. a week would be £52 a year?—Yes, it would.

Do you think there are farms of 200 acres of grass land with only a labourer and a half upon them?—Yes, I think so.

How is the haymaking done?—That is a trifling expense; that is done by women, and so on.

But it is nevertheless some expense?—Of course it is.

Sir J. TROLLOPE.] They do not make hay very well in Leicestershire, do they?—No.

They stack it in the corners of the fields, do not they?—Yes, they do in some places; it is done with very little expense indeed.

Mr. HENLEY.] Are the farms generally held by lease, or at will?—At will mostly; there are very few farms leased there indeed.

Are there any difficulties in making a bargain, to have a year's notice instead of six months' notice, if they like it?—I do not know that; it is scarcely ever mentioned.

Why is it scarcely ever mentioned?—I suppose the tenants think that they should have no chance of getting it if they did.

Why should not they get it?—I do not think the landlords would let farms upon those conditions.

You say that the advantage to the landlord would be greater even than to the tenant to have that twelvemonths' notice?—No, I say it is much the same; it is an advantage to each.

Have you ever known it to have been asked and refused?—I do not know that it has ever been asked, being of no use, and perhaps it has not struck either one or the other; the present custom has been so long established that it is almost like a law.

The tenancy being yearly, if it is to the mutual advantage of both persons that there should be a notice of that length of time, why is the notice not given?—It is perfectly just that it should be.

You say it is quite as great an advantage to the landlord as to the tenant?—Yes, quite so; I see no reason why the present custom should not be altered.

Would it not also prevent anything wrong being done upon the farm by the outgoing tenant without the landlord knowing it?—Yes, just so; and then I would have the landlord secured that the tenant should not change his course of cropping for that extra half-year.

Of course the landlord would have a better chance?—Yes, supposing it were legalized; I would have the landlord secured against any change in the course of cropping which the tenant might do unless he was checked.

May he not do it better now if the landlord does not know he is going?—If the landlord does not know he is going.

Unless the tenant gives notice?—It more frequently happens that the landlord gives notice, not the tenant.

It may be either way?—Yes, it may be.

Is there any difficulty in introducing clauses into the agreements to secure a proper tenant-right?—Yes, a very great difficulty.

What is the difficulty?—The landlords would not agree to it.

But if the landlords were willing to agree to it, would there be any difficulty?—Then of course there would be no difficulty in drawing up the agreement if the landlord would sign it.

If the landlord were not willing to agree to it, should he, in your judgment, be compelled to agree to it?—I think, for the interests of the nation, it would be well if he were compelled.

For the interests of the nation, you say; if, then, the landlord ought to be compelled to do that, would you go further, and say, he ought to be compelled to let the land whether he liked it or not?—No.

If you think the covenants of the agreement should be settled by law, do you think the rent ought to be settled by law?—I do not say the covenants should be settled by law altogether; that would be a matter beyond my comprehension. I cannot say what should be done, but still the question is what the wisdom of Parliament may see right to do. It is not possible for me to say what Parliament may do if they take it into their consideration.

Perhaps the wisdom of Parliament may not be able to reach the subject, if you, who have considered the subject, cannot see your way to advise Parliament in the matter?—I do not know that.

What covenants should you recommend; because if the law is to be made it must be defined, and well understood?—I think for all draining that the tenant does he ought to receive compensation. The way it is done in our neighbourhood is, that the landlord finds the tiles, and he charges five per cent. interest upon the tiles in the land: then the tenant is at all the expense of putting in those tiles and the haulage, and the soles the tiles are placed upon; and that ought to be considered, and then compensation for the proper number of years should be given in case the tenant leaves previously to the expiration of that number of years; that is a matter that might be laid down.

What depth is the drainage done at?—About two feet six in the strong land.

And how many years, in your judgment, should that run over?—It depends whether it has been done well or not; of course, a great deal depends upon the manner in which it is done.

Supposing it to be well done, how many years should it run over then?—Twelve years at least.

Then if any person of equal competency to judge with yourself were to say five years were sufficient you think he would make a great error in saying so?—I think so.

What ought the land, in your judgment, to be fixed at?—I say 12 years for that description of drainage.

Would you extend that to any other description of improvements?—To the use of some kinds of food, for stock, and manure, and lime.

To what sort of food would you apply that?—To oil-cake.

How would you deal with oil-cake by law?—There should be a small compensation made for the year following the year when the tenant quitted.

What would you call a small compensation?—I should call a fourth of it at least proper.

You would give one-fourth of the cost to be paid by the incoming tenant?—Yes.

If any party thought that a half should be paid for,

would you throw that half upon the incoming tenant?—That is matter of opinion.

Then as to lime, what would you do?—Lime ought to cover a space of about six years.

Do you use any other manures?—No, we do not use much; we have mostly farmyard manure, and sometimes a little of some other manure, such as guano.

You do not chalk or marl your land?—No; very little is done in that way. I think those are fundamental points that ought to be taken into consideration.

Do you think that the principle ought to be the capital expended by the outgoing tenant, or the advantage to the incoming tenant?—I do not mean to say that the tenant may not lay out what he considers proper, but if he lays out more than ought to be expended, that should not all be fixed upon the landlord to pay, nor should the landlord be called upon to pay without an agreement between himself and the tenant as to what those improvements shall be, and in what manner they shall be made; but I say, that if they both agree to certain improvements, and then that the tenant quits sooner than those improvements are exhausted, of course he should come upon the land for compensation; that his right would lie against the landlord.

In your judgment would it be better that that should be settled by law than that the landlord and tenant should agree what improvements should be done, and what period those improvements should run over?—I do not mean to say that it should be settled by law; it cannot be settled by law. If they would be willing to settle those things between each other as matters of agreement, it would be well, but I cannot see that that would be likely to be done.

You think it is because they are not likely to agree that you would settle it by law?—Yes; it would insure a better state of cultivation.

Would you extend that beyond compensation for oil-cake and drainage?—I do not know that there are other points, except timber, for buildings. Those are the chief points that strike me as being wanted in our district; of course there might be other districts that other things might be applicable to.

Have you turned your attention to the way in which the remedy should be secured to the tenant against the landlord?—It might be secured to him by law as well as other matters are.

Should the compensation be paid by the landlord or by the incoming tenant?—The landlord, because there might be no tenant; the landlord might have the land in his own hands. I would have it as a lien against the land.

If it lies against the land it is a different thing from being against the landlord?—I say it should lie against the land.

You have stated that, in your opinion, great improvements would be made in the produce of food by breaking up certain districts of land which you have spoken of?—Yes; there would be a certain increased produce of food, for animal food and for the food of man, by the land being broken up that is now in grass.

Do you think that that ought to be by law, or not?—It has been made a matter of law in former times.

Should it be made a matter of law now, or should it be left as it is to parties to settle for themselves?—I think it might be left to parties to settle for themselves. It would be a great national advantage, if it could be done, to have a greater quantity of land brought into arable cultivation, because there would be a greater quantity of food and a greater quantity of labour employed too.

That sort of land, if it were not very carefully cultivated, might have great benefit taken from it for eight or ten years, might it not, and then it might be let fall back

in an indifferent state of cultivation altogether?—It would require good cultivation.

And proper management?—Yes; all those things ought to be secured to the landlord.

May it not be their knowledge of that which may have rendered landlords indisposed to have their land broken up?—Yes, no doubt; but the tenants now are getting a much better insight into the cultivation of land than they have had formerly, and the land is now better managed.

In the improved state of agriculture, has the great and generally increasing value of land itself had a tendency to induce the landowners to permit those poor pasture lands to be broken up?—I should suppose that would be the case.

Is not it safer and better to trust to the mutual interests of parties in that respect than to determine it by law?—I think it might be so. In regard to breaking up the land, I cannot see how the law can touch it, though it has been so.

In your judgment, it would not be well to attempt to do it now?—Not in the present state of society, if you can induce them to enter into it by agreement.

It being better to leave that probably great increase of the food of the country to be settled by private agreement, why would it not be better to let the other improvements be settled in the same way?—The only reason I see in it is, in consequence of the great difficulty there is in legislating upon it.

It is as easy to make a law to say that so many acres of grass land should be broken up, as to say that so much money shall be paid for so much drainage, is not it?—Yes; but it would be so far an arbitrary law.

Why?—Because in the case of drainage, I am supposing that what is laid out by the tenant is done to improve the land; and if he is obliged to quit his land sooner than those improvements are exhausted, then I say he ought to receive remuneration for it; that is a different thing to breaking up the grass land.

The tenant is not compelled to lay out the money unless he likes?—No, but he is a great simpleton if he does not do so if he is secured; and then if he does not lay out his money well in those matters he does not know what is to his own advantage.

Can he not secure himself by making an agreement?—If his landlord will not make the agreement he cannot.

And you would compel the landlord to make that agreement?—I do not know how far you would be able to do that.

Is there not as much compulsion in the one case as in the other?—It does not go to that extent.

You were understood to say that you think notice ought in all cases to be given in the event of improvements to be paid for?—Yes, I think it would be so that that notice should be given, and that a mutual understanding should be come to. I do not see how you can pass a law to make the landlord pay for any sort of improvements that the tenant might take it into his head to do; that, I think, would be unjust to the landlord.

You say, yourself, that you would have it made matter of agreement what should be done?—Yes.

And why cannot that be done without a law?—Because attention is not drawn to it so much as it would be in case it was taken up by the Legislature; then agreements of that kind, I think, would be sooner entered into.

Even supposing a law to be made, would a man be induced to turn his attention to anything so much as by his own interest?—No, I suppose not.

And it is to the interest of the landlords that they should have their land well tenanted and well cultivated, is it not?—Yes.

Has not the cultivation very much improved in the last 20 years?—Not to that extent that it might have been.

Perhaps you consider that there has been an advance of capital, both between the landlord and the tenant, and that they have laid out as much money as they have got?—I think capitalists have provided money now for the land.

How?—I thought there was a law for them to have money for draining.

The law gave a certain amount; but that money was taken up before three months were over; are you aware of that?—I was not aware of that.

If the million of money which was provided in the way you refer to was taken up so quickly, as was the case by the Irish landlords, so that the English landlords could hardly get any of it, does not that show that the reason why improvements have not gone on faster has been that it has arisen from the want of money?—Yes; and it would be an advantage to the landlord to take up money on his estate for drainage; he would soon be repaid for it.

Perhaps he cannot borrow it?—I do not know how that may be.

What interest, in your judgment, would a tenant be willing to pay the landlord for money expended in drainage?—Five per cent.

If the landlord could only borrow his money at five per cent. and the tenant paid only five per cent. there would not be much inducement, would there, for the landlord to borrow the money under those circumstances?—It would improve his land, and in course of time, no doubt, his land would be more valuable in case he wanted to sell it; after a few years it would make him much more money, from being well drained and well cultivated.

Drainage, like other things, after a certain number of years wears out, does it not, and then wants doing afresh; and therefore, if the landlord had no more than the five per cent. interest paid to him, which five per cent. interest he had paid upon the money borrowed, would he not be a loser?—I say it would improve his estate and make it worth much more.

Then the tenant ought to be able to pay more rent?—The landlord would find that out.

Then do you think that the tenant would consent to pay more than five per cent?—No, I think not at first. When the land was got into a better state of cultivation, as regards cultivation then the tenant might be able to pay more rent in some cases.

Assuming, on the average, that the drainage had stood 22 years, would not that be a long period?—No, it would be a very short one, I think. If drainage was done as on my land, then it would stand as mine will; that which I have done will stand 200 years, with very slight repairs.

Then it is of a permanent character?—To be sure it is; it is done in that way that makes it of a permanent character.

Do you think it the general opinion that drainage will last that time without repair?—No; generally it is not done with a view to last that time; it is very imperfectly done frequently.

Take pipe draining, do you think that the general opinion of agriculturists has been that it would last for ever without any improvement?—No, it would not do that at all. I merely speak of the way in which I have done mine. I know very well the system upon which I drain is a good one, and draining done in the same way as mine is would last for many years; mine will last for 200 years, with but very slight repairs.

Is it not possible that there may be persons very conversant with agricultural improvements that would

not hold with the mode of drainage that you have described as being the best?—Very likely. I do not doubt that there is a variety of opinion upon that as upon other things.

That would make some difficulty, would it not, in legislating upon such a matter?—There would be difficulty certainly, as I have admitted; I see all the difficulties. I do not pretend to point out the way in which those difficulties can be overcome, but I point to those as some of the fundamental points.

Supposing the landlord is as strongly in favour of pipes as you are of tiles with the soles, should he then be made to pay for such tile draining for 200 years?—He pays upon the principle he drains; he would not take my view of the case; he would take his own and his tenant's.

Your mode of drainage, with tiles laid upon flat soles, is more expensive than pipes, is it not?—Yes, for that reason I say that it will continue so much longer.

But it does not follow as a necessary consequence that because a thing is more expensive it will last longer?—Not at all; it is the manner in which it is done, and the material which it is done with, which makes it valuable or otherwise.

The landlord preferring to have his drains done with pipes at a less expense, would it be fair that he should be called upon to pay for a mode of drainage which in his opinion is less beneficial and more expensive?—He would not be called upon to do so.

Why?—He would have his draining done more superficially and at less expense, and the drainage would not be so permanent.

Then, according to your notion, the landlord ought to have the privilege of over-riding the law after the law was made?—You cannot pass a law making imperative any particular mode of drainage, or that it should be of a certain depth, or that it should be with tiles or pipes.

But should the landlord and the tenant have the power to over-ride the law if they choose, by agreement?—I cannot see how you can prevent landlords and tenants breaking the law, if they choose to do so by agreement.

Suppose a landlord to say, "I shall not have this land drained," and the landlord and the tenant to enter into an agreement to defeat the law, ought that to be done?—I do not see how it can be avoided.

What then is the use of making the law?—It would be of no use in that case.

You have told the Committee that those agreements are not entered into, because the landlord will not agree to them?—Just so.

If you are well founded in that respect, what is to prevent them setting the law aside the moment it is made?—If you can have a law obviating that, so much the better.

Can you point out to the Committee any way in which it can be prevented being set aside?—There is a difficulty, I allow, and I do not exactly know how to overcome it; but still it is highly necessary that a system should be laid out in regard to improving the soil of the country, and that cannot be done better than by drainage: if it can be done by legislative enactment, well; but if it is impossible, it cannot be done.

In your judgment then, you do not think that any law could be made or ought to be made to prevent men making private agreements?—I do not see how you are to prevent them.

Mr. COLVILLE.] As to the custom of the country in Leicestershire, the outgoing tenant is not paid for the manure?—Certainly not, it is the property of the landlord.

Do you think that a good custom?—I do not like the manure to go off the land.

Is it a good custom that the outgoing tenant should not be paid for the manure?—What is made upon the land?

No; with artificial food in it?—I think he ought to be paid for that.

You have said that you think that the tenant ought to be allowed to remove buildings?—Yes.

What sort of buildings?—Any he chooses to erect, that would not be detrimental to the property.

Suppose a man to erect a brick and mortar building, could there be any remuneration to him in pulling it down, and taking the bricks away?—Probably he would not choose to erect that; it would be at his own option if he did; or if he would, he would do it in a very slight manner probably. Tenants would erect buildings very useful, more than they do now, if they had the power of taking them away, or if the landlord would take them at a valuation.

Sir J. TROLLOPE.] Are you doing this very durable drainage without any prospect of compensation?—Yes; but I have not had to pay for the tiles. I have great confidence in my landlord. I am occupying a farm now that my great-grand father occupied 120 or 130 years ago.

And has it gone on in succession in your family?—Yes, it has, time out of mind. Sometimes it has been under lease, and sometimes not. In fact, it is not precisely the same land, because the land has been inclosed, but it is the same property.

Do you know what the tile drainage costs per rod or per acre?—£2 to 50s. per acre. The drains 33 feet apart.

Mr. COLVILLE.] The turf draining there is generally done with a tile put at the mouth, is it not?—Yes. My farm was drained 50 years since, and now the drains have become bad, and most of them are doing over again with tiles.

Sir J. TROLLOPE.] You would not put that drainage you have spoken of in land you are going to break up?—No; only in the pasture land.

Is not the average durability of draining 20 to 25 years?—Yes, turf draining. My soil is clay, a great deal of it, and there are fissures, and at those places I have put in tiles wherever there is a running sand, which makes it more durable.

Wherever there is a solid subsoil, that turf draining will stand for some time?—Yes; it will last for many years if it is well done.

Evidence of Mr. BENJAMIN HATCH.

CHAIRMAN.] Where do you live?—At Tenterden, in the Weald of Kent.

What is your profession?—I am a farmer and land valuer, and general agent.

What is the extent of your occupation?—About 115 acres.

Are you in the habit of valuing between outgoing and incoming tenants?—Yes, a great deal.

What is the time of entry in your part of the country?—Generally speaking, it is either the 11th of October or the 29th of September, but always at the Michaelmas period; old Michaelmas or new Michaelmas.

What are the payments generally made by the incoming tenants?—The outgoing tenant is paid for all tillages of every description. He is paid for hay and straw at a fixed price, which is different from a sale price, and he is paid for the underwood. It is a woody country where I reside, and he is paid for all drainage;

of every description, that is performed with tiles or wood; if wood, he is paid four years; that is, he is allowed a certain portion for four years, if it is laid permanently; with tiles we allow him to go back 10 years; that is, we deduct a certain amount each year. Supposing he left at the end of the ninth year, he would have 2s. to receive, if the first cost was 20s.

That is the custom of the country?—That is the custom of the country.

Is there any other improvement that is paid for in your part of Kent?—Manures; all bought manures; we pay also for half manures; that is, the half part of what the dung would be valued at had it been valued the year before.

Does that apply to artificial manures?—Yes, that applies to artificial manures, but not in the same ratio. They are recognized as being used to be paid for according to their durability. In our judgment, for instance, guano would be paid one-third of the cost price after one crop off; for bones or lime he would be allowed half the sum; and for dung carting, marl, or mould, there is nothing at all after one crop.

Are you acquainted with the chalk districts of Kent?—Yes.

Do you use chalk for improving the soil?—Not much in the Weald; the only place where they use chalk to any extent is the Isle of Sheppy, and it is not used as a manure much in Kent, unless in that particular place; it is used more in the shape of lime, after it is burnt.

Where it is used as chalk what quantity is put on an acre?—I cannot speak to that with any degree of certainty, I should think somewhere about 20 to 25 wagon loads an acre.

Do you know of any allowance being made for that?—Where chalk is used it is a very permanent job, and the outgoing tenant is paid considerably for it, but I do not know the amount.

You say lime is used?—Yes; lime is used to a great extent about us, particularly in Sussex. I value a great deal in Sussex; it is brought there as many as 35 miles to be put on the land.

Over how many years does it run?—It is paid half the cost; carriage so much per mile; and half the labour after one crop off.

Do you make any allowance for naked fallows there?—We pay everything, all the labour and everything.

Does it extend over more than one year?—No.

Suppose a naked fallow taken and a crop after it, you do not allow half the naked fallow?—No.

There is no allowance for the improvement of buildings?—No; this is the only thing that we wish for, we think it would place us in a better position; mine is a hop district; an oast is a thing which is required where there are hops, and I think if the tenant were allowed to build his oast, and take it away if the landlord would not pay for it, it would be doing a good thing.

Is there any difficulty in making those valuations for the improvements?—No; we find where those customs prevail, the farmers are improving fast in the farming, because they have security for the outlay of their capital. We do not find that it interferes at all with the landlord, because a tenant would rather take a farm with those improvements than have to make them himself.

Why would a tenant rather take a farm with those improvements than have to make them himself?—Because where drainage is done, it is a very considerable cost; and it is perfectly well known, that after land is well drained a while it is permanently improved, therefore he would be in a better position to take it after four, or five, or six crops had been taken, than to outlay

the capital himself; he never scruples at paying for those improvements.

And being able to take land in good heart, he would rather do so and pay for it, than take land out of heart and have to bring in into heart himself?—Yes; about me in that part of the county of Sussex, there are the heaviest valuations of anywhere in England that I know of; that is, a man has to pay more money to enter his farm than in any part of England; and in proportion as he pays that, although it is heavy at first, it gets more easy afterwards.

Mr. HENLEY.] Then a smaller farm comparatively takes a larger capital to enter upon it?—Certainly, if there are hops.

As to hops, you stated that they cut the woods to the stubbs; you do not speak of woods to any extent, do you?—Yes; there are woods of 90 acres, and some times of 100 acres.

Does the tenant pay a yearly annual value for that?—No; but sometimes it comes to £5, or it may come to £50 an acre.

Whom does the money go to?—The outgoing tenant.

What income has the landlord from that wood; does the landlord receive so much per year?—The farm is let together; perhaps it is a farm of 200 or 300 acres altogether, and he takes the whole farm at so much money.

Not by the acre?—No, we know of no acreage.

Then if he takes a farm at 30s. an acre, if it be 200 acres, he will pay £300 for it?—Yes, there is no distinct rent paid upon the wood land.

Then the outgoing tenant receives for the number of years cut as to that wood?—Yes, according to the value.

The great value of the woods in Kent is for conversion into hop poles, is not it?—Yes.

And if near cutting, he has a larger sum to pay for the wood?—Yes.

Does that extensive tenant-right cripple the operations of the farm?—No, we find it induces men to farm much better; and if we could only have one thing, then we should be satisfied with the tenant-right we possess, and that is, if we could have in the Weald of Kent, which is proverbial for its woodiness and small inclosures, the country a little more clear; there is a large extent of country where the fields are so very small that the sun in some cases never shines across them. I will give you an instance or two.

Is it a condition of taking those farms that you shall retain the hedges as they exist and the woods as they are?—Yes, that is too much the case.

Are you tied down to maintain those hedges, whether useful or not?—The custom of the country inviolable is to tie them down, although I know many cases where that custom is broken through.

The landowners do occasionally let their tenants square their fields, and take away useless hedge rows?—Yes, occasionally that is done, but by their leases they preserve the timber and the timber rows, which are particularly mentioned, that they shall not grub anything close to the hedges.

What instances were you about to state with reference to the enclosures?—I spoke of the parish of High Halding, in Kent; there is one farm of 50 acres, which is divided into 26 pieces; there is another farm of 37 acres, divided into 20 enclosures; there is another farm of 54 acres, which is divided into 24 enclosures; there is another farm of 23 acres, divided into 16 fields; there is another farm of 155 acres, where there are 42 fields; some of those cases are cases of small freeholders, men using their own land. Then there is another farm of 142 acres, belonging to a noble Earl, which is divided

into 48 pieces. Taking the total of the parish there are 3,753 acres, and out of those there are 1,620 acres of waste or uncultivated, viz. hedges, underwood, ponds, &c.

Do you think hedges are waste?—The hedgerows are wide, and there are very wide lanes where the fences are not set out straight; they leave immense widths. Taking the whole parish as containing 3,753 acres, it is divided into 1,303 enclosures, and that gives an average of 2½ acres and 20 rods for the size of each field.

CHAIRMAN.] Do those hedges pay for being grubbed?—Yes; they would about pay the workmanship for performing the work; but the object of getting the field grubbed would be this, that there is a great disposition, and indeed a perfect rage for drainage. If they could get those fields into something like ten acres, they could run their drains through them, and cause a great increase of corn, by thorough drainage, and get more land into cultivation.

It varies in various districts; it pays in some cases to grub the hedges; but in no case in your neighbourhood would the tenant be entitled to grub the hedges?—No; but the subsoil is stiff clay; good wheat and bean land.

Sir J. TROLLOPE.] Where the woods are in large masses, are they not considered to be more valuable than the adjoining land, on account of the high value of hop poles?—Yes; underwood land, properly managed and planted, is the most profitable land that a man can hold as owner. I have known that wood sold at from £50 to £60 an acre; the average price might be called £20.

Are many of those hedges cultivated by the owners or occupiers, to get hop holes out of them?—No; I think not at all. I think it is more from a disposition to follow their neighbours; their neighbours do not grub the hedges, and they do not do it. If they see anybody else do it, they say, "I wish I could do it;" but then the lease or agreement steps in; but no doubt if they had more energy they could get all those things righted.

Mr. COLVILLE.] Are those high hedges?—It is a level country; when you get upon the top of those hills and look down it is like looking upon a forest.

Sir J. TROLLOPE.] Those small corn fields will be totally shaded from the sun?—Yes.

Are not many of the hedges as large as this room?—Yes, and there is much loss of time in ploughing; the horses lose half a day's work in turning round; they cannot do a good day's work.

Mr. HENLEY.] In the drainage you have spoken of as running over ten years, is any notice given or required as between the landlord and tenant at the time the work is performing?—No; we do not consider there is any necessity for it, because the whole of the work is done by the tenant; the landlord in some cases finds the tiles. We generally find it the best plan to have the drains done in a perfect manner; every man does not understand that; where we find the tiles we take care that the work is sufficiently and properly performed, then ten years would be the portion we should allow for the labour.

Is not it as material for the incoming tenant or the landlord to know that the work is well done where the tenant finds the whole materials as where he finds only part of them?—No question, with this difference, that there is a greater guarantee for the work being properly performed, because I apprehend that a man would not begin as a tenant to drain his land thoroughly unless he has a good prospect of stopping. For his own interest he would do it well; he would not do it to make a market of it when he left.

Is that never the case?—I think that would be so palpably seen that men of experience would soon check it.

Are any means taken in the Kentish valuation to ascertain the consumption of the oilcake by the farmer?—No; there is nothing allowed for it only in the shape of the extra price of the manure so made, and, as a matter of course, manure made from the straw is put at a different price from the fattening-cake dung.

What evidence do the valuers require in respect to the fattening-cake dung?—Simply practice; they view it and know what it is; they know one article from another by looking at it; they can judge of the goodness.

Can they judge by looking at it, the quantity of cake that may have been used?—Certainly not; they can judge whether the dung is good or not; they can tell pretty nearly what it contains as to quality.

Do you look at all at the quantity they purchase; do you require any evidence of that, such as the bills being produced?—If we doubt it we should call for evidence when we came to value artificial manure; it is the custom of the country for parties having a farm to produce the invoice.

If they produce the invoice do you go into further evidence to see that the thing purchased has been expended upon the land?—Yes, if I have a doubt about it, I call the servants, or agents, or anybody about the place.

How long have you been acquainted with the weald of Kent?—Twenty years.

Was there any difference of the custom when you first became acquainted with it from the present custom?—I do not think there was much difference in the custom, it has continued as long as my memory; but it is in consequence of that custom, that from being one of the worst farm districts anywhere I know, it is now getting to be one of the best; and I attribute it to this, that other people do not enjoy the same benefits that the men who are making those improvements do.

You say the custom existed 20 years ago?—Yes.

Was the district then badly farmed?—Yes.

How long have the customs existed?—I cannot tell that at all; but even only 20 years back the crops were notoriously bad about that district; and the place was so isolated altogether, that those men, though they possessed the privilege, did not exercise it, of doing those things. In fact, they had not begun to know what good farming was.

Then as it could not be the custom that made them good farmers, as you say they were bad farmers 20 years ago, what is it that has effected the change?—I presume increased intelligence, and having the opportunity of farming better.

You say that the customs equally existed 20 years ago, and yet they farmed badly?—No doubt they would farm badly now, if they were not allowed those things upon the expiration of the tenancy.

But they were allowed them then; why did not they farm as well then as now?—From the want of intelligence.

Then it is increased intelligence that has made them farm better?—A combination of both.

Have you heard how long the custom of paying for drainage has existed in that part of Kent?—I cannot answer that question. I do not know how long it has existed; but till within a few years it has never been acted upon much; that is, I mean the drainage has not been done to any extent at all till now; that it has been the exception, and not the rule, to be drained at all; some few, a good many years back, used to do it.

A custom cannot become binding unless it has had an existence 20 years at least?—That might have been the case, no doubt; but where that has been acted upon, it is an exception. There was not much drainage 20 years ago, though the custom would have paid it.

You call it the custom, though you say there was no

drainage done?—I do not say there was no drainage done; no doubt these customs were introduced to prepare the men to farm better.

In your judgment, was that custom of paying for drainage introduced 40 years ago, to induce people to farm as they do now?—No, as a measure of common justice that every man ought to have held out to him; that has been recognized ever since I knew anything of it.

All those customs you have named, as far as your information goes, have been practised as long as you can recollect?—Yes.

What has been done about guano?—One-third is allowed for that. Of course that must be a new custom, because it was not in existence. We soon found out by practice and experience how long we thought this manure would last, and we thought proper to place it in a different catalogue from other manures that were of a permanent character. We recognized the right of paying half manures, but the details must be according to circumstances at all times.

According to the average, what is about the income per acre in a farm in the weald of Kent?—That will depend upon whether it is hops or not.

Take a farm where there are hops grown?—From £3 to £7 an acre.

Does it vary so much as that?—Yes, from two circumstances; one from the district, and the other whether the farm is in a high or low state of cultivation. Some of our best lands are the cheapest to get into. Some of the finest pasture land in the county is in Romney Marsh.

There, of course, the acts of husbandry do not run so high?—No.

£7 an acre, you think, is the outside of the income upon that?—Yes. I am looking at a farm where there is a considerable portion of hops, and a considerable portion of underwood. I was speaking as to those things that the incoming tenants would expect to pay to the outgoing tenants; not as to the capital necessary to carry on their farms.

What is the valuation, excluding wood and hops?—It varies from 30s. to 45s. an acre.

Not exceeding that?—No, unless you speak of the fallow; there would be not more than one-fifth of the land fallow, and that would be £5 an acre.

Supposing a farm drained within five years?—The outlay would be very large there.

Speaking of cases where there has been a great deal of drainage, how would it be?—That would be in proportion; of course, some shillings an acre more.

What does drainage cost in your district?—That depends upon circumstances; it varies very much indeed. There is no regular criterion for it; it will cost 1s. a rod if it is 3 feet or 3 feet 3 inches deep.

That includes labour and tiles?—Yes; pipes we use to a great extent.

Then if the drains were put a rod asunder it would be a cost of £8 an acre?—Yes.

CHAIRMAN.] Are they usually put so near as that?—No, that is a great quantity.

What is the average distance between the drains?—The deeper the drains are, the wider we can get them apart; if we drained $2\frac{1}{2}$ feet we should go a rod, we should go 22 feet, from that to 30; if deeper it would depend upon how porous the ground was.

Sir J. TROLLOPE.] You seem to have an extensive tenant-right upon everything but buildings. If you had payment for buildings, or the right of removing them, you would have very little to complain of?—Just so.

Is there anything else you would require?—I am aware it could not be compulsory; but it is a fine country, and

if anything could be done to lay it open instead of having those miserable fields I am speaking of, it would be a great advantage.

You do not see your way to compulsory enactment?—No.

Mr. HENLEY.] Have you considered at all as to the nature of the remedy you would give, or how you would carry it out; for instance, how you would make tenant-right recoverable?—My advice would be, do not leave till you get the money. We never have any difficulty about that.

You find that in practice you have no difficulty about it?—No.

But have you considered at all; because where custom regulates those things no difficulty may occur, but where a law is to be made it is different, and those matters must be well weighed. Can you tell the Committee what, in your judgment, would be the remedy that should be provided?—I would make it a rent-charge upon the land, the same as the tithe commutation.

That it should be payable by the incoming tenant?—Yes; that it should be payable by the incoming tenant; if he refused to pay I should go to the land for it, as the titheowner does.

Supposing the land is not occupied?—It must be occupied or else the circumstances would not arise; it must be cultivated or the charge could not be there.

That is with the outgoing tenant; supposing no tenant comes in, how would you deal with that case?—It would be a very extreme case to suppose there was no tangible property that you could get at, of any description; and if it be unoccupied, by making it a rent-charge upon the land it would be a charge upon the land generally, if in cultivation.

The Act gives the power to the titheowner to enter and cultivate?—Yes.

And to give an account; do you think that would be desirable?—I have not thought enough of it to give an opinion upon it.

Of course this is a matter, if there is to be legislation, that must be settled; do you think the right ought to be against the tenant or the landlord?—Against the land, in my opinion.

Can you suggest any mode by which it should be recovered from the land?—No; I have not turned my attention to that subject at all, but I should not apprehend any difficulty about the matter; because this charge forming part and parcel of the valuation itself, I do not see any greater difficulty in the tenant's paying a percentage upon the improvement, than in his paying upon the other part of his valuation. The tenant will never know; he does not get the detail of the works; he is charged the sum total, and he does not care how much he pays for this, or how much he pays for that; it would be a general valuation, a tenant's valuation.

In the part of England you live in, the valuations are large, and parties taking lands are accustomed to them, and no difficulty occurs?—No.

In other parts, in fact, where the valuations to the incoming tenant are extremely small, if there is legislation upon it, you must make a proper legislative provision, the man laying out his capital upon the faith of getting it back again?—Yes.

Because there is no custom to help him?—I would wish to make it secure to the tenant.

In your judgment should the landlord have any notice of those improvements; because in Kent it appears that they have none, according to your statement?—I should say that in all improvements of an extensive nature the landlord ought to have the privilege of overlooking it; or at all events, if he had not the privilege of saying it should not be done, he should have the privilege of

knowing it was done in the best manner as to economy, and as to the work being properly done.

Do you think that he should have the privilege of refusing to have those things done?—If you were to say that, you would be making a law with one hand and upsetting it with the other.

How should the law act upon agreements, if such a law were made?—That is a difficult question for me to answer. If there were an extensive tenant-right bill, no doubt something must be done; because with long leases with clauses hostile to the spirit of the law they could not work together, and they must be set aside by some means or other.

If any law were made, should it override or not any existing agreements?—I think it would be a very hard case upon a tenant having a long lease not to be allowed to participate in the benefits of any new law which was passed.

Supposing a tenant holding under a long lease at a low rent, with the stipulation that he should improve the farm, would it be just to make the landlord pay at the end of the term for that?—No.

How is that to be managed by law?—I do not see that such a thing could ever be contemplated; because where a tenant has had a long lease, he would have had the benefit of the crops, consequently he would leave the land better cultivated, and he himself would be better off by having reaped the benefit of what he had done to the land.

In the cases of long leases, do you think the law ought or ought not to override the agreement?—That would be a difficult question to answer; but I should say that if it was, as many of our agreements are in the Weald of Kent, that you should not do that or the other, if those covenants were decidedly hostile to the spirit and intention of the law now passed, it would be hard to deprive him of the benefit of the law, and in that case it should override that agreement; but it is a difficult question, and I have not turned my attention to it, therefore I should wish to answer the question generally.

You have not given that attention to the subject which would enable you to give a confident opinion upon it?—No.

Are you able to give an opinion as to what ought to be done in case of future agreements?—I should be very happy to suggest to the Committee, that in agreements between landlords and tenants they should always have those clauses inserted which would keep one object steadily in view, namely, the permanent benefit of the land. I would at all times have a man's lease drawn so that he should be looked particularly close after upon his quitting, for two or three years before his quitting; there would then be no necessity to guard against his farming well at the beginning of his lease, and badly towards the close of it; he would then farm all through for his own benefit.

The point to which your attention was directed was this, whether in your judgment if a law were to be made giving tenant-right, that law should give permission to landlords and tenants to exempt themselves from that law by private agreement?—No; I would not make a law with one hand, and upset it with the other.

Would you make any compulsion upon landlords to let their land?—No; I would never interfere with the just rights of property.

Then is making a man let his land under certain circumstances no interference with his property?—I would not have any law to make a man let his land in any particular way; he should let it as he pleased, but I would permit the tenant to be paid for judicious improvements; I want to afford the benefit he ought to derive for unexhausted capital.

Then the landlord must either let his land upon the terms and arrangements which would be fixed, or not let it at all?—Whatever the agreement might be he must be subject to the law, so far as permanent improvements of the land went.

That would be the operation of such a state of things, that he must either not let his land at all, or let it under those conditions?—Certainly.

Do you think it is likely that, under such a state of things as that, there might be any indisposition to let land?—I should think not the slightest. I think in all those cases it would soon be seen that what was for the benefit of the tenant would be so for the landlord; they must go hand in hand together; there is every disposition upon the part of the landowners to let land, and to meet the wishes of the tenants; but I hold land of that kind where, if they would, they could not allow me to do anything. I am speaking now of buildings. I should be permitted, no doubt; but they cannot give me leave to erect an oast, for instance. I have no oast to dry my hops; I have said, if I were to build an oast, would you allow me to carry it away; and they have said, No, we cannot give you leave to go contrary to the law; that property is in trust.

Sir J. TROLLOPE.] What is the cost of an oast?—One would cost £100.

Including everything?—Yes.

It requires two buildings?—Yes.

With drying room and kilns it would cost nearly £200?—Yes; but generally speaking, it is close to another building.

Are not the hop oasts furnished generally by the landlord?—Generally there is an oast, but it is not so general as a barn. The landlord may say, I do not like hops; I know you rob the other land for them.

Mr. HENLEY.] Is there any difficulty, in your judgment, for the landlord having the fee-simple of the land, and the tenant, if both parties are willing, to secure to the tenant what he ought to have, by agreement?—I think there is a difficulty in all those instances such as I have mentioned; for instance, where an estate is in Chancery.

The question is as to the fee-simple without incumbrance, where the landlord has the full power over the estate?—Circumstances very often arise where that cannot be done, for this reason, because gentlemen do not see their own interest in the matter.

That is because they do not choose to do it?—I think there is every disposition where they know; but there are many gentlemen whom we cannot expect to be farmers; they do not know what is best for the estate.

The question points to this: is there any difficulty, if the landlord is willing to grant proper clauses, and the tenant is willing to take those clauses, is there any difficulty in the tenant's being properly secured for the outlay of his capital?—There can be no difficulty, if both parties are agreeable; but in every case they are not agreeable, and it is because they are not agreeable that the tenant farmer comes and asks for a bill.

If both parties were agreeable to an agreement, there would be no advantage in being secured by law, over being secured by private agreement?—I do not see any particular advantage in one way over the other, provided the end is obtained; but I do not see how the end is to be obtained without an enactment.

You think that parties would not be mutually agreeable?—No, I think not.

It is, in your judgment, that the landlords do not see their own interests to induce them to grant those advantages so generally as they ought to do?—I do not think it is sufficiently prominently brought before landlord or tenant; I think they have got a good deal

to learn, both of them, and the sooner they understand it the better for themselves and the country too.

In Kent, then, you understand it?—Yes, to speak generally.

To the whole extent, except buildings?—It is only in the immediate districts of Kent and Sussex where I am that I speak of; it is not a custom riding over the whole district.

You have seen your interest there sufficiently to establish everything you require but buildings?—Yes.

But you have not seen your interest there to get rid of your enclosures?—No.

But in other parts of England where they have had the good sense to get rid of the enclosures, they have not got all those other things; perhaps there may be some reason there that you may not be aware of?—There is one reason for our not having got rid of the enclosures, which is the clause in the agreement which says that you shall not touch timber nor hedge rows.

The landlords and tenants in Kent, seeing their own interest sufficiently to introduce the tenant-right you have spoken of, have not been wide awake enough to get rid of those monstrous hedges?—I fear they have not given attention to it sufficiently, and it cannot be brought too prominently before them.

Would you bind them to it by law?—No; it is an interference with the rights of property.

Why more so in this case than in the other cases you have spoken of?—The circumstances are different, unless you would pass a law to compel the landlord to remove his timber, which would be an interference with the rights of property. All we ask for is only that where money has been outlaid for the benefit of the tenant, and he does not receive a just remuneration for it, the law should so far protect him that he should be paid, seeing that it is not any injury to the party paying it, but a benefit to him. Many gentlemen would not like to have their timber cut down. I see a great difference between the two cases.

Did not you say the landlord should let the land subject to certain payments, and have no voice in the outlay of that money, to prevent the money being outlaid?—If I have stated so I stated what I did not intend to state.

That is the result of your evidence?—I stated this: that where a tenant made the whole outlay himself, and found his own tiles (that was in regard to drainage), I did not see any necessity to appeal to the landlord in such a case; I said, where the landlord found the materials, or where he was compelled to pay for an article that cost money, he should of course be consulted to see that what was done was done properly.

Taking it as you put it now, the tenant laying out the whole of the expense against the landlord's consent, you would make a law that the landlord should pay it at the end of the term?—I should apprehend the landlord would never be against draining.

Taking a case, supposing him to be against it; the case is put as an extreme case, and that is the only way those things can be judged of; you are asked to draw the distinction between that and making a law that a man shall cut his hedges down?—I think the distinction is this, that one is an outlay of capital for which the man should be paid; but to compel a man to cut his hedges down is a complete interference with the rights of property. A tenant taking an inclosed farm would not perhaps give so much for it as if it was an open farm.

As to buildings, you would not say that the tenant should positively be paid for a building which he had put up?—No; he should have the option of taking it away.

What distinction should you draw between the outlaying of money in draining, and the outlaying of money in building. You say you would not go the length of making the landlord pay for the buildings?—No, not necessarily; it is very possible that he might have erected some buildings, an oast for instance, which might not be required afterwards.

The distinction you have spoken of is to be drawn according to the benefit?—According to the permanency of it; the one is a case, as for instance a barn, that might be required at all times; and the other is a case that might not be so.

Take the case of a barn with a hop oast, what distinction would you draw between the two; would not both be equally good to the incoming tenant?—I would merely give the alternative of taking the buildings away.

You would not make the landlord pay for them?—No.

Is not there this distinction, that you can take away buildings, but cannot take away drainage?—I can do so; I have buildings that I have erected that I can remove.

That does not apply; you say you can take away your buildings, but you cannot remove drainage from the land; that is the true distinction, is not it?—No; that is not the distinction I wished to draw, nor the inference I wished to come to. There may be one work done by the tenant which is not of necessity, nor of general utility, nor for the benefit of the land. It does not follow that the landlord must be advantaged by having a lot of buildings placed upon his land for the tenant's own benefit, when they are neither judiciously erected nor well arranged.

Is there no land in England where a great outlay of money might be made even upon drainage, with regard to which, if produce fell to an extremely low price, the outlay would not be remunerative?—I know some of the stiff clays of a part of Kent where drainage acts upon it like magic. It is preferable to manure and everything else; and if you get land in our country with a stiff subsoil once thoroughly drained, it totally alters the class of land.

Speaking generally, do you think there is no land in England that drainage might be applied to, where it might not be remunerative?—I do not say that. Some land would not pay for drainage; but I do not think a tenant would outlay money for it.

Take, for instance, the very poor lands that have never been brought into cultivation; might not drainage be outlaid upon them, without their being remunerative to any body?—That would be an extreme case.

The question supposes an extreme case: a general law would affect that as well as the other?—I should think it will be a very unlikely thing for any land not to pay for drainage.

None at the high rate of £8 an acre, you have spoken of?—The question was asked me about £8 an acre, if there were so many rods would it be so; I said yes; I do not say that it would cost more than half that money.

You said 1s. a rod?—Yes, 3 feet 3 inches deep.

And if put one pole asunder, it would be £8 an acre?—But our lands are not drained in that way; our drains are put in where the surface water would drain if there were not upon the ground enough open furrows, which have been called top furrows, which is across the stiches; it is then mowed with six horses; and according to the fall of the field, if they drain that field judiciously, it would not be more than from £2 to £4 an acre; those drains empty into the main drains; they put those moles down, not more than two or

three feet apart; they lay down every three or four furrows.

Then the master-drains are put in, in the Weald of Kent, with tiles, and a ferrow with a mole-plough?—Yes.

How long does the mole-plough drainage last?—I did some six years ago, and it stands well now.

How deep do you do the mole-plough?—Not more than 15 or 16 inches with the mole.

It does not tread in?—No; the soil is too stiff for that.

That system is not generally used?—No, except the soil is very stiff; but where the subsoil is very porous, then it would not want 160 rods of drainage to the acre.

CHAIRMAN.] What is the extent to which this practice obtains; what extent of country does this custom go over?—It takes the whole of the Weald of Kent and Sussex; the two Wealds.

Do you find any inconvenience, when you act for outgoing tenants, in obtaining for them the money that is due to them?—Not the least.

You never met with such a case?—I cannot say that I never met with such a case in my practice of 20 years; but I think I never met with but one.

You say that there has been a great deal of drainage; is your land such, that after thorough-drainage it becomes capable of carrying root crops?—Yes; we are growing mangel-wurzel and turnips to great advantage, after drainage.

You say that there is an allowance for naked fallows; is not the effect of drainage on your land to raise an increase of charge to the incoming tenant for drainage, but there is a decrease of charge for the naked fallows, the root crops having been grown upon the land?—Yes.

So that the recognition of the tenant-right for improvements has a tendency to diminish the charge for acts of husbandry?—Yes, for fallows in particular. It is rather rare to find what we used to call a naked fallow without any crop at all; while we have to pay rent and taxes, you will generally find roots grown or tares sown.

That has greatly increased the quantity of stock kept?—Most decidedly.

Has the drainage already greatly increased the produce of corn?—Yes, decidedly.

Have the landlords ever objected to the extent to which drainage is carried on by the tenants?—No; I think the general feeling is that if they would go on a little faster they would like it.

They have never found fault with their draining too much?—No; some of the landlords about us offer as many tiles as they want to put in the land.

What is the rate of wages with you?—An able-bodied labourer makes 2s. at the lowest penny a day, and 2s. 3d.

What, in winter?—Two shillings in winter, and 2s. 3d. in summer. I am paying 2s. 3d. a day to my labourers.

MR. HENLEY.] In your tenant valuations, do you make any set-off for dilapidations?—Yes.

As to buildings or land, or both?—All of it; we generally feel ourselves at liberty to look at the whole facts of the case, to take the landlord's interest into consideration, and if we find the man's agreement says he shall maintain and uphold his buildings, and so on, if they are not properly done we charge him for them.

If the land is in a foul condition?—Then we charge him.

Then that ought to be a matter to be regarded, according to your judgment?—A matter never to be lost sight of.

So that it should cut both ways?—Yes.

One to be set against the other?—Yes.

Is there any reason, in your opinion, except want of capital, in Kent, that has prevented the drainage being more extensive?—I think want of knowledge is the great cause.

As much as want of capital?—Yes, in the district I speak of, although they are now getting on fast, I think that has been the case in a great measure.

The thorough drainage of land, where there are no springs underneath the clay subsoils, has been a thing, within the last 14 or 15 years, very generally recognized?—Yes.

Were there not more differences of opinion about it formerly than now?—Yes. In the district in which I reside there has been a variety of opinions the last three or four years, so much so that many men have not gone in it to any extent till lately, till within the last three or four years; now they say it is the best money they can expend.

The experience of those who have done it has convinced others that it is a most beneficial outlay?—Yes.

There used to be a great difference of opinion, even within these few years, upon the fact of thorough drainage of these stiff subsoils?—Yes; it used to be supposed that it could do no good.

April 13th, 1848.

MEMBERS PRESENT.

Mr. Barronghes	Mr. Moody.
Mr. Colville	Mr. Newdegate
Mr. Evelyn Denison	Mr. Pusey
Mr. Hayter	Mr. Stafford
Mr. Henley	Sir John Trollope
Sir C. Lemon	

PHILIP PUSEY, ESQ., IN THE CHAIR.

The Evidence of Mr. ROBERT BEMAN.

CHAIRMAN.] You are a practical farmer living at Stow-on-the-Wold, in Gloucestershire?—Yes.

What extent of land do you occupy?—Upwards of 2,000 acres.

Of what description?—A great deal of what they call stone brash, limestone rock.

Have you occupied it long?—I have occupied all for 14 or 15 years; for 16 years, I think.

Have you made any improvements in it during your occupation?—Yes, I have.

What has been the nature of those improvements?—The greatest outlay I have made has been on draining upon the low land; not the stone brash, the lower parts.

Have you found that increase the productiveness of your land?—Very much.

Do you use artificial food for your cattle?—I never use less than £1,000 worth a year in artificial food and manure.

What is the usual custom in your part of the country between out-going and in-coming tenants?—The usual custom is not to make any remuneration to out-going tenants.

Not for any kind of improvement?—Not for any kind of improvement; in some special cases there is something; I am in the habit of doing a great deal in valuing acts of husbandry, and those kind of things; but it is the exception rather than the rule to allow anything for improvements.

What is the mode of giving up a farm from one tenant to another; what is the period of entry?—Half at Michaelmas and half at Lady-day; they vary very much, but they are all Michaelmas or Lady-day.

Supposing it to be a Michaelmas holding, what does

the in-coming tenant pay for?—All the costs of husbandry, the ploughings, and sowings, and the manuring; that is, the drawing it, and hoeings in some instances; and not any artificial manure is paid for.

Then the dung belongs to the landlord?—Yes, it does, in all instances.

Is the consequence of that, that it is not of very superior quality?—I do not know that that makes any difference; whether it is well made or ill made, nothing is allowed for that.

And in the case of Lady-day holdings?—It is the same in that case; the tenants in some instances have eaten their turnips off, and therefore the value of the turnip crops is taken out of the acts of husbandry.

You say that in some few special cases there is compensation?—Yes; where there is a bargain made, the custom of the country would note it.

Is it your opinion that it would be an advantage to the farming of the part country you are acquainted with to give compensation?—Very great indeed; the land is suffering for the want of it.

In what way is the land suffering for the want of it?—I think it is only producing one-third of what, with a judicious outlay of capital, it would produce if the farmer could be secured the advantage of his outlay.

Are you speaking of the light lands, or the heavy lands, or of both?—Both.

Have you a great deal of light land?—The larger portion is light land.

In what way would the productiveness of the Cotswold be increased by improved tenant-right?—By artificial manure being used.

You think that the turnip crops would be much better?—Yes.

Would there be a great increase of stock kept in consequence?—There is not the least doubt of it, I can fairly instance; sixteen years ago I took the Hinchwick Farm of 700 acres, and the first year (I took it at Lady-day) I could only find manure enough to dung 12 acres; my turnip quarters were about 90 or 100 acres; I had a lease of fourteen years; I set to and laid out my money, and before the lease was out, instead of finding dung enough to manure 12 acres I could do 60; the increase of straw had been so great, that enabled me to dung it all but about 30 acres; the other I did with bone dust.

A turnip crop is rather an uncertain crop at present on the Cotswold Hills?—The present year is the worst I have known since I have been in business, and the better I did it the worse it was; the more I put on the worse it was.

With the artificial manure?—All our land was poisoned with the weather; the turnips, after a certain period, succeeded very well, more especially with artificial manure.

Without looking to such a peculiar season as last year, you have no doubt that the use of artificial manure would be highly beneficial on the Cotswold Hills?—It is essential; without it we cannot grow good crops.

Have you below the hill, in Gloucestershire, towards the Vale of Berkeley and the Severn, a great deal of strong land?—Yes.

Is it capable of much improvement by draining?—Very great.

Is there much poor grass land there?—Yes, a great deal.

What would you recommend being done with that?—Its being well drained and converted into arable land.

Do you think in that way farmers would be induced to give an increased employment to labourers?—Yes, materially so.

What sort of buildings are they in the Vale of Berkeley?—There is very bad accommodation indeed; though I have 2,000 acres of land I have not above one barn that is fit to put anything in.

Are the buildings better on the Cotswold?—Yes, they are in the large farms on the Cotswold.

Even there, do you think there would be room for improvement if the best modes of agriculture were carried out in keeping stock?—Yes. If you increase the produce you must increase the facility of threshing; therefore you must have more barns.

And you would also require more sheds for cattle?—Yes.

Do they use lime in the Vale of Berkeley?—Yes; I used 800 quarters a year, for many years.

Is there any compensation for that?—Not a penny.

How long do you think the benefit of the lime lasts?—I do not know what end there is to it; on the strong land it alters the nature of it completely.

You think it would be just to give a compensation to the out-going tenant?—Yes, certainly; very much so indeed; for the landlord as well as the tenant.

It would be a benefit to the landlord, by encouraging the tenant to make such an outlay?—Yes.

Do you know anything of another mode of improving the clay land, by burning the soil?—Yes; I have tried it to a large extent, and did not find it answer.

Do you know of other places where it does answer?—In the Vale of Evesham it answers.

What is the expense per acre?—I do not know.

Have you any other remarks to make to the Committee on this subject?—No, I think not; except the hardship of the tenant laying out a great deal of capital in drainage and not being allowed for it; that is a hard case indeed; that was the case in instances I can mention. I drained a farm, which cost me £400; I had not had it more than two years after before a surveyor was sent over it, and it was raised fifty per cent. upon the rent, though I laid out every penny myself upon the farm; my landlord did not find a penny of it.

Is there a great deal of land that wants draining?—Yes, in all the vales they suffer dreadfully; it is no use manuring, or ploughing, or sowing, unless the water is out of the land.

Do you think the wheat plant has suffered this year?—Yes; it will show more when the dry weather comes.

What loss per acre do you think it will be?—One-fourth, and in some instances one-half, from the excessive wet we have had in March; we find the water cannot be got off, and the roots of the plant die away; in some instances they are starved to death.

Are they aware, in Gloucestershire, of the benefit of drainage?—Yes; if they had security the tenants would drain fast enough.

Do you think the landlords are aware of this, but do not find it convenient to make the improvements out of their income?—I am rather surprised they do not; the improvement is so very evident.

At all events you think, if tenants had tenant-right for draining, they would carry out those improvements?—No doubt of it.

Mr. HENLEY.] How long have you been acquainted with the neighbourhood you speak of?—I was born in it, and have known it all my life.

Has there not been any improvement in the neighbourhood since you have known it?—Not a general improvement.

Not over the Cotswold Hills?—No; the same system is pursued now as was pursued thirty years ago.

What is the system of farming on the Cotswold Hills?—The system is about the same.

Do you think it is not better carried out, and that there is not more stock kept?—Perhaps there may be a little improvement in that respect, but it is capable of much greater improvement.

In your opinion, is not there more stock kept on the Cotswold Hills now than was the case thirty years ago?

—No, I think not, except where artificial manure has been used; but with those farmers who have not used it, there has been no increase of produce; they do not keep any more stock.

Over the whole of the Cotswold Hills, speaking generally, do you not think there is more stock turned out there than was the case thirty years ago?—I think not.

Is the land generally held by lease?—No, from year to year.

Is it held under agreement, year by year, or without any agreement?—We generally have an agreement the first going in.

There is an agreement with the holding from year to year?—Yes.

Have you had much to do with the letting of land?—I have had the valuation of some estates for letting and for purchase.

Are you agent for any estates?—No.

Then you cannot, probably, say whether the tenants have required to have conditions in their agreements?—I cannot; it is the general talk at market, that if they were better protected, they would lay out more money, which they do not feel justified in doing now, because they know that men who have done it have been taken advantage of; I do not think it safe to do so.

Do you know, from conversation of that sort, or have you any opinion of your own, whether application has been made to have that security, and been refused?—No, I do not know that I can speak of that; I do not recollect at the moment.

In what way would you propose that the security should be given?—For manure, I think that the tenant ought to be indemnified, and that he should be allowed that portion which was unexhausted, which could be ascertained by two persons, one chosen by the landlord, and one by the tenant, or by the in-coming and out-going tenants; and such portion as is in the land, if he was paid for it, I think he would consider it nearly tantamount to a lease.

In your opinion, should the valuation be made upon the principle of the expense that has been undergone by the out-going tenant for the benefit to the in-coming tenant?—That would be the simplest way, between the in-coming and the out-going tenant.

In your opinion, should the valuation be made upon the principle of the expense that has been undergone by the out-going tenant for the benefit to the in-coming tenant?—Both; more especially to the out-going tenant, because he has laid out his money. There are several instances where it should be paid for; for instance, bones should be paid for; the cake and bones laid on at Lady-day; if one crop of corn had been taken, there would be 75 per cent. to be paid for; if two crops had been taken, 50 per cent.; and if three crops, 25 per cent. to be paid for, and then to cease; that would meet the evil in a great measure.

You stated that you tried burnt clay, and that it was not beneficial upon the land?—I did not do it the right way. It was the hot summer of four or five years ago. I had some strong clay land, and it got very dry. I had heard a great deal about burning clay. I set some men on, and they burnt 3,000 bushels to the acre, thirty or forty loads in a heap; and then we were obliged to get sledge-hammers to break it, and from that time to this I have never seen the least advantage in it.

If you had left in that year, who ought in your judgment to have paid for the expense of that?—That was on my own land.

Supposing you had been a tenant, and you had gone away; under those circumstances who ought to have paid for it?—As it was an experiment of mine, I ought to have paid for it; unless the out-going tenant can show

an improvement, the in-coming tenant ought not to pay for it.

Then the principle would be the benefit to the in-coming tenant, not the capital expended by the out-going tenant?—I think it should be both; I am sure it is an advantage to both, and more especially a greater advantage to the in-coming tenant. My opinion is, that the out-going tenant should produce the vouchers of what he has expended, and it should be in that ratio, because manure ceases after a certain time to be a benefit, except as to the increase of manure, that is caused because the land will bear more straw. I think it ought not to go further back than four years in the case of bones.

How long should drainage go back?—I cannot say; drainage effectually done is done for ever, I think.

Then, supposing a man to have drained a farm and occupied it fourteen years, and then left the farm at his own will, do you think the in-coming tenant ought to pay the whole expense of drainage?—No.

What proportion ought he to pay?—I should say fourteen years; I should say he ought to pay half.

If he went out in seven years, what should the in-coming tenant pay then?—Seven years.

Supposing a man had drained a farm and went out after occupying it seven years, what proportion of the expense should the in-coming tenant pay?—Three-fourths.

What should he pay at the end of fourteen years?—Half the expense.

What should he pay at the end of twenty-one years?—In twenty-one years I think he ought not to pay anything if it had been done twenty-one years, he would have had sufficient advantage to remunerate him for the outlay.

Should the person who outlays a capital upon a farm be entitled to receive interest for his money, profit upon that interest, and the return of his capital?—In what time?

You are asked whether it is not the just principle as to a farmer laying out his capital upon the land, that he should receive interest for the capital, profit upon the interest, and the capital returned to him again?—Yes, I think he ought to receive that.

When that is done his claim to any future advantage is exhausted?—Yes, if he received a good interest for his money.

In your judgment, should the payment by the in-coming tenant be equally liable to be made whether the tenant quits of his own accord or by notice from his landlord?—I think he ought; circumstances may have made him quit although he could not help it.

In the event of the improvement of the farm being an unprofitable one to him, do you think it would be just that he should go away and leave the in-coming tenant to pay the outlay?—Yes, if he can show that it was judiciously made.

In your judgment, if any law was made, should it over-ride private agreements or not?—I think not.

You think it ought not to over-ride private agreements?—No; because, generally, the lease expresses those things.

Speaking of an agreement as well as a lease, should it over-ride that?—No, I think not.

If the tenant and the landlord agree to defeat the law they ought to have power to do so, in your opinion?—Yes, I think so.

In your judgment, should the operation of any law that was made be retrospective or prospective?—Prospective.

Then the persons who have now laid out money, in your judgment, should not be entitled to receive anything?—Not compulsorily, I think.

You have stated that, in your judgment, great improvement would take place if a certain portion of the Vale of

Gloucester by the Severn was broken up, some land you said below the hills?—All land below a certain value; all green land below a certain value ought to be converted into arable.

You said that it would employ a great increase of labour, and afford a greater increase of produce?—Yes; and not only that, but we could keep as much stock upon it after it had been converted, although one-third should be in corn; the remaining part would produce so much more food, and we could keep as much stock, although one-third produced corn.

Produce includes meat as well as corn?—Yes; the produce includes meat as well as corn.

Should that be done by law, or left to the option of the landlord and tenant?—It is going on so slow; I should like to have a law to enable me to do it; that would be my wish.

You said that you think the law should put a rent upon it?—Yes, I think the landlord ought to have an increase of rent.

Do you think that would be better done by law than by private agreement?—It might be done by private agreement; it is so slow. I have been advocating it for twenty-five years; I have been cultivating land, and I see the advantage is so great, I am astonished it is not generally done. I have five fields of land that have been broken up now for eight years; they have produced four crops of wheat, and seven green crops, in the eight years, upon this very description of land I am speaking of. Before it was broken up it was not worth 15s. an acre; it would starve the beasts, and make them lousy, and rot the sheep. I have one of the pieces in flax; I never saw so great an improvement in my life as in the conversion of poor pasture land into arable land; it is all done by breast plough. I have not had a horse plough, nor a cart load of manure upon it.

Do you not think, that seeing the gain you have derived, that would induce others to do the same thing?—They will not come to see it; the Rev. Mr. Huxtable came to see it, and was astonished at it. There seems in my neighbourhood a prejudice against that sort of thing.

Perhaps it is because up to the present time they have not been so certain of the advantages as they will now be by seeing what you and others may have done?—I have seen it practised for thirty years upon the Cotswold Hills.

That is a different description of land?—Yes, that was what we call down land; I know a piece done thirty years, cultivated with a breast plough, and never had a cart load of dung upon it.

You have told the Committee, that in the Lady-day tenancy, the value of turnips are deducted?—Sometimes they are; that is not always the case.

Is that by agreement?—Yes, that is by agreement.

What is done by the custom where there is no agreement; what is the practice then?—Then if the tenant eats the turnips, he must have the value taken from the acts of husbandry, if he so entered.

That is the custom?—Yes.

Is the value settled at a certain rate, or do the valuers see the crop?—The valuers see the crops; in some seasons a good crop would be equal to the acts of husbandry, in other the acts of husbandry would be greater.

Is there any practice in that part of England of outgoing tenants taking the away-going crop?—In very few instances.

After the tenancy terminates?—Yes, that was the case in the common fields in our neighbourhood; it is very rarely the case now.

That is pretty well extinguished?—Yes; the landlords see the impolicy of it, and they see that the best thing is to purchase it.

And put an end to it?—Yes, and put an end to it.

Has there been much enclosed land in the neighbour-

hood in the last thirty years?—The fields are nearly all enclosed.

The landlords having put an end to this custom that was prejudicial by buying it out?—Yes.

That shows that the landlords are disposed to facilitate what may be for the public advantage?—Yes, in that instance.

With reference to buildings, what is the custom; who puts them up?—The landlords puts them up.

At his own expense?—Generally. I was over a farm yesterday where it was college property, where the tenant had expended £3,000 in erecting buildings; and yesterday he was called upon to pay for dilapidations upon those very buildings. I was employed by the tenant to meet the valuer on the part of the college; and though he put up nearly all the buildings, every wall and stone, and every bit that was broken down, we were obliged to put a value upon; that was very iniquitous.

How long had he been on the land?—Twenty years.

Do you know the terms of that holding?—No; I did not see the lease from the college; I saw the lease between the incumbent and the tenant.

Do you know whether there was any condition as to the rent or in the holding requiring the tenant to put up the building?—No, it was completely voluntary.

With so heavy an outlay there could have been no buildings upon the land?—Very few; only the farm house.

Then it must have been clearly understood between the parties at starting that the buildings were to be put up?—He took it for the life of the incumbent, with the risk.

And therefore, of course, if he meant to occupy it he must put up the buildings?—Yes; I thought it a hard thing to be obliged to put those buildings into excellent repair.

Sir J. TROLLOPE.] Did you see the lease?—Between the late incumbent and the tenant; he was bound to the incumbent, not to the college; the clergyman who died happened to be insolvent, and they looked to the tenant.

Mr. HENLEY.] Then, taking the lease, he might have guarded against a contingency of that sort if he had been a prudent man?—He depended upon the life of the clergyman.

Sir J. TROLLOPE.] He ran the risk of that life?—Yes.

Then was it in the conditions that he should put up such buildings?—Not at all.

He did it then for his own convenience?—Yes.

And he took the chance of the death of the incumbent?—Yes.

Was that a hardship then?—Yes I think it was; he was obliged to pay when I think he ought to have been paid for a certain portion of those buildings, which ought to have been paid for by the next occupier or the incumbent.

Mr. HENLEY.] Do you know the rent he paid?—About 12s. an acre.

Was that a full rent?—Yes, the land was wretchedly out of condition.

It was a fair times rent?—Yes.

What is the practice in that part of England about agricultural fixtures, such as threshing machines?—They do not take farms with machines, or they come to an agreement about them.

There is no difficulty made about the removing fixtures of that sort?—No; they are generally portable machines.

Buildings put up for horses to work in; whom do they belong to?—The landlord.

Are you aware of the custom there is in trade, that buildings put up for the purpose of trade may be removed by the tenant?—No.

In your judgment, would it be fair to put farmers upon

the same conditions as tradesmen are put in that particular?—Yes.

Do you see any objection to it?—No; it is a very good plan and very fair.

In your judgment, if a landlord, having the fee-simple of the land, and the tenant are both willing to make an agreement to give a proper security to the tenant for his outlay, could they do all that is requisite?—Yes; I do not see why a bargain could not be made by the landlord and tenant for their mutual interest.

Would it be of considerable advantage to give the owners of settled estates power to make the same agreements beyond their lives?—Yes, I think so; I have seen the evil of their not being able to do it.

It would be a great improvement if it were done?—Yes, I think so. I occupy a parsonage farm, and I should like my landlord to give me a lease; but he has not the power.

What period do you think oil-cake should be paid for?—With regard to oil-cake given to the cattle, the cattle derive a great advantage from the oil-cake; in the first place, in making beef, and of the price. As to the proportion, I should say two-thirds of it ought to go to the beast that eats it.

And one-third to be paid by the in-coming tenant, if the manure is left?—Yes.

How long should you put bone-dust at?—Longer than that; I have seen the benefit of bone-dust seven years after. I have never valued it at more than four years.

You divide it into four equal portions?—Yes, into four equal portions; and for guano not so long.

And for guano how long?—Not above two years; we get it out directly almost.

In your judgment, in the event of a person having tenant-right, when he quits a farm should any notice be taken of dilapidations?—Certainly; and if he has farmed badly, I think he ought to pay for it; if he has neglected the land he ought to pay for that.

That should be set off against any claim he might have for other things?—Yes, certainly, I think so.

In your judgment, as a valuer, have you seen any farms given up in a bad condition?—I have; and in some instances the tenant has been obliged to pay, and in others the landlord has been indulgent, and has let him off.

MR. NEWDEGATE.] With respect to these five fields that you say have increased in value so much, you were at some expense to bring them into that state, were you not?—The expense was very trifling.

You say in eight years they produced four crops of wheat?—Yes, and seven green crops.

Were you not repaid for the expense upon them after the second crop of wheat?—Yes, I reckon I was paid the first year for all the expenses.

Then, if you had been holding that land as a tenant, you would have been amply repaid, and any compensation you would have received for the expenditure would have been a bonus?—Yes, I should be satisfied with that; but I drained it first; that is a permanent improvement.

At the same time you say, that after the first year, and, at all events, after the second year, you were paid the whole of the expense?—Yes, the expense was nothing hardly.

Then, supposing that you held that land of another person, and had made the outlay, and had been repaid in two years, would you have had any claim, in justice, for further compensation if you had given the land up?—No, certainly not; I should not claim compensation in that case; the landlords are very particular about that; we have generally in our leases a forfeiture of £50 an acre if we break it up; that is what I complain of.

Would not it be fair that an increased rent should be charged upon broken-up land?—Yes, certainly; at least 10 per cent. more rent the landlord ought to have.

Would you take any part of that increased rent as compensation after you had reaped the full benefit of your improvements, and received back your capital and return for your outlay; should you advocate a law like that?—No.

Then after two years, in that case, the tenant would be repaid his money?—Yes, the outlay is not greater than common cultivation; I contend it is cheaper.

You drained that land?—Except the drainage; I leave the drainage out; that ought to be paid for; but for the simple conversion of the land from pasture to arable, nothing ought to be paid.

You drained this land, you say?—Yes.

After the expiration of two years, you say you were fully compensated?—Yes.

For drainage?—Not for drainage.

How long did it take then to compensate for the whole expense?—I think I had it all out of the first crop of wheat.

Drainage and all?—No.

How long was it before you were compensated for drainage?—I should consider I was paid for drainage and all now, if I were to rent the farm.

After how long?—It has been eight years in cultivation.

Would you not have been repaid the expenditure of drainage by the rapid succession of four crops in less than eight years?—Yes; but the green crops are some expense; that must be taken out.

The question refers to the four crops?—It takes two years to grow a crop of wheat; the green crops are expensive crops to grow.

But you had four crops of wheat in the eight years?—Yes.

The land would not have produced those crops till you drained it?—No.

Do you think that those four crops of wheat did repay the expense of drainage?—I would not say exactly four, or three, or seven; I cannot tell; my crops happened to be very good, and they did repay it.

The four crops then did repay it?—Yes.

Would it require the value of four crops of wheat to repay you the drainage?—No, I do not know that it would; but we got the four good crops.

Would not two crops pay it?—Yes, I think they would.

Then from what you say it appears that the whole expense of drainage in such a case as you spoke of would be repaid by two good crops of wheat?—Yes, I drained it in a peculiar way; it was very strong clay, and came up to the surface. I dug a clay pit, and burnt 200 load in a heap with small coals. I had the drains dug out: it was ridged, and I put a drain in every furrow, and dug out to that, and got some small one-horse carts and filled it in.

What is the expense per acre of that kind of drainage?—That would depend upon circumstances, where there ought to be a drain up every furrow.

What was the expense per acre you tried?—I cannot say.

SIR J. TROLLOPE.] Did you put in a pipe?—No, merely filled it in, in the way I have said.

Did you not throw your ridges down?—It has never been horse-ploughed yet.

You do not want to remove the surface soil to the top?—No.

You purchased this land?—Yes.

Supposing yourself to be a tenant of a quantity of this poor grass land, do you think the law ought to entitle

you to break it up without the landlord's consent?—It would be a strong measure, but I say it would be a very great advantage to the landlord, the tenant, and the community.

Would the landlord be, in such cases, perfectly certain that his land was not deteriorated?—Yes; if he laid a proper restriction upon the cultivation.

You would not allow a tenant, if you were a landlord or agent, to break up pasture lands without special agreement?—No.

You would not allow him to do it without consent?—No.

Your first position was, that a tenant ought to have liberty to break it up?—Yes.

Is not it necessary to get the landlord's consent?—Yes.

Who should put up the buildings if there were 1,000 acres of poor grass land, and you should have power to take that land and break it up; it would require different buildings?—Yes.

Who is to put those buildings up?—If you would give me a lease of 21 years I would put them up.

Would that be a hardship at the end not to be repaired?—No.

And you would be bound to hand them over in a good state of repair?—Yes.

Would not the actual fee-simple of the estate be actually deteriorated in many cases if it was left to the tenants to do as they pleased?—Yes, if they cultivated it as they liked.

Yours is not a very highly cultivated district?—Yes, it is improving.

Would it be safe for the legislature to make a provision to interfere with the general arrangements between landlords and tenants?—I cannot say as to that; but it is so advantageous a thing that I cannot see any harm in it under proper restrictions.

Will you state the course of your own cultivation; do you turn the sod first with a breast-plough?—Yes.

Do you burn that sod?—Yes.

And spread the ashes on the soil?—Yes; then breast plough it again, and plant the turnips, if I can get it up early enough.

Is this land sufficiently dry to enable you to eat those turnips off?—Yes.

With sheep?—Yes; the land that is breast-ploughed is never too dry nor too wet.

What is the cost of turning the turf, per acre?—The first I gave 14s. an acre.

And then the second breast-plough?—Six shillings. Then you do it for 20s. an acre?—Yes.

Does that include the heaping and spreading?—Yes.

You take a very thin skin off the land?—Yes.

What amount of ashes per acre do you put on?—That depends upon the turf; if it is good turf it will produce more than a middling turf.

You then take, after the turnips, and sow it with wheat?—Yes; and I sow Italian rye-grass among the wheat the next spring, and mow it for hay, breast plough, and burn the stubbs and plant turnips; then comes wheat again.

That is, the year when you take two green crops?—Yes; it comes wheat every alternate year.

How long will it stand that rotation?—As long as I can get five quarters to the acre it shall stand.

What manure do you put in?—None; I fold and eat the turnips off; I mow the rye-grass; the sheep eat all that is grown upon it, and corn with the turnips.

You fold the turnips?—Yes.

That is sufficient manure?—Yes, with corn.

And then you have four crops of wheat?—Yes.

Is the fourth crop as good as the first?—Yes.

The first crop may perhaps be affected by the wire-worm?—I get it to do very well even at first.

And the fourth rotation is as good as the first?—Yes. Do you intend to go on with that?—Yes.

In fact without expense?—I may give it a few barrels of bone dust.

You say that land was worth 15s. before its conversion; what would you value it now at?—Forty shillings an acre; there is no land producing so much money.

CHAIRMAN.] How do you manage about couch?—There is never any couch in old turf, and I take care to get none in; nothing keeps it so clean as the breast plough. If I had a bit of foul land that had been cultivated to the depth of five or six inches, I should clean it with the breast plough first, and then fetch up the deeper soil.

Do you only give it one breast plough after turnips?—Sometimes two; we breast plough it after the turnips in March; it sometimes gets trodden down; that is done at 4s. 6d. an acre.

That is 9s. an acre to prepare it for wheat?—Yes.

Do you get a sufficient depth of mould?—Yes, I dibble it.

Do you get mould enough to drill?—Yes.

MR. MOODY.] What do the men earn?—One shilling and sixpence or 2s. if they have a full day; they do it very fast.

Would tenants, unless under special agreement, be liable for dilapidations of buildings?—Not unless under special agreements, if it is not mentioned in the lease.

The person who had to suffer under those hardships spoke of just now, in fact, merely took off the liabilities of the life tenant?—Yes.

You would not ask for protection to the tenant generally, merely upon that case?—No.

CHAIRMAN.] You say that there is a general wish amongst farmers for protection for the outlay of their capital?—Yes, certainly there is.

You also say that it would be a great advantage to the in-coming tenant?—Yes; it is much better for a man to have to pay for an improvement than have to wait to make it himself; then the land is fit to go to work upon.

In your opinion, the tenant would lose more money than he would have to pay, if he were to have very poor crops whilst he was getting the land into condition?—Yes, he would have to make an outlay in either case; but in the one case the land would be ready to bear the crop.

MR. HENLEY.] Have you considered who the payment is to be made by?—The in-coming tenant.

In your judgment, the remedy should be against the in-coming tenant?—Yes; only for manure.

Supposing land not taken, against whom would you go then?—The landlord; he has the benefit of it in his land.

Supposing the landlord is not to be found, what would you go against then?—If there is no one to be found, I could not tell where to go.

CHAIRMAN.] Could you not find the land?—No; I would not have a lien upon it.

Have you considered the question, where the landlords or tenants are not to be got at, whether you would give a remedy against the land?—I do not see who you could go to, if there was neither landlord nor tenant.

Evidence of Mr. JOHN HOUGHTON.

CHAIRMAN.] You are a land agent and also an occupier of land, residing near Sunning-hill, in Berkshire?—I am.

What extent of land do you occupy yourself?—4,000 acres.

In what parts of England?—In Sussex, in Berkshire, in Middlesex, in Buckinghamshire, in Surrey, and in Suffolk.

Have you much improved the land you occupy in Berkshire?—Yes, very much.

In what state was it when you first took to it?—I farm in Berkshire one farm of my own, which I bought freehold property, which was part of Bagshot Heath; that was in a state of nature. I have expended very large sums of money upon it, and now I have made part of it bring good crops. Upon another farm I have in Berkshire, which is leasehold property under the college, which I have a beneficial interest in, there I pay a fine every seven years, and a very small reserve rent; that was also in a state of nature, or nearly so, when I took to it in the year 1830. What I complain of, and what I most certainly wish to call the attention of the committee to, is this—the very great hardship we labour under, after going through that time; when our fine comes round at the end of the seven years, a very great increase is put upon our improvements; with regard to fines I have known a very great increase put upon them, and I think it a very hard case, because every shilling of the improvements have been made by the tenant. It is one of the greatest impediments to the improvement of agriculture that the whole of the college property and church leases are let out for a term of years on paying a fine every seven years. If you happen to break up your waste lands, or build a new house and premises, and lay out a large sum in making it a fit residence to live in, they come round at the end of the seven years, and make you pay an increase upon your own capital expended. That is the same with respect to improvements of land, they not having contributed one shilling towards those improvements; you have the beneficial interest, and if you do not choose to pay them what they think proper to ask they will not renew, and at the end of 14 years more you have to give up the whole concern. I think that if any arrangement could be made for some definite plan it would be a very great advantage. Taking, for instance, the average of the last three fines; if it could be made satisfactory, so that the fine shall not exceed the average of the last three fines, then it would give an immense benefit to the country at large. Now, for instance, I know a place very well where it is dean and chapter property; the parties who are the lessees would be glad to build better residences, but they cannot do so because of the uncertainty of the tenure. If they put up a new house, at the end of the seven years the surveyor would come round, and he would say, "Yes, when I was here last time it was an old tumble-down house, but I see put up a new one; we must have 2 or 2½ years according to what we now find."

Sir J. TROLLOPE.] Is that invariable with all college and all church property?—Yes, with all college and all church property. I do not mean that they all increase the fines, but if you look back you will always find that the increase is very considerable, some are very liberal.

Is not it the fact that you can generally tell church property by the appearance of the buildings?—Yes; and that is the very reason why I wish to call the attention of the committee to it. As to the land, they do not make the most of that; and as to the buildings, the tenant says, "I should be very glad to improve those buildings, but the time for my fine is coming round, and if I do improve the buildings my fine will be increased in proportion as the property is improved."

It is proverbial that is the case; I found my place in the most ruinous state.

You say in Berkshire you have a freehold property of your own?—Why build on a leasehold farm.

Why did you build the residence upon the leasehold?—I bought my leasehold first, and then I bought my freehold.

CHAIRMAN.] Will you tell the committee what is the ordinary mode of giving up farms from the out-going to the in-coming tenant in Berkshire; is it much the same as in Buckinghamshire?—No; there are no two counties the same.

Mr. NEWDEGATE.] You were perfectly aware of the liability to the increase of the fine when you took this leasehold property?—Yes; I am now speaking generally; I say that it is one of the greatest clogs, not only with respect to the owners of property themselves, but to the lessees, because the church would be very glad themselves to do it; they say, "If we had the power, we would give you a better tenure." But there is another consideration, they are a moveable body. For instance, the man who at the end of one seven years is in possession of the fund arising from those fines moves off, and somebody else comes, and he says "I know nothing at all about that."

The disadvantage you are pointing out is the disadvantage of leasing property on the terms that the church and colleges now let their land?—I think that the plan of church leases should be put upon a different footing altogether.

Sir J. TROLLOPE.] You want a power of redemption?—Either a power of redemption, or that the fine should be upon the average of a certain number of fines previously paid.

Making it a fixed payment?—I would have it done as it is done in Ireland; it is done in Ireland, and it works very well indeed. I am connected with Ireland, and I have seen the working under the Ecclesiastical Bill.

CHAIRMAN.] What is the usual time of entry upon land in your part of Berkshire?—I take the two counties of Surrey and Berkshire; a portion of my land is in Surrey, and a portion is in Berkshire.

What then is the period of entry at your end of Berkshire?—Michaelmas.

What has the in-coming tenant to pay for?—If I left my farm in Surrey I should be entitled to be paid for clover lays, but I should not be in Berkshire. Now, for instance, I should be entitled in Surrey to be paid for my half dressing, but I should not be in Berkshire.

In Berkshire you are paid only for acts of husbandry?—Yes, I am paid only for acts of husbandry.

To whom does the manure belong?—To the landlord.

Are you entitled, as an out-going tenant, to compensation for any kind of improvements?—No, I am not, except under special agreement.

Are those special agreements common?—No, they are not.

The out-going tenant is not entitled to be paid for any drainage in Berkshire?—No.

Is there much room for that in your part of Berkshire?—Yes.

Do you know the district called the Forest?—Yes, I do.

Extending from about Windsor to Reading, nearly?—Yes.

Does a considerable portion of that district require drainage?—Very much.

Are the crops very deficient, compared with what they would be if the land were well drained?—Yes, I think so.

Is there not another mode of durable improvement by chalking in that district?—Yes.

Is the chalk brought from a considerable distance there?—I fetch mine 10 or 12 miles.

Is there any compensation awarded to the out-going tenant for that?—No.

Do you know the expense per acre?—I consider that my chalking costs me £4 per acre, and from that to £5.

Including that expensive hauling?—Yes.

In a great part of the forest they are obliged to go a great distance for chalk, are they not?—I am speaking of sand land; if I was chalking what is termed the clay land of the forest, it would come to more, because a greater quantity of chalk would be required.

Is that operation very beneficial both on the sand and clay land?—Yes; it is impossible to farm without you chalk or lime it; you can grow nothing without that.

If all this cold clay land in the forest were drained and chalked, in your opinion would there be a very great increase of production?—Very great.

Do you think a tenant from year to year can, as a prudent man of business, incur that risk himself without compensation?—Certainly not.

Do you think the landlords generally have the means to pay for it out of their own pockets?—I should suppose that some could do it, and some could not. I will tell you presently of a plan that I was going to suggest, showing the way in which I think the difficulty is to be got over; I have turned my attention very much to this subject for these last few years, both as a land agent, as a land owner, and as a land occupier.

In Surrey, what is the custom between the out-going and in-coming tenants?—As to the custom there, I should say that Surrey is the most expensive county in England; I do not think any out-going tenant could complain of Surrey; he is paid for his dressing, and half-dressing, and clover lay: the custom of Surrey, as it is, is a very expensive county indeed for a man to take a farm in.

Are you acquainted with Buckinghamshire?—Very well.

Are the customs there different from those of Berkshire?—No; they are very similar.

Is there any difference in those customs that it occurs to you to mention?—No, there is no difference that I know of in that respect, between Berkshire and Buckinghamshire.

In what part of Buckinghamshire do you hold land?—Near Aylesbury.

Do you know whether the chalk district of Buckinghamshire would be much benefited by the application of chalk to the surface soil?—No, I do not think the chalk district would; the clay district would; where the chalk is near the surface I do not think it would be any benefit to that, but there are lands in Hampshire I know, and some parts of Berkshire, where the chalk is lower down, and the clay rests upon the chalk; there the best management you can adopt is to chalk it.

Generally speaking, you mean there is chalk enough in the soil of the Buckinghamshire chalk hills?—Yes; on what I should call the chalk hills, taking the district about Wycombe.

Going north of the chalk hills you get to heavy land?—Yes, there it wants chalking.

Does it also want drainage?—Yes, very badly on the heavy lands.

Do you believe that if facility were given to tenants to carry out those improvements a considerable increase of employment of labourers would be the consequence?

—No doubt of it, and I think it an extremely hard case that a tenant should not be allowed the same advantages as the tradespeople; if a tradesman puts up a building, it is his own property; if a farmer puts up a barn or stable in order to carry on his trade, it must be left for the benefit of the landlord, and we have no claim upon it at all; it is a very hard case.

Have you any other point to mention?—I will go into that question to which I just now referred. In Sussex you have the same difficulties to contend with as those I have been explaining in other counties; but in Lincolnshire you get allowances where I am connected a great deal; in Lincolnshire the tenants get allowances for their improvements. What I was going to suggest was this: first of all I will take the case of church property, where the tenant takes a rectory farm; the difficulty that the clergyman has there is, that he cannot give a lease, and you find that the buildings of the rector are generally in a very dilapidated state. There ought to be some power given to the rector of the parish; he can do it once after an inclosure; that is, he has the power of leasing for 21 years, with the consent of the bishop. That ought to be carried on, not only for the first time after an inclosure, but it ought to be carried on in the same way for ever, because it is absolutely necessary. Take, for instance, a clergyman; I will suppose him to be a most excellent man, but he is taken off suddenly by death, and the tenant has no power whatever. As soon as the breath is out of his body, whatever may happen, in comes the next incumbent; and the whole of the tenancy being put an end to, he comes in the next day, and takes possession of that land; there is no time given, whatever the tenant may have done upon the land; as soon as the breath is out of the incumbent's body the next incumbent comes and takes possession of that land, and with that land he takes the possession of all the improvements the tenant may have made. I think it is an extremely hard case; and I have had cases that have come to my knowledge that I have felt very much. A tenant has said, "I had no idea our rector would have died so suddenly, and I am now completely at the mercy of the next man." I know a case at this moment where a man has improved his farm, the rector is just dead, and there is a new incumbent appointed; and the increase in the rent is between 30 and 40 per cent.

Sir J. TROLLOPE.] What remedy would you point out?—I would recommend that the incumbent should have the power of leasing, with the consent of the bishop, for 21 years, the same as under an inclosure.

In that case would you permit the fine being taken as in the case of colleges?—No.

You have stated, from your knowledge of the county of Surrey, that it is a very expensive one to make an entry upon?—Yes.

From the extent of the valuation?—They have to pay for the clover lay; I have known 50s. an acre charged.

Upon what principle is that clover lay valued?—They consider a clover lay a preparation for wheat.

Do they pay the year's rent of the land in addition to the value of the seeds and labour?—No; it is what they call the clover lay, and it is valued; they call it the preparation of the wheat.

In fact, all manures are allowed for then?—Yes.

Upon what principle is oil-cake allowed for?—I do not think oil-cake would apply to that county; it is principally London manure.

Is that calculated by the number of tons or loads brought down?—They calculate it according to that.

Have you found, in your experience as a land agent and occupier in that county, that that has encumbered

the tenant and made him short of capital - tion, having to pay so largely on entry?—I have heard that.

Have you heard that it cripples the means of the incoming tenant paying so largely for the entry?—Yes.

Is that sum of money invariably paid from tenant to tenant, or does the landlord become responsible in any way?—No, it is from tenant to tenant.

Does it tend to deteriorate the value of land; for instance, does this heavy tenant-right cause the land to be let lower; Yes; there are not so many people who can take them.

No act of parliament is required there?—It is the custom they have.

In the other four counties, Sussex, Berks, Middlesex, and Bucks, are there not various customs existing?—Yes, various.

And some places are very much inferior to others in point of allowance?—Yes, Middlesex.

Is it there unsatisfactory to the tenants?—I should say they are.

In Middlesex, what is the tenant-right?—The produce is generally sold to the London market, and therefore the general rule is to bring a load of dung back for a load of straw.

Suppose a tenant was going to leave, does not he sometimes sell his produce in London and omit to bring back the dung.—Yes.

Are they leaseholders or tenants-at-will?—Both.

Those that are tenants-at-will, do they hold under agreement?—Yes.

And that is a portion of the agreement?—Sometimes it is, and sometimes it is not.

Do you or do you not see any great difficulty in the legislature framing any compulsory enactments to legalise all those very great varieties of tenant right?—Yes, I see great difficulties in it, but I think there are very hard cases. I will name one now, of a man who three years ago took a large farm under a certain nobleman who, up to a certain period, stood exceedingly high as a landlord; the in-coming tenant, and not only him, but in a number of other instances, are so situated; those estates are to be sold, and that tenant came to me the other day and said, "Now, what a pretty state I am in; I took this farm of nine only three years ago; I have laid out half my capital upon it; I knew that I had such a good landlord, and now these estates are coming into the market, and I shall lose the whole of it." That is a hard case. And I could point out to the committee many other cases similarly situated; and I think, for instance, where a man has only a life interest in the estate, such a condition of things ought to be provided for. For myself I tell the committee, very candidly, I farm very largely, but I never farm without leases; I might as well expect to fly without wings as to farm without lease. I have all the land I occupy under long leases, and therefore I take care, as far as I am concerned individually myself, that I have security for all the improvements I make. But I have had those cases under my notice, and I do not know when I ever felt more, for that man had been the great stay of the parish in employing the whole of the labourers in draining, ditching, and fencing, and now that estate is in the market, and he cannot recover one shilling.

It is not a certainty that he will be dismissed?—One thing is quite certain, that the farm looks so different to what it did when I saw it in its unimproved state, that whoever is the purchaser I am satisfied will think the rent too little. In fact, some measure must be adopted as to what should be paid for, and what should not. At the same time it would be impossible to say that whatever the tenant chose to do upon the farm

when he left that farm should necessarily be paid for, because, whatever improvements he might call improvements, it would be quite another question whether another man might call them improvements. I consider, however, that some measure of this description ought to be framed, and that is the only way in which you can meet the difficulty. Supposing, for instance, that I am a tenant from year to year upon a farm, and I want to carry out certain improvements, that I should be bound to send to my landlord a written statement of what I am going to do. I should then give him notice that such and such fields required such a sum of money in drainage; and that I required such and such sums for so and so, going through the whole of the improvements; and then if he did not choose to make those improvements and charge me a per-centage upon the rental, I ought to have the power of doing them under some superintendence which might be appointed. I have thought of different tribunals that that should be decided by; for instance, if I gave my landlord notice that I required such and such things to be done, the Board of Guardians, I have thought, would be a very good tribunal to sign this document, stating that they should be done; then I ought to have a lien, or what I call a first charge upon the land; and it should run it off gradually year by year till the whole amount had been paid to me again; that is one way in which that difficulty might be met.

Would you give the landlord the power of assenting or dissenting?—Of course I would.

You would give him notice?—Yes, I would give him notice.

Would you give him the power to withhold his assent?—Yes; and suppose he did not, then this tribunal of which I am speaking should be allowed to say whether it should be done or not. Now, with respect to the breaking up of grass land it would be impossible sufficiently to express how strongly I feel upon the necessity of having the inferior grass lands of this country broken up; but it is impossible to make any enactment to say they shall be or shall not be broken up; it must be left to the individual interests of the owners of that particular property. You cannot say to a man, You shall break this up, or You shall sow this down; that is impossible.

You state that you farm entirely under leases; are there conditions of management in those leases?—Yes.

Would not such an act as you now wish to bring in supersede all leases, and break every lease in the kingdom?—No; I think there should be some such tribunal as that I speak of; whether that would be the proper one, or not, I cannot say.

By referring to a tribunal of any sort, matters between yourself and your landlord, would not you be taking it out of the landlord's power to give his assent or dissent; would you not create a tribunal which would decide upon the expenditure of capital upon a person's property?—You would create a tribunal of that description; but still I hold this opinion, that you may be acting in dog-in-the-manger fashion, to make use of that phrase; and I say, if he will not give his consent to make the improvement himself, nor any one else make it, the legislature should say, "We cannot allow this land to be in a state of unproductiveness; we must have some tribunal to decide whether the proposed outlay will be proper or not."

Would not it be fair to extend that tribunal to other matters besides land, as it regards the employment of capital in any other business?—No.

Is it right to set up a tribunal in judgment upon the mode in which the landowner shall deal with his property, and not extend it to mercantile affairs as well?

—I do not think you can bring any business into the comparison that is precisely similar to land.

People might think that a timber merchant, or a coal merchant, did not do the best with his capital; would you like any tribunal to interfere with him?—No.

Is not the landlord in the same category?—Yes; but the landlord would be in this position: I take it that a great many of the landowners in England would be glad to have the improvement made, and to adopt the plan I have been suggesting; they would have no sort of objection if they had the power of giving a man notice; and that notice has nothing at all unreasonable in it, because, for instance, I say you merely appoint a tribunal to decide whether it shall be done or not. If you go and look in districts that I know of, and which I have too often seen, there the buildings are all tumbling down, and the land has no drainage going on, and there is no improvement in agriculture going on there; and then, if you ask the tenant why that is, he says, "I am only tenant from year to year; my landlord will not do anything, and I cannot."

You say you have a general knowledge of most parts of England, and you alluded particularly to Lincolnshire, where you say great improvements have gone on, and where tenant-right exists?—Yes.

Do you know of any compulsory law to make the landlords improve their property there?—No.

Have they not been doing it in the voluntary endeavour to do the most they could for the advantage of the community and for their own advantage?—Yes; I have known Lincolnshire well; every individual parish.

You recollect the rabbit warrens on the heath?—Yes.

Have not the improvements that have been effected been made by the mutual arrangements of the landlords and the tenants?—Yes.

Is not a similar improvement of land going on steadily and satisfactorily all over England?—I have seen great improvements made in the last 25 years.

And the county of Lincoln has set an eminent example?—Yes, certainly.

Do you know whether in that county, where the landowners have done so much, they particularly object to any interference by the legislature in their private affairs in the management of their estates?—Yes; the landowners are there very liberal; there is no such county for landlords and tenants.

Did you hear that they had protested against the bill brought in by the honourable chairman of this committee last year?—I saw it in the paper.

And you are well aware that in that county a very liberal tenant-right exists upon the voluntary principle?—Yes; upon the voluntary principle.

Of mutual arrangements?—Yes.

Do you wish to make that a statutory proceeding throughout the land?—I am now only speaking to this: I want the exception to the rule. As to the instances that I have been pointing out upon a certain nobleman's estate, there very great distress will arise. I have known also in Lincolnshire, where land has been sold, and the parties who have improved that land have not had the opportunity of reaping the benefits of their improvements.

Then you would carry over the contract between the landlord and tenant, when it is out of the power of the landlord who sells the estate to fulfil his portion of the conditions?—I think so; but suppose a landlord to sell his estate, as I have known to be the case, at a very great increase in price, from the improved state of the tenancy, the tenant then ought to have the power of giving them notice from time to time of what he is

going to do; and then, when the landlord has decided whether he would accept such improvement or not, the tenant should have the power of going to some tribunal; because I wish distinctly to be understood, the landlord will then have the power of giving the tenant notice to quit; he might say he did not agree to the plans, and would not carry them any farther. Where there was any gentleman or nobleman who had only a life interest in the estate, and in the cases of other estates subject to life interests, some sort of security to the tenant is required.

If you understand the legal part of the question, you will see that that would enable a person to bind his successor, a power which the law does not give him?—Yes, exactly; and as I have said, a great deal of good would be done in this country if a measure of that description could be passed. I know, and I find it from experience, that landowners have regretted that they have not had the power; they have said, "I have only a life interest in this property, and I have no money; I should be glad to do something if I could for you, but I cannot;" therefore the legislature should step in to give the tenant the power of carrying these improvements out. I had a case the other day, it was that of an old lady of 75. The case is exactly similar to the one I have mentioned: the tenant said, "I have no power whatever to do anything; as soon as the breath is gone out of the old lady the property goes into an entirely different channel; I cannot do it, and she will not do it; I cannot lie dry in my bed." And as to the rest of his premises also they were in a state of dilapidation; they were actually tumbling down. Those are instances where I think the plan that I have suggested would work; and it is the same with the buildings. I very frequently go into a district, and I see that the buildings are all in a state of dilapidation. I had a case the other day: I was looking over the estate of an old lady, who has died since, at the age of 88, and as to the buildings I never saw such a scene; the tenants said, "We cannot do anything, and she will not;" and the thing went on until it was a sort of wreck altogether. Supposing this power had been sanctioned by the legislature, all parties would have consented to do what was requisite; no one would have objected; the tenant would have given the notice, and the old lady would not have raised any objection to it, and the tribunal would have seen it was a beneficial outlay; they would merely have signed this notice to say it should have been done. I have thought, as I have said, that the Board of Guardians would be a very good tribunal for the district.

Are not Boards of Guardians composed chiefly of tenant farmers?—No, there are ex-officio guardians.

You are speaking simply of the rural districts?—But suppose a gentleman wished to object to it, and he brought evidence to say that those things he had received a notice for appeared to him to be unnecessary, you would bring evidence to refute it, and it would be soon decided. I do not mean to say a Board of Guardians would be the best tribunal, but merely that I wish some such tribunal to be appointed.

It is the best you can think of?—Yes, it is the best I can think of; because it is composed of men who know the district and know the neighbourhood.

Would you also limit the power of landlords to raise their rents?—Certainly not.

You would allow them to do that if they please?—Of course.

Have not all tenant farmers the same privilege of taking leases as you have, if they like to do so, or of refusing to take the farm; that is, at the commencement of their tenancy cannot they state the terms upon which they will take the land?—Yes; but many men are not

situated exactly as I am; for instance, I do not care whether I farm a farm or not; it is not of that importance to me; but a man who has agreed upon a farm, and who has only just the means of going on profitably, and which, perhaps, his father may have left him, he finds, when he come into possession after his father's death, that from being a better educated man, he could do much better than his father had done if the law would allow him; but he comes to the place, and he sees that the landlord has only a life interest in it, and he says, "I would improve, but I cannot improve; I want the power of doing it, and I would do it if I were able to do it." I wish particularly to be understood to say, that I do not want any law except one which is based upon justice to both parties. But circumstances have occurred within my knowledge showing that great hardships have existed, and there is no law now to prevent those hardships existing and going on; and the country remains still in a state of nature for the want of this law, for which I am now contending.

Mr. HENLEY.] Your observations have principally had reference to parties who have life interests?—Yes, exactly so; and in fact to all parties. I am now taking extreme cases that I know of.

But those are cases where the landlords have had only a life interest?—Yes.

Can a landlord, with a fee-simple interest, willing to make a proper arrangement with the tenant, the tenant being willing to make such arrangement, do that for themselves?—Yes; but if that notice could be given by the tenant when he saw it requisite to give that notice, whether it was to a life tenant or a landlord in fee-simple, the landlord would then have the power in his own hands, because he could say to the tenant, "You shall not stop here any longer."

Would you take from the landlord the power of giving notice to quit?—Certainly not; I merely say that if I, being the tenant of such and such property, give notice that such and such fields require such and such an outlay, and then state what it is for; for chalking, or drainage, or whatever it may be; the landlord should then have the power, after the receipt of that notice, to say, "I shall not entertain it; I shall give you notice to quit. That would put an end to the matter. Or it might be that he would say, "I will send over my agent, and we will agree to it;" or he might say, "I will refer it to this tribunal." That notice should go to say, that on bone dust four years should be allowed, if the landlord pleased to take it at four years; that is the principle upon which I would legislate.

Then of course, if you would not deprive the landlord of the power of giving notice to quit, the thing would result in an agreement between the landlord and the tenant; because if the landlord was not willing to go further, he would give notice to the tenant?—I do not see that, quite.

Would it not be so if the landlord chose to take that course?—Yes; he would have the power of putting a veto upon it if he pleased.

So that any tribunal could not come into action without the consent of the landlord?—It could not come into operation without the consent of the landlord; he would have the power of putting his veto upon it.

You were understood to say, that in your opinion any legislation that might be made should not over-ride leases?—There are parties that cannot give leases.

But in the case of leases existing, should it over-ride the lease?—No.

You would not interfere with a lease?—No.

Would you interfere with any agreement made on terms of holding year by year under a formal agreement?—Wherever they came under the plan I have been laying down, I would.

Then in that case you would over-ride an agreement?—If it was only an agreement from year to year, and if those improvements which I have been pointing out were necessary to be carried out, the tenant should then give notice, and the landlord could put an end to that agreement, if that be an over-riding of the agreement. The measure that I am now advocating would be beneficial to every party; because, supposing circumstances to press very heavily, say where the property was in Chancery, or in the hands of life tenants, or in the hands of noblemen who have not the means of making those improvements, but who would be glad to have it done; those are such cases as those that I have now been pointing out.

Then if you are correctly understood, what is most wanted is to put life tenants into that position, that they would be able to give the same security to their occupying tenants as the fee-simple owner of the land can?—I think the fee-simple owner too should be dealt with by the plan I am stating; because no hardship could arise to the owner of the fee-simple, any more than in the case of the life-tenant.

If you make a law that a fee-simple owner can defeat by giving the tenant notice to quit, is not that holding out a delusion to the tenant?—I could point out plenty of landlords who would be glad to say, "I have no money, but if you can tell me how it can be done I shall be glad to make it secure to you."

Why cannot they do it now; there is nothing to hinder the owner of the fee-simple from doing that?—Of course it might be done.

There is no impediment at all in the case of the fee-simple, is there, that you know of?—No; but still I am speaking more as to where tenants for life are concerned.

And the question asked you is, whether it would answer the purpose to give the tenant for life the same power of dealing with it that the tenant in fee-simple has?—I would take it more extended.

Why would you do so?—I will state my reason; I say that already a great many of the occupancies throughout the country are in the hands of tenants in fee-simple; there are many who would say: "I do not want to go into this, but if you can show me that it is reasonable, I have no objection to it; let it be done." The landlord would then feel that the tenant could serve him with a notice as a life tenant, and he would say, "I know the power I have; I can either accept it or reject it." I know that many landlords who are the tenants in fee, not having the money, would be glad to see the thing carried out.

Then if you put a tenant for life in the same position as the tenant in fee, it would do all that you want?—That would not do it altogether; because, as it now stands, the landlord, who is the tenant in fee, would require to have some tribunal that he could know whether those improvements, for which he had received notice in writing to be done, were proper to be done.

Is not the landlord as competent to select proper parties as any tribunal you could propose?—Of course that might be the case; but I know there are large districts of country where the landlords are abroad, and it is not dealt with at all.

Would not the result of getting such a tribunal, with a power on the part of the landlord to impede its action by giving notice, be to lead to an extensive giving of notices to quit, and by that means prevent the tenant going on with both his improvements and his cultivation?—No, I think not; because the landlord would not feel it imperative upon him to turn out his tenant.

Then it would stop the improvement?—Of course it would.

Then would not the more simple mode be at once to

let the two men agree to carry it or not, as they liked?—I have pointed out instances, particularly under public bodies, and with tenants for life, where there is not the power of carrying it out.

Confine yourself to the case of the fee-simple, if you please; would not it be better in a case of fee-simple landlord that the tenant and landlord should agree without this expensive machinery being called in between them?—I do not think so.

Do you think that either landlords or tenants would be better pleased to refer the covenants of the holding to the tribunal you propose?—It would not be the covenant of holding.

It is a covenant; the landlord and the tenant have to refer the rent he is to pay to the Board of Guardians rather than settle it themselves?—It is not the rent, that has nothing at all to do with it; I am confining myself strictly to what I term permanent improvements upon the land and buildings.

Confining yourself then to permanent improvements, can you inform the committee whether, in your opinion, the landlord and the tenant could not better agree upon these permanent improvements between themselves, both having full power to deal with the question, than by going to a Board of Guardians or to any other tribunal to settle it between them?—Of course it might be done.

Do you not think, that in the ordinary transactions of life, men like better to make their own bargains than to have a public body to make the bargains between them?—Yes, I do; but I do consider the plan I have laid down will be the best; it may be termed a bargain or anything else; it is only to ascertain whether certain things are proper to be done, which things are stated in the notice, also the length of time those improvements are to be paid for, or that the improvements are to run off in a certain number of years.

Then if that tenancy determines, should the in-coming tenant or the landlord pay that?—It should be a first charge upon the land.

How would it be recoverable?—I would put them into possession of the land until it was paid.

Is the man who remains in possession of the land to cultivate it?—Yes; I should say he should retain the possession until the money was paid.

B. retaining possession of the land, is he to cultivate it?—I should have no objection to that.

To whom or to what tribunal is he to account if he is to cultivate the land?—The same as a mortgagee in possession.

The mortgagee accounts to the Court of Chancery, does he not?—Or the party he forecloses the mortgage with.

Is it desirable to give that remedy to the out-going tenant, that he should continue in the possession of the land and account to the Court of Chancery?—That question supposes an extreme case. I do not mean to say it is impossible that it can occur, because such a thing might occur, although I do not suppose it would; but I would give him precisely the same power as a mortgagee in possession.

That is, to account through the Court of Chancery?—I do not know how you account. That is not always necessary. In great numbers of cases the mortgagee forecloses and gets the money, and the thing is settled without going to the Court of Chancery at all. After this notice had been served, and it had been stated that those improvements were necessary, I would give to the party who had advanced this money precisely the same power as is given to a mortgagee in possession.

Would you give that in the first instance or in the last instance against the in-coming tenant?—Supposing the

land to be let, of course the in-coming tenant should pay it.

You would give it, in the first instance, against the in-coming tenant?—Yes; and supposing there to be no in-coming tenant, then the landlord; and if there were no landlord, then the land.

Then, in the first instance, the committee are to understand that there should be a lien upon the land; that you would take the in-coming tenant first, failing him the landlord, and failing him the land?—Yes.

Then upon what principle should the valuation be made; upon the principle of the capital expended, or the benefit to the in-coming tenant?—I would advise a plan that should be bound to state, in each particular, what is required to be done; supposing, for instance, I was chalking a particular field, that I should be bound to state the quantity of chalk that I intended to put on, and the price; that I should then state, if drainage was wanted, the quantity of drainage I intended to do; and, if it was the case of buildings, the quantity of building I intended to do; that that should be all vouched for and signed; and then, if you take the tribunal, the Board of Guardians, or whoever it may be, for those different outlays in chalking, building, and marling, and so on, those vouchers should be signed by the chairman of the Board, and that the charge should run off in a certain number of years; for chalking, say 10 years.

Then your opinion is that all those matters should be previously arranged?—Previously arranged before any outlay is attempted at all; it should be arranged and signed that it is to be done; and then, before it is finally signed, it is to be stated that it is actually done.

Then you would say, not only that the thing is to be done, but that the terms and conditions upon which it is to be done should be previously arranged?—Yes.

Will it be safe to leave it to be done at any indefinite time afterwards?—I should have the particular time stated.

In your judgment would it be safe, instead of ascertaining all this before it is done, to leave it to be settled at the end of seven or eight years, at the termination of the tenancy?—No; I should have the notice served, and have a certain time to commence the work; and then, when it was done, it would commence to run off.

Would it in your opinion be safe to let expensive improvements of this kind take place, the value to be paid for them to be ascertained only at the termination of the tenancy?—The value to be paid would be ascertained before.

Would it be safe to leave the value to be ascertained in your judgment at the end of the tenancy?—No, certainly not; what I contend for is this, that it would be very unfair for a tenant upon a farm to have the power of going on with what he considered or might call improvements, but which the next occupant might not consider to be so; therefore, either the landlord or the tenant should know precisely what amount he is to be liable for, and that when they are carried out he should know exactly the nature of those improvements.

You were asked whether in your judgment your plan would be a safe one, to leave it all to be ascertained and settled at the end of the tenancy?—No, I do not think it would; it would open a door for constant litigation and quarrelling; because, for instance, if the thing were not ascertained and settled the tenant might say, I have done this and the other, and nobody would know what he had done, because you could not get at it afterwards; it would be a very unfair plan of proceeding to allow a tenant to go on spending money, the landlord not knowing what he was being made liable for.

That would be so in your judgment?—Yes.

You have stated that you think that agricultural build-

ings should be put upon the same footing as trade buildings?—Yes, I do certainly.

That is, you would be satisfied with a power of removing the buildings on quitting the farm, unless the landlord thought it right to pay for them?—Yes, I would.

That would be just, in your opinion?—Yes, I think it would be nothing but fair; I have always had the opinion that it is very unfair as it is.

You have stated, with reference to the soil, what the custom is as to the clover lay; is there any difference made in that if it is mown or fed with sheep?—None whatever; they charge 50s. if it is fed with sheep, and they charge folding besides.

Then, in fact, it is not the same; there is an addition?—Of course they charge for penning.

With reference to the outlay that you have spoken of, as being necessary on the farms, do you not think that that may be partly owing to want of capital as well as to want of security?—I think it is owing to the want of security in general. It will often be found, that if the landlord has not the money, the tenant has; but then he feels that he has got no security; that is the difficulty that we require to have met, and particularly with the very large property I have spoken of there will be considerable distress arise.

Then it would be a great improvement, in your judgment, if agricultural buildings were put upon the same footing as trade buildings, and that persons having limited estates in land, of whatever nature, should have powers, the same as fee-simple landlords have, of giving reasonable security for improvements?—Yes; and I also think that this plan, if it could be adopted with respect to all, would be a very great improvement to the country at large; there is no question about that, I should say.

You think there would be no risk, if such a plan were to be enacted, of raising ill feeling between landlords and tenants, by its inducing landlords to give general notices to quit, in order to prevent the law being put in operation?—I think not; I should have no sort of objection to send to this committee a form, which I have in my own mind, of the manner in which it should be done.

MR. NEWBEGATE.] With reference to Middlesex, you have stated that a case has occurred in which a property is to be sold, and a tenant is likely to lose his capital?—Yes.

And to secure parties so situated, you would in such cases refer the compensation between the landlord and tenant to a tribunal?—Yes, I would.

And you state that that is justified by its being so great an object to have the land improved?—Yes. This was not in Middlesex; it was an estate in another county.

You are aware that in Middlesex there is a great quantity of building land?—Yes.

You are also aware that there is very great want of accommodation for the poor of this metropolis?—Yes, very great.

Would not it be fair to apply the principle of referring that case to a tribunal, namely, the possession of certain lands, and the desirability of building upon them for the accommodation of the poor; and if it were just to compel the landlord either to improve his farm or to pay compensation for improvements, would not it be just, in the case of this building land, either to compel the owner of it to build, or to compensate the builder for providing for the poor?—No, I think you could not carry that out; I quite agree with the question, so far as the abstract principles goes, that houses for the poor are very necessary in the metropolis; but that is not a case in point, that you shall refer to a tribunal the propriety of land being given up for the erection of those houses.

How do you justify the referring of improvement of agricultural land to any tribunal?—Take a party in pos-

session of the land, for instance; I will suppose a case; suppose a party in possession of a farm, and he sees that he could make much more of that farm if he had security for the money that he was going to expend. He says, "I cannot get it done; in the first place, my landlord is one of the best of men, but has no money; I have the money; and if I had the means of applying that money to the land I should be a richer man, and the poor would be employed, and my landlord would be no worse off."

Take the case of Lord's Cricket Ground; supposing the lessee of Lord's Cricket Ground in possession to make up his mind that it would be a great improvement that the property should be built upon for the accommodation of the poor; would it be just to refer that case to any tribunal which should have the power of deciding whether it were desirable that Lord's Cricket Ground should be built upon or not, and thereby bind the discretion of the owner of the property as to its application?—I do not think it is a case in point.

Where do you see any difference. You stated that the parties in the case of the farming land are in occupation?—Yes.

And the holder of Lord's Cricket Ground is in occupation?—Yes.

There is no more urgent necessity than for housing the poor of this metropolis. If it is just to compel the landlord by some tribunal to consent to improvements and to incur liability for that purpose, how can it be unjust to compel the owner of Lord's Cricket Ground to compensate his tenant if it is decided by some such tribunal that buildings ought to be there built for the accommodation of the poor?—I do not consider that a similar case.

Wherein lies the difference?—The owner of Lord's Cricket Ground might not choose to have the whole of the poor of London brought there. He would have the power, under my plan, of saying to the occupier of Lord's Cricket Ground, "You shall quit; I will not agree to that."

Then, except the liability which the property might incur as to the additional rating, you do not see any difference between the cases?—Yes, I do, a very great difference; but I say, supposing you do take the case, even then the owner of Lord's Cricket Ground could say: "Why I do not choose to have the whole of the poor sent here, and therefore I shall give you, Mr. Lord, notice to quit." I am supposing my plan to be carried out; then it would meet the difficulty supposed.

In that case, except the liability to rating, the justice in the case of Lord's Cricket Ground would be as equal as in the case of a farm?—I would say yes, because the owner of Lord's Cricket Ground could say "No;" when Mr. Lord gave notice to the landlord of his intention to do that, he would have the power of saying, "I will not have the poor of the metropolis there, and you must go away."

You have no objection to constituting a tribunal?—There must be a notice given under my plan.

And then you would see no injustice in constituting a tribunal?—Supposing the tenant and the landlord both agreed.

To take the case of the poor; you must be aware that in many of the farms of England there is great difficulty arising from the labourers being so far distant from their work!—Yes, it is a very great misfortune.

Would you give power to the tenants to build cottages upon land they held upon lease to house those labourers?—I think such would be a very beneficial measure.

And to put the compensation for that outlay upon the same terms as compensation for other improvements?—I should be happy to see it done.

And you would refer it to this tribunal?—I see no

objection to that; it is a very excellent suggestion; I think that is the very first improvement that should be carried out in agricultural districts, providing good cottages for the poor, with certain portions of ground between them.

Then that would complete the analogy between the cases of Lord's Cricket Ground and the farm, so far as the principle is concerned?—Yes; I think that good cottages are very desirable; and I think it very desirable that every poor man should have a portion of land.

That completes the analogy between the two cases upon the principle?—Yes.

Do you think that the system of arbitration for the decision of cases arising under customs does not work well in Lincolnshire at present?—I think it works very well; I have never found it work otherwise.

Is not that system preferable to a constitution of a tribunal of any kind, for the purpose of judging between the parties?—But then I am speaking of those counties where it does not exist. I am willing to admit that Lincolnshire is an exception to the general rule.

Would you have any objection to extending the practice of Lincolnshire, with reference to arbitration, to the counties where customs do not exist?—With respect to tenant-right altogether?

With respect to the establishment of any system that shall have the effect of tenant-right?—You could not apply the Lincolnshire system to other counties, except you applied the same tenant-right; different counties require different management.

Why could not you apply the same system of arbitration for the decision of tenant-right in any other county?—So we do; it is left to two parties to decide.

Take Surrey, for instance; is not there a system there?—Yes.

Do you find any objection to the working of that system?—No, I do not.

Is not that system better than constituting a tribunal for the purpose?—If the tribunal that I now speak of does not meet the difficulties about which I am now speaking, it might be differently constituted. Supposing, for instance, the tenant for life dies, and the tenant has expended a large sum of money upon the land, there is no tribunal in existence to repay the man the money.

The question had reference to a tribunal assessing compensation on the one hand and dilapidations on the other hand, as between the out-going tenant and the landlord, or the in-coming tenant, as the case may be; wherein does the system of arbitration fail in the county of Surrey?—You could not get compensation for drainage.

Is that owing to the arbitrators not having drainage referred to them, or because they are incompetent to judge of that improvement?—Because drainage is not an act of husbandry in Surrey.

It is not the fault of the arbitrator, but of the custom?—Yes; and the want of greater security for tenant-right.

You are of opinion that in other counties the same system would not operate if the custom was established?—You cannot apply one particular custom to every county.

The same system of arbitration. Supposing you have established a custom in Surrey and Middlesex, why should not the same system of arbitration answer in Middlesex that answers in Surrey?—It would.

And if you were to extend a good custom, say a custom similar to that of Lincolnshire, or that which is most applicable to the different parts of the country throughout England, would not the system of arbitration suffice in all those cases?—Yes, but there are places as I have stated, where there is no law at present to get it done; both parties are willing that it should be done, but they have not the means of doing it.

Supposing that throughout England a custom was established such as that existing in Lincolnshire?—Then there would be law.

Supposing that to be the case, where would be the difficulty in having compensation under it decided by arbitration?—I think, with respect to what has been said, that the difficulty would be in referring to arbitration, after the farm is let, the whole of the improvements I am speaking of; it might open the door to a great deal of quarrelling.

Does that difficulty arise in Lincolnshire?—No, it does not.

Why should it arise in other places?—Because taking the tenant-right of Lincolnshire, it is a good deal of it dry land on the Wolds, and you can ascertain it better, and the buildings are frequently done by the landlord; but I am taking the other parts of the country where it is draining and fencing that is required, and building which I am now speaking of; because in Lincolnshire the buildings are done by the landlords in many instances, and by the tenant too.

Are you aware that the wolds and heath do not form above one-third of the county of Lincolnshire, and that the remainder is flat land, needing drainage?—A great deal of the land that is not on the wolds does not need drainage.

You are not aware that drainage has been practised there extensively?—I know nearly every parish in Lincolnshire.

Do you know the district extending from Gainsborough on the one side, to Horncastle on the other?—Yes.

And bounded by wolds on the one side, and heath on the other?—Yes, a very wide district.

Do you know that that has been extensively drained under the custom?—Yes, by the landlord finding the tiles: I have known myself, in Lincolnshire, where difficulties have occurred from the want of the means which I have stated.

Would you then, in Lincolnshire, supersede the practice of referring questions of difference under the custom to the arbitrator?—No, I would not interfere in that; but the plan that I am suggesting would refer particularly to this estate that I spoke of, which was in Lincolnshire, where the lady was old and could not do any thing because she had a life interest. I will take Lincolnshire itself; that was the very place where the tenant could not improve the land.

That is not the point that the question referred to; the question was referring to this: you have admitted that all the wet district in Lincolnshire, has more or less drained, and compensation has been recovered under the custom?—Yes.

You state that the circumstances that have arisen under that custom have been referred to arbitration; that they have been decided satisfactorily to both parties, and you are now asked whether you would break up that system of arbitration in Lincolnshire?—No; and nothing that I have said to-day is at all wishing to break up the custom that is there established: but what I contend for is, that in Lincolnshire the custom does not go so far as what I am now speaking of; I am supposing a tenant for life, or a tenant under public bodies.

You mean, it does not go to the laws of real property?—No.

You have stated that the system and custom on reference to arbitration works well in Lincolnshire, and you would not disturb it. The question then is, if customs extended throughout the whole of the country, whether the system of arbitration could not operate as well throughout the country as in Lincolnshire?—You must

understand that what is custom in one county is not custom in another.

Supposing the custom established?—Then it is a law if it is the universal custom.

And if it were the universal custom, and therefore, as you say, the law, what objection have you to the system of arbitration that prevails in Lincolnshire?—It does not go far enough; it does not always meet the difficulty.

Your objection is not in any failure of the system so far as it exists in Lincolnshire; but that you think it does not go far enough?—Yes.

Mr. HENLEY.] Do you know when the origin of the custom of Surrey was?—No, I once had to take a farm in Surrey, and I know it required a very expensive outlay.

CHAIRMAN.] The payments in Surrey are not for acts of improvement?—No; acts of husbandry.

You have been asked about the power of fee-simple landlords and tenants to make agreements for themselves: are you aware whether a fee-simple landlord whose property is mortgaged has the power of making an agreement if he is not supported by the custom of the country?—I think he could if he was in the possession.

It being in evidence before this Committee, by a barrister, that he could not do so without the consent of the mortgagee, are you prepared to give an opinion adverse to that legal opinion?—I should say that it

would depend very much upon what the terms of that mortgage were; if the mortgagee had the power of entering into possession, and if he should not enter into any agreement, he could not do it.

Generally speaking, you are of opinion that land is tied up by family settlement, or by church holding, or encumbered by mortgages?—Yes.

Do you think that the land that really is held in fee-simple without any incumbrance whatever is a very small portion of the land of the country?—Very small.

And very inconsiderable?—Very inconsiderable.

You have been asked about the building of cottages; is it your opinion that it is advantageous to tenants to have a few cottages for some of their labourers immediately contiguous to their farm-houses?—Certainly.

And is it also an advantage to the labourers themselves?—Yes, certainly.

Is it a disadvantage to the farmer to have non-resident carters and shepherds who have to come some miles to work?—It is a decided disadvantage.

Would it, then, be advantageous in any act of legislation to give power to tenants, with the consent of landlords, to put up dwellings for some of their labourers?—Yes.

You think it would be decidedly advantageous to the farmer and to the labourers?—Yes.

Mr. COLVILLE.] Would that be an advantageous measure without national settlement?—I am in favour of national poor-rate, and national settlement too.

(To be continued.)

SHEEP BREEDING.

In reading the discussion held at the London Farmers' Club, Nov. 6, 1848, I saw with mixed pleasure and pain, the lecture delivered by Mr. Cherry on Pleuro Pneumonia. There was much in the lecture to interest me; but it was lowered in my estimation by observations perhaps rather loosely considered and expressed. I have neither leisure nor inclination to enter into controversy with Mr. Cherry: I am but a plain farmer, unaccustomed to letter writing, but generally endeavour to speak to the point, and not easily persuaded that hints or unsupported assertions, even when clothed in good language, constitute the whole of an argument. With every respect for Mr. Cherry's great attainments, I confess I am not yet persuaded of the soundness of some of his expressions, and beg leave to review what he has advanced. He informs us that much of the matter he had previously intended for us at the Club he has since employed in other ways. I am sorry he has prematurely used up the best of his arguments. I am quite willing Mr. Cherry should prefer calling this disease epidemic, endemic if he pleases, and state it as of political consequences to the community, for it really is so. After a lengthy address, he cautions us against trusting to curative agency as fallacious, but rather to seek for the preventives in a new direction; and here all ambiguity should have ended. Mr. Cherry asks, has breed anything to do with it? To be sure it has; and he seems to have some faint glimmer on the subject, for he says—"It is true that our highest breeds have been most free from the disease;" and here the lecturer finally broke down,

and unwisely falls foul of what he evidently knows but little about, viz., in-and-in breeding; for if the highest bred animals are freest from disease, it follows that in-and-in animals, which is the acme of all high breeding, must necessarily surpass all others in health and stamina; and facts fully bear me out. As to his opinion that in-and-in brute creatures is repugnant to nature, it is an assertion as feebly sustained as it was rashly made.

It is a high sense of moral decorum, and the delicacy of civilized society, that keep human relationship generally in its proper channels. He adds that "if we look at things as they are, we shall scarcely ever find animals of the same family procreating together." I grieve that Mr. Cherry has said it: for the robin, the cat, the hare, the partridge, and all uninstructed nature, flatly deny his proposition; and he himself doubts the soundness of his own doctrine, for he presently informs us that into the question of "in-and-in, he will not now enter:" had he been discreetly silent, he might have concealed his lack of knowledge. He exhorts us that "by care and attention, by selecting animals of the best form and healthiest character," we shall get along. This is precisely what in-and-in breeders study and practise. Can the everlasting crossers say so, whose flocks have not character at all? But oh! we are also to "avoid as much as possible breeding in-and-in." Really, when I tell him what I have done, unaided by his advice, I must ask him why need I avoid in-and-in, &c. I am an incorrigible in-and-in breeder in my sheep flock, which has been bred strictly on that principle for sixty years; and I

have never had any interchange of ram or ewe for thirty-seven years, and I have been free from this and all other diseases in a very eminent degree. Is this, I ask, any palliation for in-and-in breeding? May I ask also what on earth has in-and-in to do with small pox? Mr. Cherry informs us that the yearly casualties of sheep and lambs in England is 200,000, and asks, did nature do this? No, nature is not such a noodle; this "heavy blow and great discouragement" to profitable sheep breeding is purely of human invention. I believe that out of the 200,000 sheep destroyed by parturition, at least 150,000 are lost from malformation of the female pelvis and the great malformed head of the lambs, and not from the clumsiness of the shepherd; and it is to be regretted that Mr. Cherry has not better informed us on these very

important subjects; and permit me to say, I have been a shepherd for 50 years, and have gone through the last 15 years without losing a single ewe from lambing, out of nearly 3,000; and my men generally have been quite young men, but of practical knowledge, and that knowledge acquired from the book of nature, which I teach them to read; and if breeders of stock would consult the laws of nature a little more than they do, and confine those animals which are to propagate their species to natural food, we should hear less of diseases, and less of pleuro pneumonia; and this is the best answer I can offer to Mr. Cherry's voluntary attack on a system he does not understand.

I am Sir, yours &c.,
VALENTINE BARFORD.

Foscote, near Towcester.

ON THE COMPARATIVE MERITS OF CORN, &c., AND OIL CAKE, IN FEEDING CATTLE AND SHEEP, &c.

MR. EDITOR,—I hope you will permit me, through your impartial and long-established paper, to address a few lines upon this subject to the highly respectable body of men in question, feeling it is one worthy of their most mature consideration, and hoping I may make a few remarks which will induce some of them to test it to their own satisfaction, and that of the public. Sir, in these times of *open ports*, free trade, and the depressed state of our markets, it surely is most desirable to use the produce of our own soil in every possible way; for we have proved beyond a doubt, that whatever the foreigner may bring into this country, he wishes to take nothing back but our money; and my object is to prove the general advantage of using barley and other meal over oil cake, for the above purpose. The price of cake is now about £10 per ton, delivered at home in this district; a very long price, especially as it is so liable to be adulterated in the manufacture, and the risk you run of getting a spurious article—and it is 15d. per stone. Barley meal is about 11½d. per stone; so that upon this calculation you may give a beast at least one-fifth more meal than you can of cake, at the same cost; and I have yet to learn that a beast will not thrive as much upon even the same quantity of the former as the latter; and if so, the saving in the first instance is sufficiently obvious. But there are still further advantages; it mixes so well with the *grains*, *cut hay*, or *straw*, so that you may use anything with it, which is too inferior for cattle to eat without it: a more extended consumption of it must inevitably help to keep up the price of corn, for there is too much reason to fear that the price of wheat, in a general way, will not exceed the price which cake is at now, so that I believe any meal will be fully as cheap as cake. If this is the case, how preposterous it seems to employ your team in fetching home cake and taking corn to market, when you can send a portion of it on the backs of your cattle, in the shape of beef, leaving a balance in your pocket which would have gone into that of the cake crushers if you had consumed the same weight of that article, besides having raised the value of

the corn you sell considerably, by taking a portion out of the regular course of consumption. I believe, too, the beef would be much less oily and more wholesome, fed upon meal; and if anything is used with it, should greatly prefer a portion of linseed, which I have no doubt we can grow in our own country; we should then be, as far as the feeding of cattle is concerned, independent of the foreigner, and the adulterations which are so extensively carried on in the process of making cake. I have arrived at the conclusion that the cake crushers are a class of men we can dispense with without loss to the public. All farmers might very advantageously get a quantity of corn for their cattle by winnowing it an extra time over; by so doing they would greatly improve the quality of the bulk for the miller or maltster, and get a better price for it. I am also of opinion that corn meal, beans, or peas, &c., may be used for sheep, instead of cake, with advantage to the flockmaster. I cannot think, where half a pound or even a pound of cake per day is given to each sheep in *large lots*, they can get it at all equally: the sheep which puts its head in the trough first gets more than its share, and the one which puts its head in last, little or none. I, therefore, think corn or meal, &c., mixed with chaff, or malt comb, is much better for this purpose than cake.

Now I am upon this subject I will say a few words upon the present hateful and universal practice of feeding rams with cake, or any artificial food, so fat that they become perfectly useless for the purpose nature has intended them; and if I speak rather strongly upon it, I hope the ram breeders will excuse me, but I sincerely wish this crime, for I can call it by no other name, was made felony. It is a most grievous evil to the public. If a ram will not get sufficiently fat upon vegetable food only, so that you may judge of his quality, &c., he is not fit to be kept as one; and if all breeders would pursue this rational mode of feeding, they would have an equal chance in showing, and letting their sheep have much less loss among them, and give infinitely more satisfaction to their customers.

I hope I have said enough to induce some intelligent and practical men to try these experiments fairly, and I have no doubt in my mind but the result will be that a beast will fatten quite as well upon the same weight of meal, &c., as cake, the latter having the same advantage with the former as to any auxiliary which may be used with it. I shall hope to see some mention made of the matter in your paper, for I am very strongly impressed with the importance of it to the country at large, and believe me

Your obedient servant,

A FARMER AND GRAZIER.

--Leicester Journal.

GUANO, OIL-CAKE, AND LINSEED.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—As a constant reader of your magazine, I beg to thank you for the insertion of the fraudulent case this month, one of many which exist in the sale of so-called guano. These spurious representations are not only manufactured in Manchester, Liverpool, and other large towns, but even the other side of the water, by those who know best what to introduce having weight, and being least discernible to the sight.

Guano, your readers are all aware, is said to be the excrement or deposit of birds. How long or in what quantities is this deposit to be found, without adulteration, while hundreds of thousands of tons are required annually? Some may entertain an idea that genuine guano is as *exhaustless* as coals in the bowels of the earth, enough for thousands of years to come; those who so think, think amiss; and those who never thought at all I particularly address; in truth, multitudes generally rush and act together in popular matters until the turn takes place, when on comes a retrograde movement: therefore *caution* is *commendable*; and it becomes the agricultural community, not only to suspect *guano*, but also oil-cake, manufactured in many cases by those who know best what to introduce with the husk of seed. That which is weighty and least detectable, such as *Fuller's earth*, with the refuse of other seeds, is well known to exist in a good deal of foreign cake; and can the general farmer detect it? and if so, would not the expense and trouble amount to this—making the remedy as bad as the disease? I admit the farmer cannot afford to become the dupe of these impositions, growing to such an extent in these two articles. English cake is not altogether without alloy: bad, unsaleable foreign cake is remanufactured, frequently, into English.

Now in order to check the liability to these impositions, surely it is time to think if we cannot in the genuine article of linseed obtain a rich fattening

food, and so use it to the best possible account: there are some I can speak to who have done so, and are perfectly satisfied. The result of trial leads them to conclude they must breed more, rear more, and fat more; to do so they are resolved to cut up into chaff all the straw, stover, and hay they can possibly spare, and use linseed meal: moist, boiled, or steamed roots should be cut small, so as to well mix up with dry food. A sprinkling of fine-ground linseed may be given with good advantage, not only to the relish of the stock, but also with a certainty of having a good manure, containing a considerable quantity of *phosphate*; more hands would be employed; and we should be less subject to contamination from foreign stock, by those diseases that in a great measure arise from over driving, and transition from heat to cold, consequent thereon, with the varied lodgment unsuited to promote health in animals; and I feel sure the time is coming when free trade will compel the English farmer to prepare for low prices both in horn and corn.—I beg to subscribe myself, your obedient servant,

A MEMBER OF AGRICULTURAL SOCIETIES.

ON CARBONIC ACID.

There are few questions connected with vegetable physiology which have been more keenly debated among scientific men, than the part which carbonic acid takes in vegetation. Our attention has just been directed (Dr. Davy, in Silliman's American Journal) to a property of this acid, which, though doubtless important, has hitherto not received the attention it deserves. We were rather surprised at some of the experiments which Dr. Davy appears to have tried for the purpose of discovering the *solvent* power of carbonic acid, as they seem to betray a somewhat poorer knowledge of chemistry than we gave him credit for; a perusal of his paper will bear out the assertion.

Whilst it is disputed whether the carbonic acid which is abundantly formed in the soil, takes any part in supplying carbon to plants, there can be no doubt but that it must exercise a powerful chemical or (as we have already named it) a solvent effect upon the mineral substances present in the soil. It is to this property that we would direct attention.

1st. *On phosphate of lime*.—This, when applied as bone earth, is insoluble in water; but the carbonic acid formed by decaying vegetable matter acts upon it in precisely a similar manner that sulphuric acid does, when used for preparing super-phosphate of lime. It has recently been recommended to mix bones with wood-shavings and saw-dust, as a more economical plan than with sulphuric acid. There

is no doubt but that the super-phosphate of lime will be formed; but the operation will require a very long time, and must be very carefully attended to, if it is to be as well done as with the sulphuric acid. It must be obvious that when bones are mixed with burnt ashes, as has also been recommended, the only change that can take place will be the decomposition of the animal part of the bones, and the absorption of the ammonia thus formed; if the bones have been burnt or boiled, no change whatever can take place, *as the ashes can supply no carbonic acid.*

2nd. Besides the phosphoric acid, we must have potash and soda for perfect vegetation. These alkalies exist in the land, and in farm-yard manure, principally as silicates, or compounds of silicic acid. In this state they are, like the phosphates, insoluble in water. Carbonic acid, however, by a slow and sure action, decomposes these silicates, and presents the soda and potash in a soluble state. At the same time that it presents another equally important part of the plant in a soluble form, namely—

3rd. The silicates, without which the straw of beans, peas, oats, or wheat cannot be formed. Silicic acid exists in a state of purity in quartz, or the best sea sand; there has as yet only been one substance discovered which can dissolve it, and yet by the action of carbonic acid on the silicates of the soil, it is furnished in great abundance to our cereal crops.

4th. Lime exists in the soil both as a silicate and carbonate: the former, like the silicates of the alkalies, is decomposed, and the latter is dissolved, in water containing carbonic acid.

There can, therefore, be little doubt but that plants are indebted to the solvent and chemical action of carbonic acid for the phosphoric acid, soda, potash, silica, and lime, they require to produce a healthy and vigorous vegetation.

A special meeting of the members of the Harleston Farmers' Club was held on Wednesday, for the purpose of considering the subject of insurance of cattle against pleuro pneumonia, at which a great number of the members attended. The chair was occupied by G. Durrant, Esq. Mr. Shaw, the chairman of the Farmers' and Graziers' Cattle Insurance Association, attended the meeting, accompanied by Mr. Ford, and gave a full explanation of the principles upon which the association was established, and the mode in which the business was conducted. A lengthened and interesting discussion took place, during which the speakers related the fatal effects of the disease, as well in their own cases individually as amongst their neighbours. The losses were generally estimated as amounting

to five per cent. from pleuro pneumonia alone. An earnest desire to support the association was evinced and warmly expressed. At the close of the discussion the following resolution, proposed by Mr. Frener, and seconded by Mr. Spillman, was adopted unanimously.

RESOLUTION,—“It is the opinion of the Harleston Farmers' Club that, as relates to the system of insurance for pleuro pneumonia in cattle, it would be advisable to obtain a more immediate insurance of stock, having regard to a sufficient time for due inspection of the same; at the same time it would be only fair and just that *all* the cattle upon a farm should be insured, and that bought cattle, as well as where the disease has already appeared, should be insured at increased rates.”

We are authorized to state that the Earl of Leicester has given permission to have his name added to the list of Patrons of the Farmers' and Graziers' Cattle Insurance Association, amongst whom will be found the following noblemen:—

HIS GRACE THE DUKE OF RICHMOND
THE RIGHT HON. EARL OF WESTMORELAND
THE RIGHT HON. VISCOUNT TORRINGTON
THE RIGHT HON. EARL HOWE
THE RIGHT HON. VISCOUNT WELLESLEY
THE RIGHT HON. LORD KENYON
THE RIGHT HON. LORD ABERCROMBIE
THE RIGHT HON. LORD BEAULIERK
THE RIGHT HON. LORD LOVAINE
THE RIGHT HON. LORD OSSULSTON, M.P., &c., &c.

LONDON FARMERS' CLUB.

MONDAY, JANUARY 1ST.

MONTHLY MEETING OF THE COMMITTEE OF MANAGEMENT.

Present: Messrs. J. Beadel, W. Fisher Hobbs, J. J. Mechi, J. C. Nesbit, and T. Owen. W. Fisher Hobbs, Esq., in the chair.

The Minutes of the last Committee Meeting were read, confirmed, and signed by the Chairman of this day.

The Minutes of the General Annual Meeting were also read.

The following gentlemen were elected Members of the Club:—

F. King, Oxford
H. Kirk, St. James's Square
F. J. Simpson, Cannon Park Farm, Edgware.

The names of six other gentlemen proposed as Members were read for the first time.

The following gentlemen were appointed the House Committee for the year:—E. Aitcheson, J. Beadel, W. Fisher Hobbs, T. Knight, and W. Shaw.

The following subjects were selected for discussion during the year:—

February 5: “On the Burdens pressing upon Agriculture, especially in reference to the Malt Tax.”—Proposed by Mr. S. Cheetham, of Oakham, Rutland.

March 5: “What is the most efficient, beneficial, and econo-

- micel mode of providing Manure for a Farm?"—Proposed by Mr. C. Lawrence, of Cirencester.
- April 2: "On deep Cultivation, by the Plough, the Spade, and the Fork."—Proposed by Mr. J. J. Mechi, of Tiptree Hall, Essex.
- May 7: "On the most beneficial means of providing Employment for the Agricultural Labourer."—Proposed by Mr. W. Shaw, of the Strand.
- June 4: "On the uses of Machinery as applied to Agriculture, and the advantages that would follow from its more general adoption."—Proposed by Mr. James Thomas, of Liddington Park, Beds.
- November 5: "On the improvement and cultivation of Bogs and Peaty Soils."—Proposed by Mr. W. Bullock Webster, of Hounslow, Southampton.
- December 5: "Upon Farm Leases, particularly in reference to the Cropping and Cultivation of Land."—Proposed by Mr. J. Beadell, of Bromfield Lodge, Chelmsford.
- The Discussions will commence at Half-past Five o'clock P.M.

There will be no Meetings for Discussion in July, August, September, or October.

REVIEW.

COTTAGE ARCHITECTURE.

By H. WEAVER, Architect and Estate Agent, Bevisbrook House, Calne, Wilts.

London: J. Ridgway, Piccadilly; Henry Pope, Budget-row.

It has never been our lot to review a work better calculated to improve the personal comforts as well as the moral and social condition of the labouring classes of England than Mr. Weaver's work on "Cottage Architecture." The object of the work is, as expressed by the author in his preface, "to promote the improvement of the home accommodations of the poorer populations in rural districts, &c., &c." That such an improvement is necessary, all who in travelling through the country and direct attention to the subject will be compelled to admit—That the peasant after his day of toil retires to a hut in many instances not superior to those occupied by the peasantry on the other side of the channel, and that, regardless of sex or decency, the inmates are huddled together in the sleeping apartments is too well known.

To remedy this and other evils Mr. Weaver has published this excellent volume, beautifully illustrated with plates and plans of superior neatness of execution. Attached to them are "introductory notes," containing "estimates" and "schedule of materials." The first plate is that of a single cottage, "an appropriate dwelling for a keeper or superior servant;" and attached thereto we have the plans and elevations, the description of work as regards doors, windows, cottage range; *wash-house, covering*; and estimate. Plate 2 is a design for a pair of labourers' cottages, with similar directions and estimate. The work contains nine plates, with plans and description. The last plate is intended to represent the great difference, both as regards internal comfort and convenience as well as external effect, which may be obtained by

a comparatively slight alteration of a row of three old cottages, at present most inadequate to the necessary requirements of a family. Mr. Weaver illustrates this fact to admiration, that out of those three old cottages, which contained neither wash-house nor backdoor, and only one bedroom each, two cottages will be provided, each containing a wash-house &c., three sleeping rooms to one, and two to the other. Where groups of old cottages can, by trifling expense and slight alteration, be converted into comfortable dwelling houses, it will be a great inducement to the owners of such cottages to adopt the improvements suggested. We earnestly recommend all persons who contemplate the erection of new cottages, or who wish to improve old ones, to obtain Mr. Weaver's book of plans.

TITHE COMMUTATION.

TO THE EDITOR OF THE MORNING HERALD.

SIR,—As your agricultural as well as clerical readers may feel anxious to know the result of the averages for the seven years to Christmas last, which has been published in the *London Gazette* of Jan. 5, 1849, viz., —

Wheat	6s. 10½d.	per imperial bushel.
Barley	4s. 1¼d.	"
Oats	2s. 8¾d.	"

I beg to state, for their information, that each £100 of rent-charge will, for the year 1849, amount to £100 3s. 7¾d., or nearly 2 per cent. lower than the previous year.

The following statement, from my "Annual Tithe Commutation Tables," will show the value of £100 of rent-charge for each year since the passing of the Tithe Commutation Act, viz: —

For the year 1837	98 13 9¾
" 1838	97 7 9
" 1839	95 7 9
" 1840	98 15 9½
" 1841	102 12 5½
" 1842	105 8 2¾
" 1843	105 12 2¼
" 1844	104 3 5¼
" 1845	103 17 11¼
" 1846	102 17 8¾
" 1847	99 18 10¼
" 1848	102 1 0
" 1849	100 3 7¾
	13) 1317 0 8¾

General average for the last 13 years. . £101 6 2½

I am, sir, yours obediently,
CHARLES M. WILlich.

25, Suffolk-street, Pall-mall, Jan. 5, 1849.

HEREFORD FARMERS' CLUB.—SUBJECTS FOR DISCUSSION IN 1849.—Feb. 24th.—What would be the most profitable crop to produce, and if such crop could be grown consecutively to advantage by a proper application of manure. May 26.—The best system of consuming green crops, and the most beneficial and economical mode to provide manure for a farm. Aug. 25.—Whether flax can be profitably cultivated in the county of Hereford. Nov. 24.—The present custom of outgoing and incoming tenants in the county of Hereford.

METEOROLOGICAL DIARY—1848-9.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.		
Day.	s a.m.	10p.m.	Min.	Max.	10p.m.	Direction.	Force.	s a.m.	2 p. m.	10 p. m.
Dec. 22	30.30	30.33	28	39	29	E. by North	lively	fine	sun	fine
23	30.33	30.22	26	32	24	E. by South	variable	fine	sun	fine
24	30.10	29.84	24	35	32	S. by East	lively	fine	fine	cloudy
25	29.80	30.02	32	45	41	Southerly	gentle	cloudy	cloudy	fine
26	30.02	30.—	41	48	48	S. by West	lively	cloudy	cloudy	cloudy
27	30.09	30.09	44	50	43	W.S.W.	gentle	fine	sun	cloudy
28	29.90	30.14	41	45	41	N. E., Westerly	lively	cloudy	cloudy	cloudy
29	30.17	30.17	40	44	41	N. by East	calm	hazy	hazy	hazy
30	30.16	30.10	39	44	36	N. East	gentle	cloudy	cloudy	cloudy
31	30.10	30.10	34	38	36	N. East	gentle	cloudy	cloudy	cloudy
Jan. 1	30.11	30.15	33	38	30	Easterly	brisk	cloudy	cloudy	fine
2	30.12	29.44	24	30	25	E., E. by N.	lively	fine	sun	fine
3	29.72	29.68	25	31	30	Easterly	lively	fine	sun	cloudy
4	29.67	29.74	31	33	31	E. by South	gentle	cloudy	cloudy	cloudy
5	29.75	29.84	32	33	32	East	gentle	cloudy	cloudy	cloudy
6	29.94	30.—	32	33	28	E. N. E.	gentle	fine	sun	fine
7	30.—	29.90	29	34	34	E. by S., S. by W.	calm	cloudy	cloudy	cloudy
8	29.56	29.55	33	37	36	S., S. by East	variable	cloudy	cloudy	cloudy
9	29.43	29.46	36	43	37	W., W. by N.	gentle	fine	sun	cloudy
10	29.15	29.10	37	47	44	W. by N.	strong	cloudy	cloudy	cloudy
11	29.17	29.90	36	38	35	North	strong	cloudy	cloudy	cloudy
12	30.13	29.94	31	40	40	Southerly	brisk	cloudy	cloudy	cloudy
13	29.77	29.63	39	51	51	W. by S., var.	brisk	cloudy	cloudy	cloudy
14	29.50	29.80	49	53	40	W. by S., by N.	strong	cloudy	cloudy	fine
15	30.05	29.99	37	43	40	S. West	lively	fine	sun	fine
16	29.95	29.70	37	49	48	South	gentle	cloudy	cloudy	cloudy
17	29.70	29.94	45	51	45	S. West	lively	cloudy	cloudy	fine
18	30.—	29.97	43	48	43	S. West	lively	fine	cloudy	cloudy
19	29.94	29.99	46	53	49	S. West	lively	cloudy	cloudy	cloudy
20	30.08	30.24	46	50	46	S. West	gentle	cloudy	cloudy	cloudy

ESTIMATED AVERAGES OF JANUARY.

Barometer.		Thermometer.		
High.	Low.	High.	Low.	Mean.
30.77	28.90	52	11	36.1

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Highest.	Lowest.	Mean.
42.5	35.66	40.08

WEATHER AND PHENOMENA.

Dec. 22—Perfectly fine. 23—Some clouds; chilly. 24—Some sun; a change at hand. 25—Wind; thaw. 26—Overcast; small rain. 27—Fine, warm, rainy evening. 28—Rain, with easterly wind. 29—Hazy throughout. 30, 31—Cold; and dark weather.

LUNATION.—New moon 26th day, at 4h. 22m. afternoon.

Jan. 1, 1849—Overcast; penetrating wind. 2, 3—Sharply frosty, sunny days. 4—Drizzle; very gloomy. 5—Snow, late in the evening; after cold and cheerless rain. 6—Snow; a slight fall over night; fine sun. 7—Gradual thaw; ending in

rain. 8—Snow gone; wind and rain. 9—Fine till four; cirro-stratus, grey clouds; wet evening. 10—Brisk drying air; overcast. 11—The same; immense rise of the barometer. 12—Frost for a few hours. 13—Overcast; damp; windy. 14—Showery. 15—Cool; changeable; brilliant night. 16—Gloomy, drizzling day. 17—Small rain; a shower; fine evening. 18—Finer; becoming changeable. 19—Lively air; pretty fine.

LUNATIONS.—First quarter, Jan. 2nd, 7h. 38m. morning. Full moon, 8th day, 10h. 50m. night. Last quarter, 16th day, 6h. 54m. morning.

REMARKS REFERRING TO AGRICULTURE.—

Two or three slight frosts, of scarcely three days' duration; an inch or two of snow have occurred; and form the winter of the above period. Rain, clouds, and gloom, occupy the remainder of the term. The ground is wet, but the crops are looking well. Little advance has been made in the wheat plants. Kohl and the turnips hold on in great abundance, and food is plentiful; the verdure of the means remains unimpaired. J. TOWERS.

Croydon.

CALENDAR OF HORTICULTURE.—FEBRUARY.

The season advances, and already we arrive at the second month of the year; about the middle of which introduces the horticultural "Spring." Astronomers take a different view, they being guided by the four equal divisions of the ecliptic circle; but the gardener is practically made aware that the period of vegetable torpor is strictly confined between the middle of November and the 15th of February, as its extreme limits. Nature, it is true, is in a state of revival at the present moment—a fact which is established by the swelling of many buds and the advance of bulbous plants; still, however, the absence, presence, or degree and power of frost, and direct solar light, must produce corresponding effects. I therefore have adopted the line of demarcation above described as sufficiently definite. As yet, we have experienced a few transitory frosts, with a very shallow fall of snow; but the temperature the past two months (15th November to 15th January) has been above its admitted average—that is to say, so far as the 52nd degree of north latitude across the entire kingdom. And here apology is claimed for an oversight which, in common with others, we have committed. Garden calendars are generally written for one climate and locality; as if nature, by its position and meteorology, was dependent upon dates. Now, it is self-evident that temperature, solar power, temperament of soil, and atmospheric moisture, must influence the entire vegetable creation. Those operations which are adapted to the southern counties, and therefore calculated to succeed in January, may be precocious by a full week in the more northern of the midland counties, and certainly must fail in North Britain. Mr. M'Intosh, of Dalkeith, in his truly judicious "Calendar," commenced on the third January, in the first number of the *Scottish Agricultural Journal*, has noticed this remissness. As, however, no one can enter into those precise minutæ which are inevitably influenced by climates, subject also in themselves to vicissitudes, we must be content to recommend a cautious adoption of our directions, under the guidance of that experience which ought to instruct observant persons who have long been residents in a certain locality. Little is gained at any time by very early sowing *anywhere* (as in December and January), unless a sufficiency of framing be at command; and in the north, where the spring season is usually much limited, those operations which suit the market-gardens of Lon-

don ought to be deferred for a fortnight, at least. Frosts here have touched the broccolis a little: of late, the temperature has been quite mild, the weather dark and wet. A change is again likely to take place; but the equinoctial prognostic appears to be still borne out by the continuance of lively south-west winds, and a general changeable character of the weather.

On the 14th day the barometer ascended rapidly, and the 15th became beautifully fine. Subsequently there was little sun, the sky was overcast, and some drizzling rain came on. Upon the whole, there was some improvement, with a higher glass, and fresh drying air till the 21st, when a rapid change took place; and wind, with threatening clouds, now, as I close this notice, warn us of renewed wet weather.

The average temperature of the entire month, comprised between the 20th of December and the 25th inst., is above 40 degrees. The prevailing winds, south to west. Sunny intervals have been rare and far between.

HARDY FRUIT DEPARTMENT.

Pruning must now be assiduously attended to, according to former directions; finishing off those trees or shrubs which are the most advanced. Apricots take the lead; then follow peaches, nectarines, plums, and cherries. The habits of every tree must be studied and understood; so that (while using the knife for the object of immediate fruit bearing) the future may be philosophically provided for. Gooseberry trees will generally take priority of the currants; and the order of pruning is very dissimilar. The black currants dislike the knife; therefore, old wood should be removed from its lowest position. Raspberries should retain four to six strong canes, and all wandering suckers ought to be forked up for new plantations. Each retained cane should be shortened back to *behind* the bud where there is a curve. After these regulations, any manure that has been on the ground all winter should be just forked in.

A few spare sashes, placed sloping in front of early wall-trees, secured at top under a boarded, narrow coping, and at bottom by resting on plain slabs, fastened with pegs, would protect far more effectually than nets, bunting, or mats. Figs could thus be brought in more early.

If American blight affect the apple-trees and their roots, let them be regularly washed, by means

of a strong hand-brush, with a solution of soft soap. The ground should also be raised to some depth, to observe the downward extent of the mischief. Much business remains over for the next month.

TENDER FRUITS.

The first vinery ought to be rapidly advancing; and the fires of the second should be lighted in the first week. Begin at 45 to 50 degrees.

Of *Pine Apples*, till the question be more settled concerning their proper situation, whether in pots, or plunged in the open bed, we shall say but little. The subject of the due application, or non-application of manure, is still also on the *tapis*.

Melon plants should now be advanced, by sowing the seed in pots or pans, the points downward in the earth. They are to be raised in a lively, sweet heat, as are cucumbers; and when the rough leaves are developed, each plant is to be moved to a small pot of rich reduced turf, plunged in gentle heat, and kept shaded till the plant begins to grow; then, sun and air should be cautiously admitted. Future remarks will be timely offered when I come to describe Mr. Knight's practice with his highly-prized Persian Housainée and Sweet Ispahan melons. The Cantaloupes, scarlet and green-fleshed, with numerous varieties, are still generally grown, and have their admirers; but surely no judge of real merit, who has tasted the genuine, well-grown Persian fruits, could twice hesitate in his choice.

OPERATIONS IN THE KITCHEN GARDEN.

First week (a little earlier; or it may be in the north a week later).—After duly preparing the ground, sow peas in rows at least four feet apart, and long-pod beans. Earth up about former sowings, if the plants are two or three inches grown. Begin with the first sowings of small saladings, hardy lettuce, and radish—all on a warm border, digging the ground and making it fine. The weather still must decide; for a wet, pasty condition of the ground prohibits success; and if disturbed, its texture (unless very sandy) becomes much injured. Earth up celery very carefully, and make a sowing upon a bed of fine earth, over a mass of warm leaves. Such beds and temperate frames offer vast advantages to the gardener in his early and progressive crops. Brick-pits, three parts filled with decaying leaves, should be prepared for cucumbers and melons. Sow the seeds of the former directly; of the latter, after the middle of the month. When cucumber plants are already growing on the hills, or in deep garden pots of very rich mould, each lateral produced, after the second and third stopping must also be always stopped at the showing fruit: this was M'Phail's practice, and

led to a regular and perpetual development of fruit.

Early Ash-leaved Potatoes.—In the second or third week, if the ground be friable, commence in earnest to adopt the practice recommended by Mr. Cuthill (see Dec.); and be careful to set up the ridges straight, and to make the furrows equidistant, and quite nine inches deep, at the least. If the weather be open, plant immediately, scattering the soot first, and some fine coal ashes over the tubers, which ought to be whole, and placed six or eight inches apart. If they have been excited, and already have strong shoots two or three inches in length, great care must be used not to break any of those off from the rose-ends. As one row is finished, turn the earth of the adjoining ridge over the sets, and ridge it accurately, that thus the line of potatoes may have nine to ten inches of soft, friable soil exactly over it. Preserve the same order through the extent of the plot.

Cabbage Seedlings.—Transplant a number of these from the nurse-rows that have stood the winter, or from those frame-sown—which latter are to be preferred. Sow also York and other cabbage-seed, Brussels sprouts, savoys, German greens, and all favourite sorts of kales, for succession.

Winter Spinach will be growing. Clear the ground, and point-in some decayed horse droppings. This manure, in common with that of the sheep, is not rich in itself, but it is manageable among growing crops; and, in all probability, would be improved by the addition of about one-thirtieth part of genuine Peruvian guano incorporated with it.

Sow and plant *Lettuces*, of any favourite varieties: some from Paris are found particularly good. The black-seeded *Gotte* comes early into use: it is the smallest of all the cabbage lettuces, forming a round, rather flattened, ball, scarcely four inches across—of fine flavour, pale green, and little liable to run to seed. We had specimens last year from a neighbouring garden, which continued excellent till autumn. It may be sown occasionally throughout the spring, and till Midsummer.

Parsnips, Carrots, Beet-root, prepare the ground for, by trenching from fourteen to twenty inches deep. Fork the bottom, and deposit two or three inches of strong, lively manure thereon. Fill up the trenches with fine soils, free as possible from stones (parsnips will bear the stiffer land); and by the time the ground shall have duly settled, the seeds may be sown in rows, eight inches apart for the early-horn carrots, ten inches for the small purple beet, and twelve to fourteen inches for the larger carrot and parsnip. The first week of March will be early enough to sow these seeds, and also *Onion*. The ground should be made ready for the

larger sorts—thus: trench twenty inches deep, thoroughly manuring it as the work proceeds. Some guano, or reduced night-soil and soot, may be incorporated with advantage. Suffer the bed to settle, till pretty firm (*see* next month). *Leeks* may be so prepared for.

Parsley-seed can now be sown, either in beds or drills, half an inch deep, along the edges of borders.

Horse-radish.—The public have been led on by writers to try various schemes to propagate this useful garnish; yet, strange to say, sturdy and intrusive as it is, few plants are more fickle and difficult in their choice of situation. There must be some constituent in its elements that has not yet been detected, and which the generality of soils may not contain. Still, there are methods of planting which should be adopted, and one of these I have borrowed from G. Lindley's *Guide*, &c. Trench the ground, in some out place (not the garden) two feet deep; each trench the same in breadth. The first trench, however, is to be dug out fifteen inches only; the mould to be barrowed back to the opposite end, as a reserve for filling the last trench. The bottom of trench 1 is next to be dug to the full depth, and made fine and level.

Place the line lengthwise, at six inches from each side, and plant horse-radish crowns, cut with an inch or two of stick to each, nine inches apart, along the line. Then remove the line twelve inches, and turn the earth over the sets, taking out fifteen inches from the second trench. Treat that, and plant it exactly in like manner. Thus trench after trench will be completed, and thus the crowns will stand level, at a depth of fifteen inches below the original surface, twelve inches distant row from row, and covered with the earth removed from each adjoining trench. Keep the surface always clean, and the chance is that the plant will soon appear at regular distances. A good bed, prudently dug, when in full strength, will last a number of years.

We must defer the usual remarks upon ornamental gardening, either in the open ground or under glass. This period of the year in general prohibits active operations, and March will be far more eligible. The increments of light and heat must be duly observed; and being so, the skilful gardener will follow in the path thus indicated by nature.

JOHN TOWERS.

Croydon, 20th January.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR JANUARY.

The all-engrossing topic of discussion amongst the agricultural body, since we last wrote, has been the probable working of the new corn law scheme, to come into operation on the 1st of February. Its effects have been already felt to some extent. During the month just concluded, millers and all other parties connected with the corn trade have purchased with more than usual caution—so much so, indeed, as to leave themselves almost bare of stock; hence there has been a pressure of grain upon our markets, and which has resulted in drooping prices. Some parties appear to be of opinion that a considerable decline will take place in the value of wheat during the next two months; we, however, are of a contrary opinion. The quantity to be released at the nominal duty of 1s. per qr. will be about 700,000 qrs. Of that large supply nearly 200,000 qrs. have been sold for delivery; hence the total quantity to be thrown upon our markets will not exceed half a million qrs. Now, when we consider the immense consumption which has been going on for some considerable time past, and the limited quantities in the hands of the mil-

lers, we arrive at the conclusion that no material fall will be the immediate result of the new import scale of duties. Another argument against an extensive decline may be derived from the fact that no arrivals of grain worthy of notice can take place from the Baltic until the latter end of May or the beginning of June. From the Mediterranean and United States supplies may occasionally drop in; but they will not be large in extent. What may be the effect of the new law later in the year it is not very difficult to define. Should we be favoured with an abundant harvest, we should not be surprised to find wheat selling, during the winter months, from 20 to 25 per cent. lower than at present. Spring corn can scarcely go lower than it is now, and the continuance of low prices may prevent excessive importations. Our foreign advices state that comparatively little business has been doing in grain on English account for some time past, as the growers have almost generally demanded very full prices for nearly every description of corn, the supplies of which at the various sea-ports are represented as very moderate.

In the early part of the month the weather, in nearly all parts of the United Kingdom, was very severe; and ice in considerable quantities was pro-

duced in most of our deep rivers. Since about the 15th we have been favoured with a mild open atmosphere, with occasional rains, and strong gales of wind blowing mostly from the southward and westward. The winter wheats have stood the various changes remarkably well; and we may observe that our accounts agree in stating that very few instances of winter-pride are to be met with. Field labours, such as the carting of manure, &c., have progressed slowly, from the tender condition of the soil; yet, on the whole, they are seasonably forward.

Less wheat has been thrashed out than we almost ever remember; the consequence has been that the sales have been chiefly confined to parcels of foreign growth. Our farmers have naturally felt disinclined to over-stock the markets in the face of a dull trade and of drooping prices. A question has arisen, and a very important one it must be considered, as to the quantity of English wheat at this time on hand to meet our wants, without the aid of the foreigner. We have caused some extensive inquiries to be made on the subject, and we feel justified in asserting that, notwithstanding the large supplies displaced by foreign qualities for some time past, the supply is by no means extensive, the time of year considered. This remark applies more particularly to Essex, Kent, and the whole of the western counties; hence it must be obvious that a serious fall in prices at the present moment must not be expected. The quality of the wheats produced last year in the above-mentioned districts is far from good; and at least two-thirds of the samples are still requiring a large admixture of foreign to produce really fine flour.

The early lambing season has gone on remarkably well, and the losses may be set down at a very low average. Lambs have already appeared in our leading markets, but they have produced very low prices.

The almost continuous influx of foreign potatoes into the metropolis have greatly disappointed the hopes of the home growers. During the month there have arrived, from France, Holland, and Belgium, about 3,200 tons, in fair average condition, and which have sold at prices varying from 40s. to 105s. per ton. As might be expected, English potatoes have ruled dull in sale, at drooping currencies. Since the beginning of last September, the arrivals of potatoes from abroad, into London, have been not less than 56,210 tons, a quantity greatly in excess of all previous calculations.

The losses sustained by the epidemic have not been very heavy, compared with some corresponding seasons, and but few instances of foot-rot in sheep have been met with. Food has continued in

great abundance; hence both beasts and sheep have fared extremely well in the whole of our large grazing and flock districts.

Large supplies of both hay and straw have been on offer in the various markets, owing to which the demand has been in a very unsatisfactory state, and prices have been with difficulty supported.

In Ireland and Scotland the corn trade has continued in a very inactive state. Wheat has mostly sold at full prices; but all other articles have had a downward tendency. The direct imports from abroad have been somewhat extensive. The export of grain to England has increased.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

Notwithstanding we have to notice a considerable falling off in the imports of live stock from abroad, and that the supplies of both beasts and sheep, home-fed, on offer in our various markets have been small, an unusually small amount of business has been transacted during the whole of the month, at drooping prices. We may observe, however, that the arrivals of country-killed meat into London have been large in the extreme, and the low rates at which they have been offered have induced many of the cutting butchers to purchase their supplies dead, rather than run the risk of the live-stock markets. The graziers complain loudly of the present depressed value of their produce, which is now quite 20 per cent. lower than at the same period in 1848. For instance, in Smithfield, the primest Scots have sold as low as 4s., and the primest old Downs at only 4s. 10d. per 8lbs. These must be called extreme quotations, as we have seen very useful animals sold at prices from 4d. to 6d. per 8lbs. beneath those rates. Our readers will probably recollect that we have long since predicted this state of things; we have informed them that a considerable addition has taken place to our supplies of English beasts, which to an extent have been displaced by the foreign importations: and we should not be at all surprised to find mutton suffer a decline of from 6d. to 8d. per 8lbs. during the next two or three months.

The northern "season" for beasts has not yet closed, and we learn that the whole of the supplies originally intended for the London market will be disposed of elsewhere. The number of beasts and sheep in Norfolk, and the other eastern counties, fit for slaughtering, are unusually large, and of very prime quality. With abundance on all sides, we look in vain for any advance in present prices.

The approaching stock fairs are likely to prove dull; and great caution will be necessary on the

part of the graziers in effecting their purchases, however large the quantity of pasture and other food in the spring months.

The supplies on offer in Smithfield have been as under:—

Beasts	16,623	Head.
Cows	568	
Sheep	93,150	
Calves	873	
Pigs	1,185	

CORRESPONDING PERIODS.

	Jan., 1848.		Jan., 1847.
Beasts	15,589	....	14,893
Cows	480	....	420
Sheep	91,880	....	94,680
Calves	770	....	842
Pigs	2,435	....	2,250

The average prices have ruled thus:—
Per 8 lbs. to sink the offal.

	s.	d.	s.	d.
Beef .. from....	3	0	4	0
Mutton	4	8	4	10
Veal	3	6	4	8
Pork	3	4	4	8

CORRESPONDING PERIODS.

	Jan., 1848.		Jan., 1847.	
	s.	d.	s.	d.
Beef .. from	3	4 to 5	0	.... 2
Mutton	3	8	5	4 3
Veal	4	4	5	6 4
Pork	3	8	5	2 3

The bullock supplies have been drawn as under:

Northern districts.....	6,250	Head.
Eastern do.	3,400	
Midland and western do....	1,200	
Other parts of England ...	1,700	
Ireland	450	
Scotland.....	590	

From abroad, the annexed imports of stock have taken place into the metropolis:—

Beasts	547	Head.
Sheep	3,767	
Calves	180	
Pig	1	

Total.....	4,495
Corresponding month } in 1848	5,485

At the outports only about 1,500 head of stock have been landed, and those in very middling condition.

Very large supplies of Scotch and country-killed meat have been received up to Newgate and Leadenhall markets, and which have met a dull inquiry, at drooping prices. Beef has sold at from 2s. 4d. to 3s. 6d.; mutton, 2s. 6d. to 4s. 4d.; veal, 3s. 4d. to 4s. 6d.; and pork, 3s. to 4s. 8d. per 8lbs., by the carcass.

SOMERSETSHIRE.

The winter continues to be marked by the same tendency to wet and changeable weather, which has now prevailed for a twelvemonth. Settled frosty weather has soon given place to a south wind, with rain; and now we have the mild balmy air which comes under the description of a January spring. Many farmers are wishing for a cessation of rain, to finish their wheat sowing, much being still to do. As regards that sown, great complaint is made of its being eaten; and in some places, where it is very wet, it is not coming up, and that there is some cause for this, we are disposed to think; but this kind of apparent damage is often surprisingly recovered, and large crops reaped. Except the large quantity kept for spring sowing—which is attended with more risk of a crop—there is not as yet any cause of alarm for the next year. Winter beans are looking well, but not forward. We have seen but very few pieces of vetches; and for feeding off the turnips this has, indeed, been an unpropitious season. Whenever we can get a hard frost we are busy, getting out manure; but at present the land is thoroughly soaked, and large breadths of the low lands are under water. This is about the state of our lands now for the stock. What cattle are housed are doing well, when they have fodder not spoiled by the season; but it is generally such, that if they are kept on it for the winter, and not the worse for it, it will be better than we may expect. Our fairs and markets are worse and worse, both for fat and poor stock; but more particularly the former, 6s. to 8s. 6d. being the hardly realized price per score. Mutton not quite so bad; but we are sorry to say a great number of the sheep are rotten (loathed), and have been forced into the market when in good order; and how far it extends to poor sheep is yet to be proved. Pigs still worth 8s. per score, and not so plentiful as they were. Poor ones sell rather more freely; there does not appear a large stock. Very little doing in cheese; that which has been sold this month going off very low, from 4s. to 5s., and skim 28s. to 32s. Fat calves are also low, 6d. to 6½d. per lb., against 7d. to 7½d. last year. But much as the price of stock is complained of, it is worse in the corn market. From frequent changes in the weather the condition of the new is very bad, and it weighs, even when sound, very light; but a very large portion is grown, and cannot find purchasers even at the low prices of 4s. 6d. to 5s. per 60 lbs.; the sound new is worth 6s. to 6s. 3d.; red and white old 6s. 4d. to 6s. 9d.; and some of the best whites, 64 lbs., has just now been worth 7s. As our millers are very bare of stock, and waiting for the 1st of next month—having scarcely sufficient to last until that time—this is the case with the bakers—yet the price of flour has been well maintained, from 38s. to 39s. per sack. We are disposed to think we are at the lowest; and as it will take fully one part out of three in the average consumption of the miller, of foreign, the large imports will soon be cleared away; and it is doubtful if they will be replaced at such low prices from abroad. Beans are very low; winter ones, 4s. 3d. to 4s. 6d.; spring ones, 4s. to 4s. 3d. Oats are also a very great drug, and only worth from 16s. to

20s. for 32 to 36 and 40 lbs. per bushel; English barley, malting, 30s. to 31s.; grinding, 26s. to 28s.: but few very fine qualities. In wool there is very little doing; prices quite nominal. To all engaged in agriculture, this year will be, we should suppose, a losing one; and what will be done with the large bulk of damaged wheat, which at present cannot find a vent, we are at a loss to know; or how, from its proceeds, the rent is to be made up. The few peas saved well are very low in price, good white boilers not being worth 6s.; and the quantity and quality of the clover-seed is such that very little will come from this, in some seasons, no little source of provision for the rent day. In this country, and in the West, free importation could not have

commenced under more adverse circumstances to the farmer; as it is only with good crops he has any chance of meeting foreign competition; still we are disposed to think the present prices obtained for foreign will be, on an average, a loss to the importers, or at least will not pay them. It is clear there is a very large consumption of wheat, through different channels—much greater than this time two years; as then other corn—barley, peas, beans, rice, &c., were substituted, in *large quantities*, for wheaten bread. The quantity grinding at the mills, in shape of grits, is very great; and there is full work for the miller to supply, even now, the demand for flour, restricted, as it is, to immediate use by the bakers.—1st Month, 19th.

REVIEW OF THE CORN TRADE DURING THE MONTH OF JANUARY.

The winter has up to the present time been extraordinarily mild: such weather as we have experienced does not generally prove favourable either for the human frame or for vegetation. With the exception of a few days in the early part of the month, we have had no frost: there has been snow in some parts of the country, but in the neighbourhood of London the ground has only been covered once to the depth of an inch or two, and this disappeared within four-and-twenty hours after having fallen. Latterly the temperature has been very mild for the season, and the autumn-sown wheat is growing more rapidly than is considered favourable at a time of year when, in the ordinary course of things, vegetation is usually dormant. The great cause for apprehension under these circumstances is the probability of injury being hereafter done by a sudden check in case February or March should prove cold and wintry. On the other hand, should the weather be similar to what it has been of late, the spring would be unusually early.

Keep has been very abundant, and there must have been a great saving of provender by the mildness of the season, and the consequent ability of providing food for cattle, without the necessity of stall-feeding: there can be no doubt that this has had some influence on prices of oats, beans, peas, and other articles usually employed for that purpose during severe weather.

The grain trade has remained in a very depressed and languid state throughout the month, and though many usually well informed are of opinion that affairs are now about to mend, we must acknowledge that we are not very sanguine on this head. By the time that what we are now writing shall have met the eyes of our readers the corn laws of 1846 will have ceased, and free trade have

been established. We have frequently expressed our opinion as to the probable working of the new order of things, and as all argument is now of little use, we shall refrain from going over a twice-told tale. We sincerely hope that our fears may prove groundless, and that the country may have no cause to regret the departure from the system of protection to native industry. At all events, the trial must now be made. The immediate effect of the removal of the duties is not likely to be great, simply from this reason—that it has been anticipated. All parties having long been aware of what was about to take place on the 1st of February, have prepared for the event, and prices have gradually arranged themselves to meet the new order of affairs. The value of most kinds of grain has been reduced step by step, until prices have come down to a point at which it will no longer pay to import; and for a time at least we shall probably have diminished supplies of foreign produce. We are, therefore, inclined to think that, for a month or two, quotations will not vary much; after that period the range of prices will depend on the aspect of the crops in the ground, the weather, and other matters of which nothing can at present be known. We have certainly no excess of stocks of home-grown corn. The last harvest in Great Britain was unquestionably deficient; and though the extent of the potato disease was exaggerated, there can be no doubt that a large proportion was diseased; hence we are likely, under any circumstances, to require a foreign importation. At present we have rather a large accumulation of stocks in warehouse, the imports having during the last two months exceeded what has been wanted for immediate consumption; but what we have now on hand will, in all probability, be pretty closely worked up before

the spring shipments from the Baltic can be expected to reach us, hence we look for a tolerably uniform range of prices until something like an opinion can be formed as to the promise for the future. Should there be reason to view the prospects in regard to the next crop favourably, the value of agricultural produce would probably undergo a further depression; for, whatever the range of prices may be here, the surplus growth of the continent is sure to find its way to this country, now that no duties are longer levied on foreign imports.

We shall advert more particularly to the position of the different markets abroad at the end of this article, so as to afford the materials for forming a judgment of the capabilities of our neighbours to afford us supplies, and shall now proceed to notice the changes which have occurred at Mark Lane since our last.

This part of our subject must, from the very nature of things, be a mere dry detail. In times of excitement something like interest may be imparted to a trade review; but when, as has been the case of late, all parties act on the reserve, the business is of so retail a character that the operations of one day bear a close resemblance to those that have preceded, and the reviewer has little to comment upon. Contrary to what might have been expected on the eve of so great a change in the laws as that now about to take place, the farmers have not manifested any anxiety to force their produce forward for sale, and the markets in the agricultural districts, as well as the large consuming towns, have been more moderately supplied with home grown corn than is usually the case at the corresponding period of the year. The fact is that prices are, and have for some time been, so unremunerating to the growers that they appear to have come to the conclusion that they cannot do much worse, and may perhaps be benefited by waiting.

The arrivals of wheat coastwise into London have been very small throughout the month, and the quantity brought forward by land-carriage samples from the home counties has been trifling in the extreme. The almost constant dampness of the atmosphere has acted injuriously on the condition, which, coupled to other causes, has rendered the sale very difficult. Taking into consideration the bad order in which the Essex, Kent, and Suffolk wheat has come to hand, and the consequent deterioration in its intrinsic value, the fall in prices has been unimportant since our last. Some of the inferior kinds have been parted with at very low terms; but really good useful qualities, whether red or white, have commanded nearly the same rates as those current at the close of December. The fact is that the London millers are obliged to employ a certain quantity of fresh English wheat to mix with

the old foreign, and the extreme insignificance of the supply of the former has enabled factors to make retail sales without giving way in prices. The market has, however, been in such a state that it could not have borne any quantity without causing a decline; purchasers have all along confined their operations to as narrow limits as their pressing wants have allowed; and when there has appeared anything beyond what has been required for immediate use on the Monday, it has generally remained over till the latter part of the week, by which time the little previously bought had been worked up, and thus sellers have managed to get through the small English supplies without submitting to lower terms.

The transactions in foreign wheat have likewise been on quite a restricted scale; there has been an abundance of the article to dispose of, but there has, at the same time, been a decided unwillingness to buy more than needed, and it has consequently been useless to endeavour to press sales. The arrivals from abroad have been large, upwards of 85,000 qrs. having been received at this port since the end of January. The high duty, and the close approach of the time for the repeal of the same, have prevented any part of the supply being entered for home consumption; but the quantity of free foreign wheat at this port being, as already remarked, large, we have had a plentiful choice of quality. The attendance of buyers from the country has at no period of the month been numerous, and the few who have visited Mark Lane have confined their operations to as narrow limits as have the local purchasers. Though holders of free wheat have naturally been anxious to clear off as much of their stock as possible before the release of the bonded, they have seen the impracticability of making large sales; hence they have refrained from forcing business, and quotations have been better supported than would otherwise have been the case. Prices have nevertheless given way 1s. to 2s. per qr., and bonded samples having been held 1s. to 2s. per qr. higher, the difference between the two, which at the close of last month was about 5s. per qr., was gradually diminished as the time for the cessation of the law approached, and during the last week parcels under lock have been held at rates little more than 1s. per qr. above those asked for similar qualities duty paid. It is, therefore, scarcely necessary now to make any distinction. Polish Odessa may be quoted 42s. to 44s., good red Lower Baltic 44s. to 46s., and very fine Rosstock 50s. to 52s. per qr., including duty. Meanwhile there are offers to ship in spring somewhat below these rates, though not so low as to hold out much inducement to purchase abroad. The fact, that what may be sold can be easily replaced, is

against any rise occurring in prices, particularly as the mildness of the season will probably have the effect of opening the navigation of the Baltic a month or six weeks earlier than in ordinary years.

The trade in flour has been very languid throughout the month, and though the arrivals from France and America have not been nearly so large as was the case the last month or two of the past year, the quantity of foreign previously stored has been brought into active competition with the sale of that of home manufacture. Until the 15th ult. the top price of town made flour remained stationary, and the decline of 2s. per sack then submitted to by the millers has failed to impart more activity to the demand, the bakers having refused to take beyond what they have absolutely needed for their immediate wants. Norfolk households have been freely offered in the river at 33s. per sack, and other kinds of country flour at corresponding rates. American has sold slowly, duty paid, at from 26s. to 28s. per bbl., according to quality, and French at prices varying from 30s. to 35s. per sack. Some of the recent arrivals from that country are of very inferior quality, but the best marks continue to find favour with our bakers.

The arrivals of home grown barley have been moderate; having, however, received immense supplies of foreign, the value of even the finest English has been more or less influenced, whilst all secondary sorts have declined materially in price.

During the first fortnight in January upwards of 85,000 quarters of foreign barley were received at this port alone; and at Hull, and some of the other ports on the coast, the arrivals were of corresponding magnitude; that prices should have given way is, therefore, only natural. The greatest depression in the London market occurred on the 15th inst., when good 48 to 50 lbs. grinding barley was freely offered at 21s., and heavy 52 to 53 lbs. qualities at 22s. to 24s. per quarter, duty paid. These rates being regarded as tolerably safe, our large dealers and distillers began to operate; and though no quotable advance has since been established, prices have slightly crept up. Altogether a considerable proportion of the supply has passed into second hands, and the pressure on the market has been a good deal relieved. Within the last week as much as 30s. per qr. has been asked for prime Saale malting qualities; and heavy Baltic sorts, not suitable for malting purposes, have been held at 25s., whilst such as had been forced off at 22s. to 23s. have been held 6d. to 1s. per qr. higher. That there are good stocks of this grain at several of the Baltic ports, in the Danish Islands, and in some parts of France, is certain; and during the summer we are likely to

be kept well supplied with secondary and inferior qualities from those and other quarters.

Prime English malting barley, being really scarce, has been less depressed in price than might have been expected, having at no period of the month been offered more than 1s. to 2s. per quarter below the rates current in December.

The transactions in malt have been on quite a retail scale since our last, and quotations have undergone no particular change; the lower grades have been sold at somewhat reduced rates, but the top price has hardly changed, the scarcity of fine barley having induced holders of the best descriptions of malt to remain firm.

With English oats the market has been very sparingly supplied, but we have had a fair sprinkling of Scotch; and within the last fortnight the arrivals from Ireland have been large. Of foreign the receipts have lately been moderate, owing to the near continental ports having been closed by ice since December. Altogether the quantity brought forward has proved more than equal to the demand, though the greater part of the supply from abroad has been kept back to meet the 1st of February. The low range of prices of all other articles suitable for feeding has, no doubt, caused a diminished consumption of oats; the demand has at all events been very languid throughout the month, and the large dealers have manifested no disposition to add to their stocks. The fall in quotations since the end of December may be estimated at 1s. to 1s. 6d. per qr. on all sorts of British and free foreign corn. Bonded oats have, on the other hand, risen about 1s. per qr. in anticipation of the reduction of the duty to 1s. per qr. Latterly good qualities of Scotch feed have been offered at 21s. to 22s. Irish of 40 lbs. weight at 20s., and foreign, duty paid, at from 17s. to 21s. per qr., according to weight, condition, &c. The stock under lock to be released on the 1st of February is not very heavy, but in the present dull state of the trade the liberation may, perhaps, cause some further depression in prices, more particularly as renewed supplies from abroad may be calculated on, several of the near continental ports being now free from ice, and contracts entered into a month or two ago, for shipment at first open water, may therefore be expected to be at once completed.

The very mild character of the weather during nearly the whole of the winter has caused beans to be less extensively used than in ordinary seasons; and though the receipts of English have been small, previous prices have not been supported. New horse beans have been offered at 28s. per qr., and even lower, and handsome samples of small beans at 32s. to 34s. per qr.

The quantity of Egyptian and other foreign sorts received has been rather large, hence the value has

receded about 2s. per qr. since the close of 1848. Latterly there have been offers of cargoes of Egyptian to arrive at 21s. per qr., cost, freight, and insurance; and a bid of 20s. per qr. would probably not have been refused. In granary this description has been held at 23s. to 25s. per qr., according to quality.

Peas of home growth have come rather sparingly to hand; having, however, been well supplied with foreign, and having previously rather a large stock of the latter at this port, the downward movement in prices, noticed in our last monthly article, has continued. Within the last fortnight good English boilers have been sold at 32s. to 33s., and the very finest have been offered at 34s. to 35s., whilst foreign have become almost unsaleable. Non-boilers have been offered as low as 25s. to 26s. per qr., without exciting attention, and fair breakers at 30s. per qr., duty paid. English grey and maple peas have, in consequence of their comparative scarcity, commanded better terms, fine qualities having realized 33s. to 35s. per qr.

In Indian corn nothing of the slightest interest has occurred; there has been little or no Irish demand; and for local use the article has been entirely neglected since barley, oats, &c., have been obtainable at rates which have done away with the necessity of using substitutes. Indian corn does not appear to gain favour in England, either for human food or for cattle feeding; and we are inclined to think that it will be but little used in years when other sorts of grain rule low.

Our notice of the foreign markets need not be very extended this month, the operations at the different ports on the continent of Europe having been of little importance. It may be remarked as a leading feature, that comparatively little impression has been produced on prices abroad by the discouraging advices from hence. The fact appears to us to be that the knowledge that all restrictions on importations of corn into Great Britain are removed has given confidence to foreign holders. Looking back to former times when duties have been taken off, the effect has almost always been to cause prices abroad to advance; and it is certain that, for the present, quotations at the principal shipping ports in the Baltic are too near on an equality with our own to allow much margin for profit on consignments.

By the latest advices from Danzig fine high mixed wheat was held at 44s. to 45s. per qr., and moderately good qualities at 40s. to 42s. per qr., free on board, in spring. At the lower ports prices are not so high; but even 38s. per qr., which may be considered the value of fine Rostock, Stralsund, &c., at the ports of shipment, will not leave much room for profit, when we add freight and other ex-

penses, if prices continue as low here as they now are, say fair runs of Essex and Kent red wheat 44s. to 45s. per qr.

The most recent accounts from Hamburg inform us of the probability of the almost immediate re-opening of the navigation of the Elbe. Preparations were consequently being made to commence shipping, where contracts had been entered into during the winter for shipment at open water. The quantity of wheat offered had, however, proved equal to the demand, and its value had rather receded; prime parcels of red upland, weighing 61 to 62 lbs. per bushel, having been sold at equal to 40s. per qr., and even somewhat lower.

From some of the Dutch ports we may calculate on soon receiving supplies of oats; and should there be no return of frost shipments of barley on rather a large scale will be made early from the Danish Islands, were some quantity was bought in the Autumn and Winter on English account.

Taking quality and price into consideration, the northern ports of Europe afford a decided advantage over the south for the purchase of grain; hence no very active business is likely, in the first instance, to be done at any of the places lying east of Gibraltar. Letters from Marseilles, dated 20th January, inform us that the wheat trade was dull there, but that Polish Odessa was nevertheless held at equal to 36s. to 37s. per qr., free on board.

From the north of France we may reckon on further supplies of wheat, flour, and barley, but not of so liberal a character as those already received from thence.

We have now only to notice the American markets: the last accounts from New York are of the 10th January. The shipments of bread-stuffs to Europe had for some time been on a moderate scale; stocks there and at other ports on the seaboard were, however, small; and purchases having been made for local use, for the supply of the West India Islands, and last, though not least, for California, prices had risen about 50 cents per barrel, in the face of the dull English advices: at 5½ to 6 dols. per barrel for good to fine Western Canal flour—the rates current at New York—it clearly would not pay to ship to England, when it became known that the value of the same article in the London and Liverpool markets barely reached 28s. per barrel, duty paid; hence we do not calculate on much from the other side of the Atlantic, after what may yet be on passage shall have reached our shores.

STOCK OF GRAIN IN BOND IN LONDON JANUARY 10.

Wheat.	Barley.	Oats.	Beans.	Peas.	Maize.	Flour
137,482	27,522	23,617	10,811	6,780	—	163,025
IN THE KINGDOM.						
Wheat.	Barley.	Oats.	Beans.	Peas.	Rye.	Flour.
qrs.	qrs.	qrs.	qrs.	qrs.	qrs.	cwts.
498,834	62,950	31,246	26,191	15,372	8,461	498,015

CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white	50 to 57	46 to 53
Ditto, fine selected runs	—	48 54
Ditto, red	45 50	40 46
Ditto, extra	50 53	43 48
Ditto, Talavera	—	—
Norfolk, Lincolnshire and Yorkshire..	—	44 46
Ditto, white	—	45 48
BARLEY, English, malting and distilling..	—	29 30
Ditto, Chevalier	—	30 32
Ditto, grinding	—	24 26
MALT . . . Essex, Norfolk and Suffolk	—	58 59
Kingston, Ware, and town made	—	58 60
OATS, Essex and Suffolk	—	18 20
Lincolnshire and Yorkshire (Polands)	—	18 21
Ditto, feed	—	17 20
Devon & West Country, feed or ack	—	16 17
Northumberland and Scotch, feed	—	21 25
Dundalk, Newry, and Belfast, potato	—	21 23
Limerick, Sligo, and Westport, potato	—	19 22
Ditto, feed	—	18 21
Cork, Waterford, Dublin, Youghal, and	—	—
Clonmel, black	—	15 20
Ditto, white	—	17 20
Galway	—	13 17
RYE	—	28 30
FLOUR, best marks (per sack of 280 lbs.)..	—	39 44
Norfolk and Suffolk, ex-ship	—	31 33
BEANS, Mazagau	—	32 34
Tick	—	27 31
Harrow	—	31 37
Pigcon, Heligland	—	36 38
Windsor	—	29 39
Long pod	—	27 29
PEAS, non-boilers	—	28 30
White, Essex, and Kent, boilers	31 32	33 44
Ditto, fine Suffolk	33 34	—
Maple	34 35	34 35
Hog and grey	30 33	—
TARES	—	28 32
INDIAN CORN	—	30 32
INDIAN CORN MEAL (per brl. of 196 lbs.)	17s. 6d. to 18s	—
TARES, winter, per bushel	—	nominal.
RYE MEAL (per ton)	£6 0s. to £6 10s.	—
Ditto, foreign, per ton	£6 0s. to £6 10s.	—
Rapeseed	£4 15s. to £5	—
CAKES, Linseed, English, per 1,000	£12 0s. to £12 15s.	—

IMPERIAL AVERAGES.

FOR THE LAST SIX WEEKS.

WEEK ENDING:	Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Dec. 16, 1848..	47	6	31	4	18	11	29	8	34	3	38	1
Dec. 23, 1848..	47	6	31	4	18	4	29	1	33	7	37	10
Dec. 30, 1848..	46	10	31	3	18	0	28	6	33	11	35	9
Jan. 6, 1849..	45	10	30	8	17	0	26	4	32	4	37	9
Jan. 13, 1848..	45	4	29	11	17	8	27	9	32	2	35	0
Jan. 20, 1849..	45	4	29	1	17	1	28	4	31	1	34	9
Aggregate Average of the six weeks which regulates duty	46	5	30	7	17	10	28	3	32	11	36	6
Comparative Average same time last year	53	3	31	0	21	1	31	1	40	1	45	10
DUTIES	10	0	2	6	4	0	2	6	2	6	2	6

PRICES OF SEEDS.

BRITISH SEEDS.

Cloverseed, red 30s. to 35s.; fine, 35s. to 36s.; white, 30s. to 40s.	—
Co. Grass (nominal)	—s. to —s.
Linseed (per qr.) . . sowing 56s. to 60s.; crushing 42s. to 48s.	—
Linseed Cakes (per 1,000 of 3 lbs. each) £11 10s. to £12 10s.	—
Trefoil (per cwt.)	15s. to 21s.
Rapeseed, new (per last)	£27 to £30
Ditto Cake (per ton)	£4 15s. to £5
Mustard (per bushel) white	8s. to 10s.; brown, (nominal)

Coriander (per cwt.)	18s. to 25s.
Canary (per qr.)	85s. to 88s.; fine, 90s. to 92s.
Tares, Winter, per bush.	0s. 0d. to 0s. 0d.
Caraway (per cwt.)	28s. to 29s.; new, 30s. to 31s.
Rye Grass (per qr.)	17s. to 38s.

FOREIGN SEEDS, &c.

Clover, red (duty 5s. per cwt.) per cwt.	28s. to 35s.
Ditto, white (duty 5s. per cwt.) per cwt.	22s. to 45s.
Linseed (per qr.) . . Baltic 42s. to 46s.; Odessa, 42s. to 46s.	—
Linseed Cake (per ton)	£8 10s. to £10 10s.
Rape Cake (per ton)	£4 15s. 5d.
Coriander (per cwt.)	16s. to 20s.
Hempseed, small, (per qr.)	45s. to 48s., Do. Dutch, 45s. to 47s.
Tares, (per qr.)	28s. to 30s.

HOP MARKET.

BOROUGH, JAN. 29.

We have nothing to report in alteration of last week's statement. Trade continues heavy at the quotations then noticed. HORTON AND HART.

POTATO MARKET.

SOUTHWARK WATERSIDE, JAN. 29.

The continued adverse winds have left our market so barely supplied with every description of potato that we have but few sorts to quote the prices of, this week.

Yorkshire Regents	100s. to 150s.
Newcastle	90s. to 110s.
French ditto	90s. to 110s.
Belgian ditto	80s. to 100s.
Dutch ditto	50s. to 80s.

BRITISH WOOL.

LEEDS, Jan. 26.—We have no change to report this week. Sales not quite so extensive as for the last few weeks. Prices firm, at advanced rates. Stocks at market still light.

LIVERPOOL, Jan. 27.

SCOTCH.—There has been less animation in our Scotch Wool market this week; and except in good Cheviots, which are scarce, the transactions have been more limited, but holders are firm at late rates.

	s.	d.	s.	d.
Laid Highland Wool, per 24lbs.	6	0	7	0
White Highland do.	8	9	9	0
Laid Crossed do. unwashed	7	9	8	9
Do. do. washed	8	6	10	0
Do. Cheviot do. unwashed	8	6	11	6
Do. do. washed	12	0	15	0
White do. do.	18	0	20	0

FOREIGN.—There has been a fair business doing by private contract this week, though not the same eagerness; and the accounts from the manufacturing districts are not so encouraging.

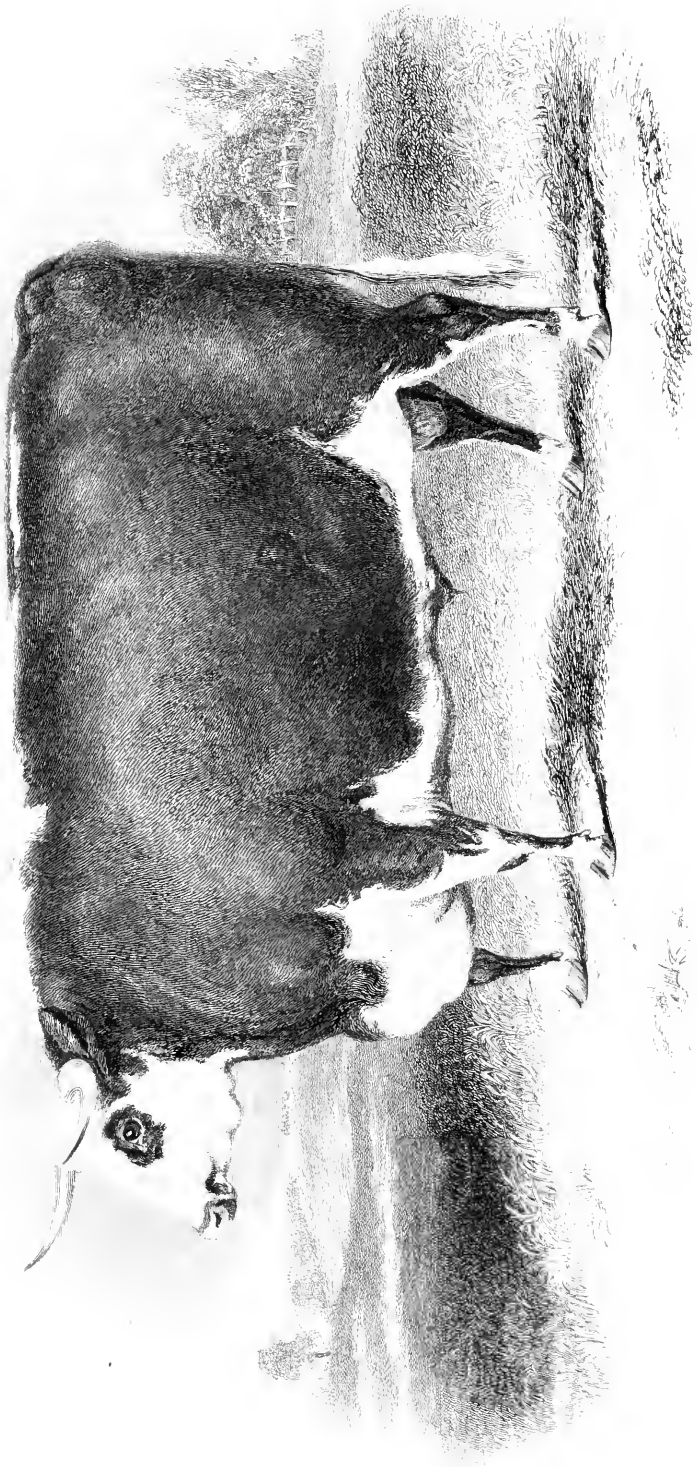
FOREIGN WOOL.

The public sales commence on the 7th of this month, and from 20,000 to 25,000 bales are expected to be offered. Already prices are higher by anticipation.

Accounts from Breslau state that a good business had been done in wool. The Rhenish, Saxon, and Silesian manufacturers were buyers, and also a large Hamburg dealer. The Seehandlung sold a good deal, as the establishment is going into private hands. Contracts for the new clip were freely made.

At Paris the wool market is rising, and the article has become scarcer. Wool in the grease was in request. There was not a large stock on hand.

LEEDS, Jan. 26.—Business has been a little quieter this week, but prices remain firm.







THE FARMER'S MAGAZINE.

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[SECOND SERIES.

PLATE I.

A HEREFORD OX,

The property of W. Trinder, Esq., of Wantage, Berkshire, for which the first prize of Thirty Sovereigns was awarded in Class II., at the Smithfield Club Cattle Show, December, 1848.

PLATE II.

A CART STALLION,

The property of Mr. Samuel Clark, Manswerie, Kilbarchan, Renfrewshire, which obtained the first prize of Thirty Sovereigns, at the Highland and Agricultural Society's Show at Edinburgh, in August, 1848.

GENUINE BROWN BREAD:

AN ALIMENT OF THE UTMOST IMPORTANCE, THOUGH BUT LITTLE UNDERSTOOD AND STILL LESS APPRECIATED BY THE COMMUNITY.

BY J. TOWERS, MEMBER R.A.S., H.S. OF LONDON.

I am reminded by the diagram so strikingly displayed in the front of the last number, of a subject which claims great attention at the present momentous period, when the corn trade is freed from all restriction, and competition fairly occupies the field.

OLD SERIES.

In the month of June 1847, when corn was nearly at its maximum, when bread was sold at from 11d. to 1s. 1d. the 4lb. loaf, when her Majesty adopted the use of second bread, and recommended her subjects to do the same, I wrote an article "On the nutritive qualities of the bread in com-

mon use," in order to show the fallacy of common opinion, by embodying the leading points of a paper written by that able and analytic chemist Professor J. Johnston, then of Edinburgh. From the period when our organic chemists first announced that all the constituent elements of the human and animal frames were built up and supported by the assimilation of certain specific matters contained in the food with which each was furnished, it became a primary object with them to subject every article of such food to severe analyses. *Bone, muscle, and fat*, constitute the three chief materials of animal structure, the blood being the vitalised fluid which contains, and conveys through appropriate channels, those elements that are destined for their ultimate supply. Bread ranks among the chief of the nutritional substances destined for the support of the human frame; and therefore, particularly at the time of the late or anticipated scarcity, it became an imperative duty not merely to secure to the public a genuine and pure article, but to point out the means by which pure wheaten meal could be most economically prepared, and so manipulated as more effectually to nourish the body and promote its general health. The professor announced that the best and most nutritious bread could not be made from the "whites" or household flour; but only from the "whole meal," consisting of the entire wheat grain ground up in one way, and used as it comes from the mill-stones, unsifted, and therefore containing all the bran. He also showed by calculation that 1000 pounds of such *whole or entire* meal contains of the elements of—

Muscular matter.....	156 lbs.
Fat	28 "
Bone material.....	170 "
	<hr/>
	354

Whereas in fine flour are found only, of—

Muscular matter.....	130 lbs.
Fat	20 "
Bone material.....	60 "
	<hr/>
	210

If then the real elements of food, convertible by assimilation into muscular flesh, fat, and bone, superabound to the extent of 144 lbs. in whole meal, the preference ought to be given to the meal, and, as an inevitable consequence, to pure brown bread, when compared with the white, tasteless, artificial compound, made by the white and "fancy" bread bakers. Some allowance must, however, be made for constitutional variations; for it is proved that, in many instances, bread which contains all the coarse bran becomes flatulent and too laxative, in consequence, perhaps, of irritation pro-

duced by the mechanical action of unreduced scaly particles. In such cases the best "one-way," or grist flour, obtained from the mill with the separation of the rough bran only, should be substituted.

A sack of good wheat, weighing 248 lbs., if honestly dealt with, ought to return about 200 to 205 lbs. of grist flour, and 40 lbs., little more or less, of excellent mealy bran of great value in the farm-yard, and also in the household baking, used in the form of bran-water for making up the dough. Persons are apt to lose sight of these sound principles, which lead to liberal economy, and tend to promote constitutional health; we write from conviction, and from the evidence of facts. The bread made from the "grist flour" of white wheat will not, however, be brown; its shade approaches to a hint of delicate yellowish buff, and its odour, when fresh, is temptingly fragrant. Such bread (24 lbs. of the flour giving 32 lbs. when taken from the oven), we have kept, and used during three weeks, on several occasions.

But to return to brown bread: we recommend the reader to look at the *Gardener's Chronicle* of Saturday, the 10th of February, wherein is a very able and remonstrative article, under the title "Brown Bread." The practices and excessive charge of the fancy bakers are there properly exposed. As a simple general fact, it is stated that this bread, which ought, as a natural result of its great yield, to be comparatively low priced, is sold at 4d. the 2lb. (so called) loaf, the real weight of which rarely exceeds 1 $\frac{3}{4}$ lb. The writer then inquires how and where small flour-mills may be obtained, whereby true and *genuine* brown flour can be manufactured *at home*. In answer to this question, a gentleman of great experience, and well known to me, has written to the effect, that cutting mills, resembling those used for malt, can be had at Birmingham, one of which cost him about 50s. Dissatisfied with the bakers' bread and charges, and knowing also that it is a common practice to mix up coarse pollard or middlings (often stale and musty), with flour; or even to knead them into a lump of common batch dough (in which latter case the bread turns out bi-coloured and motley), he resolved to grind his own *red* wheat, adding a very small proportion of rye; and thus he has for many years obtained a fine brown flour, that completely effects his object. I once tasted this bread, and can assert that nothing which can be purchased here will bear comparison with it. And now to look at the expense incurred.

A mill fully adequate to the purposes of any establishment which would consume a bushel of flour per week, has been and could be again obtained, at the cost of 50s. That sum and its interest might

be covered in one year, if a saving of 1s. 3d. per week in the price of pure bread were effected in the like period. We know that at the Croydon union, where the best wheat is always purchased by contract, and ground by the inmates of the house in very great quantities, excellent bread, divested of the coarse bran, is made at a reduction of many shillings per sack below the price charged by the cheapest dealers. Estimating such "one way" flour at 37s. per sack, and that half a bushel—28lbs., without an atom of potato, will produce, on an average of batches, $37\frac{1}{2}$ lbs. of bread, what would, I ask, be the price of the 4lb. loaf? Call the flour 3s. 9d.; fire, under the judicious management of a domestic economist, 3d.; salt, yeast, and a little sweetwort to enliven it, 2d. = 4s. 2d. Nine 4lb. loaves at $5\frac{1}{2}$ d., with the extra $1\frac{1}{2}$ lb. of bread, would more than cover the expenses, and in point of nutritive qualities would be equivalent to twelve second-bread loaves, now charged $6\frac{1}{2}$ d. = 6s. 6d.

A brick oven, however, must be employed, and nothing should be left to reckless servants. Experience of fourteen years cannot mislead, and I claim assent only on the ground of facts so obtained. But "one-way" flour, I have said, does not produce brown bread; and therefore it remains to state, on the authority of the party alluded to above, that the red or dark husked wheat (cheaper than the white varieties), is ground at home by a cutting mill, blended with a small portion of rye, just sufficient to confer a little sweetness, and to keep the loaves somewhat moist; the meal is then passed through a sieve, and the coarse bran set aside for other purposes. The dough is made and fermented without any addition by the ordinary processes, and loaves proportionally cheaper are the result.

There are prejudices against brown bread, because its colour and flavour are peculiar, and also because the loaf never rises so light and spongy as

that which is made from household flour, divested of all the bran and fine pollard; the process of prinary fermentation being assisted by the pulp of potatoes, by alum, and a portion of alkaline salts, to say nothing of the chalk, ground bone-dust, and other extraneous matters that report has unceremoniously admitted. Whatever may be the tempting delicacy of the appearance of our snow-white cottage bread to the eye, certain it is that in nutritive value it is at a sad discount. As to adulterated compounds they should not be tolerated *as bread*. Nor is it in any degree surprising that antibilious and laxative medicines should be so frequently resorted to, when our "staff of life" is proved to contain chemical agents that act, daily, as astringents. Brown bread, as now sold (and it appears to come into more general request), is not only extravagantly dear, but cannot be trusted as a pure aliment. Let the public look at the tables reporting the averages of wheat during the last twelve months, and thus become convinced that a brown, or even a "one-way" loaf, of 4lb., ought not to cost 6d.

One important consideration remains in favour of grinding at home. Wheat per sack should weigh at least 240lbs.; we, among others, have sent our corn to the mill, and never, in any two instances, had a corresponding return; there have always been differences, sometimes amounting to 10, 15, or more pounds in the flour, not accounted for by the comparative yield of the bran. Hence the mill cannot be confided in; and the thorough economist (and such there are in country places) must not only grind, but bake, at home.

"The proof of the" bread "is in the eating," and we venture to assert that "the rule" will be proved without many exceptions. The consumer, whether of the higher, the middle, or the more humble and industrious class, may rest assured that great reforms are imperatively called for in the article of bread.

SELF-SUPPORTING CONVICT LABOUR.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

One of the many difficult questions of political economy is the best mode of employing the criminals confined in our public prisons. Frequent have been the attempts, often unsuccessful, to enable the prisoners to in part, at least, maintain themselves by the product of their own labour. To some small extent this has commonly included the cultivation of prison gardens, of more or less extent and productiveness. There is now a vigorous attempt making by Mr. Charles Pearson, the member for Lambeth, to extend this convict cultivation

on a larger and a more remunerative scale, by the cultivation of large farms, or enclosed tracts of land, of say 1000 acres each. The plan, although not unattended with difficulties, is yet such as should at least attract the serious attention of the landowners of England. In a circular letter to the members of the London Farmers' Club, of London (of which Mr. Pearson is a member), he thus explains his objects:—

"My project, in an experimental and practical form, proposes the formation of two cheap prisons,

with 1000 acres of land to each, under two distinct sets of circumstances, for the purpose of testing their relative powers of surplus production, after the primary condition of each establishment shall have been complied with, namely, the raising on each 1000 acres respectively, an amount of bread, meat, oatmeal, and potatoes, sufficient for the sustenance of 1000 prisoners and 100 officers. I propose that one establishment shall be placed upon 1000 acres of the crown land in the New Forest. At a recent meeting of the London Farmers' Club, one of the members, who farms largely on adjacent land, showed me a map of 1500 acres in the forest, which he says, if properly drained by the labour of the prisoners, would be superior to his own, for which he now pays, I think he said, 25s. per acre per annum. The land he referred to is, he says, suitable to the growth of every description of crop required. It is close to the railroad, which leads, at no great distance, to several important market towns. The whole property is, as you are aware, crown land, which recent revelations, under my Lord Duncan's auspices, show does not produce to the nation a single shilling of revenue. I propose the formation of another establishment within a few miles of London, Liverpool, Manchester, or other populous city, where, by the application of a greater quantity of manure, a greater amount of labour may be profitably employed (after supplying the prisoners with requisite food) in raising market garden produce, which would bring a considerable cash return, and increase the consumption of a wholesome and nutritive description of diet, by bringing it within the reach of a larger portion of the community. In the Essex forests, within ten miles of London, there are many thousand acres of land suitable for these purposes, which, like the New Forest, are unproductive in the hands of the Crown, under the withering management of the Commissioners of Woods and Forests. At Wanstead also, there are 1500 acres of waste land which do not produce a rent of 2s. 6d. per acre, although they immediately adjoin to land of the same quality, which, by the labour of man, has been well drained and cultivated, and was recently sold at, I believe, upwards of £100 per acre. To simplify the question upon which I desire information, I should observe that the *maximum* of produce yearly required for the use of the establishment, is 930 qrs. of wheat, 16,900 stones of meat, 700 tons of potatoes, and 360 qrs. of oats. Bull and cow beef would be quite *tender enough* for the prisoners' use. Animals to furnish this food may be purchased lean all the year round, I understand, at a price, which if fed and fattened for three or four months on roots, clover, and bean-meal grown on the land, would come out capital wholesome meat at about

2s. 6d. or 3s. per stone. If, for the purpose of obtaining a greater quantity of manure to ensure a higher degree of cultivation, it were deemed better, occasionally to feed sheep or to fatten a greater number of beasts of a higher character, in addition to, or in substitution for the bull or cow beef, the inferior parts of the fatted oxen or sheep would serve the prisoners, while the more valuable portions of the carcass might be sent to market, to be consumed by honest men. These are suggestions which I venture to throw out, for the purpose of illustrating my general views upon the subject, rather than from any presumptuous idea of being able to originate any opinion upon the best mode of using the land so as to ensure the largest amount of cash return after supplying the exigencies of the establishment; this is a point upon which I shall regard as final and conclusive the opinion of the gentlemen to whom this letter is addressed."

With the circular letter to the members of the Farmers' Club, to which I have referred, a copy was inclosed, of the resolutions adopted at a large meeting of persons interested in prison discipline and prison reform. The chief of these, with sundry explanatory notes, are to the following effect:—

"1. That the number of commitments and recommitments to prison in England and Wales, for trial, on criminal charges, has increased within the last 40 years upwards of 400 per cent., whilst population has increased only 65 per cent. [The committals for trial in England and Wales in 1810, were 5,146; those in 1846 were 26,851; an increase of 428 per cent. The population of England and Wales in 1810 was 10,407,556; in 1848 17,458,809; an increase of 68 per cent.] 2. That 80 per cent. of all commitments and summary convictions are for larcenies, vagrancies, misdemeanors, juvenile offences, and other petty delinquencies, punished by short time sentences of imprisonment, varying from seven days to six months. [The commitments for trial in England and Wales (see 12th report of the Inspectors of Prisons, page 243) were in 1846 26,851; and the summary convictions for the same year were 65,992; making a total of 92,843: of this number 75,070 were sentenced to imprisonment for terms of less than six months]. 3. That to habits of indolence, improvidence, and self-indulgence, the origin of a large portion of these offences may be traced; and in the opinion of this meeting the improvement in the beauty and comfort of our gaols, and the substitution of short imprisonment for graver punishment, are another fruitful source of increase, both of committed and recommitted prisoners; as English gaols no longer create either terror or shame, but are often regarded as a place of shelter for the unfortunate, and for the idle criminal a congenial home. 4. That the

elegant model gaol and house of correction at Reading, with its cellular system, is calculated, in the opinion of this meeting, further to increase the number of petty offenders within the range of its influence. By the rules of the gaol *hard labour* is excluded. By this system no direct means of *reformation*, except religious teaching, are employed. Cellular separation is the only *punishment*; and every prisoner is provided with a spacious, well warmed, and ventilated cell, with an abundance of wholesome and palatable food, without himself making a single effort to earn it; and he is allowed ten hours for sleep, and the remainder of his time at his own disposal, for instruction in reading, writing, and arithmetic, or some light occupation, not enjoined but only permitted, for his recreation and amusement. 5. That in the opinion of this meeting, in order to check the increase of crime it is necessary that a total change of system should take place; that the aspect of our prisons should be made rather sad and repulsive than cheerful and attractive, and that not one shilling should be expended in the beauty, or convenience, or strength of a prison, more than is required for the health and security of the inmates. 6. That while it ought to be an essential part of prison discipline to endeavour to *eradicate the seeds of crime*, by the moral and religious instruction of prisoners, no system can be sound that does not attempt at the same time to counteract its *proximate causes*—indolence, improvidence, and self-indulgence—by endeavouring to create and confirm the antagonistic *habits* of industry, forethought, self-dependence, and self-control. 7. That besides the cost of building gaols the annual expenses of maintaining the criminal classes, in the prisons of England and Wales, amounts to upwards of £400,000; while their productive labour does not realize £20,000. [The total expenditure of the prisons in England and Wales, in 1846, is vouched by the inspectors of prisons at £436,977; and the year's profits, arising from the productive labour in those prisons, at £17,475]. 8. That 81 per cent. of our male criminals, annually committed, are between the ages of 16 and 45 (the age when, in a free condition, men not only maintain themselves, but supply a large portion of the surplus labour and industry by which the females, the children, and other non-producing classes of the community, are supported), and 47 per cent. are between the ages of 20 and 35. [The average annual number of committals of male prisoners for trial, and of summary convictions, for the nine years 1839-1847, was 72,639; of which number 59,430 (or 81 per cent.) were between the ages of 16 and 45; and 34,186 (or 47 per cent.) between the ages of 20 and 35]. 9. That the criminals in some of the American prisons entirely, and

in those of France and Belgium nearly, maintain themselves and defray the charges of the administration by their own labour and industry, moved by the stimulants of rewards for exertion and good conduct." In support of this assertion the following extracts are given from various works of competent authority. "The States prison at Charlestown, Mass., has paid by the labour of the convicts, in round numbers, upwards of 6,000 dollars for provisions; 4,000 d. for clothing; 3,000 d. for fuel and other contingent expenses; 15,000d. for salary of officers; 600 d. for transporting prisoners from county prisons; 300 d. to convicts on their discharge, in sums varying from 3 d. to 5 d., besides a new suit of clothes to each of them; 100 d. to increase the library; and having done all this has 800 d. left in the prison treasury. There has been an average of 285 prisoners, and only one death the last year, and only 7-10ths of 1 per cent. of deaths in four years, and no death since January, 1845, about 1½ years; and there has been no case of discharge by pardon on account of sickness.—*Annual Report of the Boston Prison Discipline Society.* The government of Belgium formed, towards the end of 1820, a council for the regulation of civil and military prisons, which, after three years of continual labour, succeeded in completing and introducing the new system into all the prisons, under which the condition of the prisoners is greatly ameliorated, at a very moderate expense to the state. The prisons at Ghent produce annually a clear income of £5000. In those now referred to, the inmates are principally employed in weaving linen, and in making shirts, pantaloons, and gaiters, for the army and colonies. On entering the building there is heard a noise of looms and machinery, which causes the visitor to imagine himself in a large active manufactory, rather than in a gaol. About 350 weaving looms are in full work, which gives employment to 700 individuals; the other male prisoners are employed as spinners, winders, &c. The work is conducted under a strict rule of silence. The appearance of the prisoners indicates good health and cleanliness. The women are lodged in a separate division of the building, and are generally occupied in sewing and spinning, some in weaving linen. The government assigns to the prisoners a certain portion of the produce of the work, and retains the remainder to meet the expense of their maintenance. The prisoners are divided into three classes; the proportion of profit allowed to each class differs according to the nature of the crime and punishment; part of this allowance is paid to the prisoners for present expenses, and part is placed in a savings' bank, bearing an interest of 4 per cent., and is given to the prisoner on his dismissal. The deposits have been so con-

siderable that the savings' bank of the prisoners now contains a large capital.—*Statement of R. W. Raueson, Esq., Hon. Sec. of the Statistical Society.* The official memorial in support of the *projet de loi* upon the Belgian prisons, presented to the Chamber of Deputies, on the 3rd of December 1844, states that, “during the two years, 1841 and 1842, the profit of the work of the prisoners in the five central prisons of that country had risen for one of those years to 149,600 francs, and for the other to 195,620 francs, after deducting the charges of administration and management”. [The report of M. Beranger (de la Drome), and the special commission to the Chamber of Peers of France, on the 24th April 1845, speaking of the prison of Melun, with an average of 1,058 prisoners, says—“If we deduct from the ordinary expenses the total produce of work during the year, arising from the profits of the canteen (the shop where the prisoners purchase necessaries), and the accidental receipts, it will be found that within about 5,000 francs, the personal expense of the prisoners, the general expenses of the prison, the cost of guarding and superintendence, and the repairs of the building, had been covered by the produce of the labour.”—See *Official Report, pages 113, 114*]. “10. That while imprisonment is used as a means of punishing and reforming criminals, the interests of the honest portion of the community have a right to be regarded, by enforcing the prisoners' employment in productive labour, if it can be accomplished without detriment to other portions of the community. 11. That John Howard, Archdeacon Paley, and Archbishop Whately proposed, and Capt. Maconochie has systematized and exemplified with success, a plan for calling into full activity the productive powers of a prison population, by regulating the quantity and quality of the prisoners' diet, and extending or abridging the duration of their confinement, according to their labour, industry, and conduct in prison. 12. That, in the opinion of this meeting, such a system of prison discipline applied to the cultivation of the land, would be adapted in this country to the punishment and reformation of the description of offenders, which constitute the principal portion of our criminal population, provided it were one of its fundamental conditions, that the labour should be severe, having reference to the age, sex, and strength of each individual; and that more bodily work should be exacted and less bodily comforts be given, than the same quantity of work could procure for an able-bodied industrious man in a state of freedom. 13. That proofs have been tendered to this meeting by Mr. Charles Pearson, that one thousand acres of suitable land might be purchased and enclosed in a wall, as lofty and strong as the wall round Millbank prison;

and that a gaol, with every requisite for the health and safe keeping of 1000 prisoners, might be erected at less than £100 per prisoner, being less than one half of the sum per prisoner which the Reading model gaol, without any land, has cost the county. 14. That it has likewise been offered to be proved that by the employment of the labour of the 1000 prisoners, the ground may be cultivated by the spade, the prison may be kept in repair, the prisoners may be clothed and fed, and a sufficiency of surplus productions may be disposed of nearly or entirely to defray all the charges of administration, from the superintendent to the lowest turnkey.”

In putting into execution a plan so novel as this, some caution will be required on the part of the managers. Many little mistakes may in the first instance be anticipated; but with prudence, patience, and firmness, I have no doubt all difficulties will soon be overcome.

Under proper arrangement, for instance, in placing the premises, and arranging the house drainage, a large and very powerful supply of liquid manure will be afforded to the land in the sewage; a supply which in the driest periods may be readily and profitably increased from springs or wells by proper pumps, worked by the prisoners.

It is, on so bold a scale, an almost untrodden field of exertion. The only partial examples, on an extensive plan, with which I am acquainted, is the spade husbandry of Flanders, and the farm of Mr. Mitchell, near Wymondham, in Norfolk, described some time since by Dr. Yelloley. But in all these instances the system is a compound of spade or fork husbandry and horse labour. The farm of Mr. Mitchell consists of 317 acres, viz., 207 acres of arable, and 110 in pasture and plantation. In this farm 20 labourers, besides a bailiff, were kept instead of 13 under the ordinary system, and six horses instead of 12. In this case it was found remunerative to dig, or rather fork, the land by piece-work, for which the men received, for land dug after a white crop, from 2d. to 2½d. per rod of thirty square yards. The ordinary earnings in digging are from 11s. to 12s. per week. The rotation found most adapted to this mixed kind of husbandry is one of seven years instead of four (*Brit. Farmer's Mag., N. S., No. 4*). In a farm worked by convict labour in the way proposed, a still more varied rotation may be found desirable. Upon the whole, I am much inclined to hope that great and enduring national good will arise from this proposed mode of making the idle and dissolute criminal maintain himself, rather than when idling away his time in prison, being fed and clothed by the labours of the honest and the industrious.

The proposed plan involves the use of a description of labour above all others the most healthy and desirable, the most conducive to the promotion of activity of the labourer, the avoidance of evil com-

munications, and the readiness of superintendence. It may, moreover, be made the means of making those large poor tracts of land productive that are now of very small and uncertain value.

REMARKS ON MR. LAWES AND HIS DEFENDERS.

BY A FARMER.

No. III.

There is nothing in the course of this controversy which has excited more surprise than the notice it has received. In ordinary cases the attack of an anonymous writer is allowed to pass unnoticed; and I can only conclude from the attention paid to these papers that more than one of my opponents must have felt the force of the arguments.

Professors Way and Johnston, with the editors of the *Agricultural Gazette* and *Farmers' Journal*, are formidable opponents; but as the elucidation of truth is the only motive that induced me to commence the dispute, and as it involves a question of great importance to agriculture, I shall not withdraw from the controversy until my statements are disproved.

The dispute now resolves itself into the question of "What is the source of the alkalies found in plants?" Mr. Lawes asserting, on the one hand, that these alkalies need not be supplied in manures, whilst I have endeavoured to show that they must. The discussion then involves the question, "What should artificial manures contain?" Mr. Lawes asserts that superphosphate of lime, consisting principally of sulphuric acid, phosphoric acid, and lime, is all that the plant requires to be added to the soil. On the other hand, I have endeavoured to show that artificial manures must contain, in addition to the above substances, potash, soda, magnesia, and (for some crops) silica, if we wish to maintain the soil in permanent fertility. This I think is a fair and candid statement of the question at issue; and the importance of it to the farmer is too evident to need any remarks of mine.

I sincerely regret that any part of the dispute should have been construed into a personal attack, than which nothing can be further from my intention.

I have been accused of misrepresenting Mr. Lawes' views respecting the necessity of supplying alkalies in manures. If the following expressions do not mean that they are an unnecessary addition, they have no meaning whatever. "The employment of potash, soda, magnesia, and silica, has been suggested by chemists: from an imperfect knowledge of agricultural chemistry; and should a farm

exhausted of its alkalies to the utmost possible extent come into the possession of a man of capital and experience, he may in a few years bring it into high condition, without imparting to it a pound of potash or soda. (Mr. Lawes' paper, pp. 258, vol. viii. *J. R. A. S.*)

Mr. Lawes in his reply to my remarks, has endeavoured to show that he does not especially recommend superphosphate of lime. What then is the meaning of the following? "*The only mineral which, under a proper system of agriculture, it is necessary to restore directly to the soil is phosphate of lime.*" (Mr. Lawes' paper, pp. 259.)

In support of my own view of this question, I have quoted from various sources, to which various replies have been made; but I certainly think that if I can show that Mr. Lawes himself, in one part of the papers before us, has advocated precisely the rule which I have endeavoured to lay down, and also that his staunchest defender, Professor Way, has also done so—if, I say, I can do this, I may surely conclude that the question is settled.

After quoting such a very intelligible sentence as the above from Mr. Lawes' writing, respecting the value of phosphate of lime, and the nonutility of the alkalies, it is rather strange to quote from the same author in support of the opposite opinion.

At page 259, it is said: "As long as bone-dust, superphosphate of lime, and guano, will produce a good crop of turnips, the farmer need be under no apprehension of his soil being destitute of alkalies." But, "besides phosphoric acid and lime, the ash of wheat and wheat-straw contains potash, soda, magnesia, and silica; and as superphosphate of lime contains none of these substances, its failure may be attributed to the absence of these minerals in the soil." (P. 242.)

So much then for Mr. Lawes. This testimony is not very clear; there is not so much emphasis laid on the necessary supply of the alkalies as the superphosphate. The one *may be used*, the other *must*; the former seems to have been written inadvertently, the latter is seen in every page. We will now turn to Professor Way, whose testimony, as late Professor of the Agricultural College, and

present consulting chemist of the Royal Agricultural Society, must surely be admitted as conclusive. He says, "When bones and sulphuric acid alone are used, where is the plant to obtain its magnesia and alkalies? *Certainly not from the bones.* It is to no purpose that we feed a plant liberally with one element necessary to its growth, if we deny it another equally indispensable. Upon these grounds we recommend, in addition to the bones, the following mixture: 1 cwt. pearl ash, $\frac{1}{2}$ cwt. Epsom salts, 3 cwt. common salt." (P. 204, vol. viii. *J. R. A. S.*)

I need hardly point out that the above mixture is *exactly what Mr. Moffat recommends*, and whose testimony in behalf of my own views I quoted in the first paper on this subject.

Professor Way's opinion is so strikingly corroborative of my own, that I regret not having previously met with it, as it would certainly have lessened the number of my opponents, by preventing him from joining in the dispute. But as it would also have deprived me of the pleasure of the defence which Mr. Rawlandson, of Liverpool, kindly volunteered, it is the less to be regretted; more especially as the ridiculous manner in which the Professor drew in his horns on the first appearance of danger has quite atoned for his interference.

Whilst discussing this important question, I have been led to animadvert in strong terms on the state of agricultural chemistry in Great Britain, as exemplified in those papers by Mr. Lawes. Most of those who have noticed my remarks, instead of entering into the merits of the question, have contented themselves with stigmatizing me as "rough," "ungentlemanly," and "insolent;" but as such expressions are not arguments, I cannot, of course, reply to them.

Perhaps the strongest proof of the present state of agricultural chemistry in Great Britain is the present dispute; for I can scarcely think it possible that *any* one can be serious when he says that the use of *any one* of the substances found in our plants can maintain the land in fertility. I am satisfied that no school of chemistry out of England—not even the veriest tyro from a German laboratory—would disgrace himself by maintaining an opinion which is at once contrary to reason and common sense, to say nothing about chemistry or vegetable physiology.

The remarks which I ventured to make, respecting the present state of agricultural chemistry in England, have drawn from Professor Way and the editor of the *Gardeners' Chronicle* the following eulogium on Mr. Lawes: that "the really eminent of the scientific world unite in placing his labours amongst the most important which have of late

years been given to agriculture." In reply I would ask for an answer to the following questions—

What do Mr. Lawes' papers teach?

What principle do they establish?

What obstacle to the progress of agriculture do they remove?

I can obtain no other positive information from them than that superphosphate of lime is the *summum bonum* to the farmer.

I shall now briefly again revert to Mr. Lawes' papers, to show the character of what is so highly praised as being of so much importance to agriculture.

It seems that "plants are required in two distinct conditions; one in which the nourishment is more or less *circulatory*, the other in which it is fully *elaborated* and deposited." From the same source we learn that the "farmer possesses the means of developing the *circulatory* and *elaboratory* conditions of plants," though in some cases "the seasons set his labours at defiance, for an entire absence of the climate necessary for an enhanced *accumulative* and *circulatory* condition of plants prevents the growth of the spring crops." These are the precious conclusions Mr. Lawes arrives at from his experiments. What is the meaning of the words *circulatory*, *elaboratory*, and *accumulative*, as applied to plants? What is the poor ignorant practical farmer to conclude from the above conclusions? My own conclusions have been so often expressed that I need not repeat them here; besides, I venture to say that neither Lindley, Schleider, Jussieu, nor Linneus, ever heard of these strange properties; *elaboratory*, *accumulative*, and *circulatory*, are decidedly new terms in science; and worse than that, they are without meaning.

Most farmers have a common wheel barometer, at which they tap very anxiously every morning during hay time and harvest. Mr. Lawes recommends them to add to their stock of scientific instruments "a rain gauge and register thermometer; these are all the apparatus required to enable the farmer to estimate the quality and produce of his crops before a grain has been removed from the field." Well done! Mr. Lawes. We are now much in want of agricultural statistics. If the farmer by means of the rain gauge and register thermometer can estimate his crops, all that the government requires is to appoint some intelligent person (Mr. Lawes, for instance,) to inspect the rain gauge and registered thermometer at Greenwich, and the value of our corn crops is at once ascertained. Our Parliament can then be under no difficulty in legislating for a future famine in Ireland, or our merchants in ordering their corn.

"We now," proceeds Mr. Lawes, "arrive at another important question—What is meant by

quality in wheat?" This grain "*belongs to a class of plants proverbially characterized as yielding starchy seeds, and whose predominant peculiarity it is to yield carbonaceous substances.* It is, therefore, probable that those millers who prefer a perfectly developed grain pay the highest price for that which contains the most starch."

Is it possible that Professor Way can pronounce the previous sentence amongst the most important which late years have given to agriculture? He cannot but know that the characteristic of wheat is the very reverse of "*yielding starchy seeds or carbonaceous substances.*" This is the characteristic of the potato, rice, and sago; the superiority of wheat as an article of food over these substances consists in the relatively greater proportion which it contains of gluten or albumen, as compared with the potato and other vegetable products of that class. It is a recognized fact that (other things being equal) the more nitrogen there is in an article of food the more nutriment it contains. Mr. Lawes cannot dispute this, and yet he says* that millers in purchasing a perfectly developed grain obtain "*that which is richest in starch,*" or, in other words, that *the finest samples of wheat are the poorest in feeding properties.* Any comment of mine upon the absurdity of this assertion is unnecessary.

It might have been thought, that having once made a conjecture the writer would then have left it; but no, he proceeds on in the above style; and having directed the miller which sample to purchase, and the housekeeper which priced flour to use, he next enters into a short lecture, directing the colonists how to grow sugar; in the course of which he comes out as follows: that "*it is probable that the heat capable of being eliminated by the process of animal respiration must first have been rendered latent during the growth of the plant.*" One of his defenders asks, Is it possible that the "Farmer" can be so ignorant as not to know such and such things? Can any one, pronouncing the paper on which we are at present commenting to be the most valuable one recently given to agriculture, be so ignorant as not to know that there is less latent heat in vegetable substances than in the air which we expire?

The following explanation of the cause of corn breaking down has the merit of being both new and unintelligible. "Were I," says he, "to supply the proportion and quantity of mineral and organic manures necessary to produce fifty bushels of wheat in a wet, cold summer, it would unduly develop the *circulatory* condition of the plant; its *vascular* structure would be increased to an in-

jurious extent, and the crop would be laid." The mouse as a termination to the mountain in labour is not half so inglorious as the corn being laid, after having had its *circulatory and vascular structure disarranged.*

But what will the farmer think of that science which tells him that his turnip tops are more valuable in feeding properties than the bulbs? This is another of the conclusions which have been arrived at by Mr. Lawes. That gentleman himself well remarks that "*the contempt which the practical farmer feels for the science of agricultural chemistry arises from the errors which have been committed by its professors. They have endeavoured to account for, and to pronounce as erroneous, the knowledge which ages of experience have established.*" In these words he has ably and accurately described himself, and the consequence which must follow his writings. I wonder he never thought of the "*contempt which every practical farmer would feel for the science of chemistry,*" when told that though "*ages of experience*" proved the turnip to be more valuable than the top, he had been during all these ages labouring under a gross mistake; though his fathers and grandfathers had fattened their cattle, and paid their rents, under the false idea of the value of turnips; though all the chemists, from Sir Humphrey Davy downwards to Mr. Lawes, had paid great attention to the subject, it was reserved to Mr. Lawes to remove the ignorance, by making the extraordinary discovery that turnip tops were more nutritive than the bulbs.

After the above quotations, and those already given in my previous remarks, I cannot place the character of the scientific information and practical deductions they contain in any stronger light. Perhaps I may be allowed again to allude to the sentences containing the words, "*vascularity;*" "*special deposition;*" "*the actual and fixed, as well as the prospectively possible elements—the latter as yet only in a vehicular condition;*" the vehicular "*element chlorine;*" and many such like, to raise a feeling of astonishment at what has been pronounced to be the most valuable contribution modern science has given to agriculture.

To conclude. The farmers will be rejoiced to hear that Professor Way says, that science holds out hopes that *we shall ultimately be able to do without manure altogether.* I think I am not far wrong when I say that the time when our plants can do without manure will be *cotemporaneous* with the time when we can do without food. The only parallel I have ever heard of, to this opinion of the learned professor, is that of the Irishman who undertook to teach his horse to live without food, and just when the experiment got so interesting

* R. A. S. Journal, p. 235.

that the animal could live upon a straw per day, it unfortunately died. I have heard of science arriving at such a perfection as to enable the farmer to carry the manure out to his field in his coat pocket, and bring the crop home in his waistcoat. This is well enough, and can be imagined; but the Professor's idea leaves it far behind.

Mr. Lawes says, in his reply to my first paper, that unless his views are again attacked by an "acknowledged and creditable opponent" he will not further enter into the discussion. As the "Farmer" can have no hope that he will be again considered an "acknowledged and creditable opponent," he begs respectfully to direct that gentleman's attention to his friend Professor Way, who, it appears, is of the same opinion as the "Farmer," and must surely be an opponent worthy of his metal.

Until those who differ from me in opinion can bring other arguments than the words, "rough, ungentlemanly, and insolent," in support of their view, I shall content myself with being the "chief

among them 'takin' notes," and occasionally printing them.
T. L. C.

P. S.—The editor of the *Farmers' Journal*, after partly acknowledging the mistakes which he made in his review of my remarks, again enters into the dispute, as follows:—"Was the Farmer," says he, "so ignorant as not to know that the phosphate of lime was a peculiar phosphate? Professor Johnston gives the formula of 51½ per cent. of lime and 48½ of acid." Is the editor so ignorant of chemistry as not to know that the above is not a formula, but a proportion? But perhaps the editor does not know the difference between these two expressions; and if not, we cannot be surprised that he should be "more convinced of the correctness of Mr. Lawes' theory and the untenableness of T. L. C.'s and Mr. Moffat's." Perhaps he will also in future direct also his remarks at Professor Way, as we find that he is of precisely the same opinion as the two latter.

ON THE PRACTICAL USES OF THE NATIVE PHOSPHATE.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—The attention of the agricultural world being at length aroused from the apathy in which it has so long lain dormant, the sun of intellect arising, and by his genial beams dispelling the mists of ignorance and prejudice, it becomes us to use our utmost endeavour to avail ourselves of the advantages and opportunities offered, of acquiring in some measure an insight into the knowledge which is daily brought under our notice by the aid of chemical and scientific research; but, at the same time, it requires more than ordinary care and circumspection to acquire (out of the mass of information) what is really of a useful, practical character, and avoid that which (being advanced in theory) cannot be supported in practice, greater discrimination being required than what at first would appear to be requisite; the sole object of acquiring which knowledge being, that we may be in the position of proceeding in the most economical, as well as beneficial manner, in the various details of agriculture, at this time it applies with most peculiar force, the object aimed at being to produce the heaviest crop at the least expense.

The crop on which the farmer places his chief or principal dependance is the turnip; and therefore any information, from however humble the source, that serves to impart any assistance towards the furtherance of this desirable object, must be of interest, and attended with benefit.

Bones have for years stood the test of practical experience, proving them to be of considerable importance in the raising of this valuable and necessary root. Lately, through the instrumentality of the chemical researches of Professor Liebig, the formation of a salt, called the superphosphate, has attracted well-merited attention: its application proving, that when the proper and necessary nutriment of the plant is furnished in that form in which it can be received as such into the system, its action is more immediate, and its effects more beneficial; not being so dependant upon atmospheric influence to cause the necessary transformations before the manure can be serviceable to the crop to which it is applied. This substance, in most instances, has overcome the difficulty experienced of forcing the plant out of the way of the fly; which is an object of the highest importance.

It is now barely a twelvemonth since attention was first directed to the deposit of phosphoric acid in many districts of this kingdom. It was thought then to be, by its discoverers, calculated to confer an immense benefit upon the agricultural community, by its ultimate adoption in furnishing a cheap, effectual dressing; and there can be no doubt whatever that when its nature is more accurately understood, it will prove a source of great national benefit; opening, as it now does, a wide and extensive field for impartial scientific enquiry.

But owing, in a great measure, to the imperfect knowledge of its nature and the form under which it there existed, as well as of the most efficient way of applying this substance, many failures have occurred from its application; perhaps a few moments devoted to the consideration of this subject may not be lost or uninteresting, in endeavouring to ascertain the reason and cause of this seeming contradiction of the expressed opinion of those eminent men, who first drew attention to it, having found by analysis the native phosphate in such proportions as have from time to time been promulgated.

The experience of the past year shows the great care and caution that ought necessarily to be exercised by the practical man before he hastily adopts any scheme which may have been advanced, even by the highest authority, for his benefit. But when he does do so, it then is incumbent upon him to make himself first fully acquainted with the subject in all its practical bearings; so as not to allow, in case of a failure, the censure of ignorance to be passed upon him; nor yet for him too prematurely to condemn the opinion and judgment of others, in consequence of his not having derived the expected benefit, as many reasons may be assigned for its benefit in one instance and failure in others; for it cannot be expected that the same result will in all cases be experienced, when we consider the extreme dissimilarity there exists in soils and localities.

The first point of consideration, towards arriving at a satisfactory conclusion respecting the practical adaptation to agriculture of the native phosphate, is to ascertain its presence and determine its quantity in the substance used. For this purpose we must depend chiefly upon the opinion and researches of others, who are capable of surmounting this difficulty by the aid of chemical analysis; as it is an experiment of the most delicate nature, requiring the greatest care and attention on the part of the analyst to determine it accurately—which unless so done, the examination is worse than useless; and calculated to lead to disappointment and error. Many of the most experienced chemists have at times found a difficulty in ascertaining satisfactorily the presence of this substance; and therefore, in the hands of the unskilled, it is more than probable that the result would not answer the expectations. For some time I experienced considerable difficulty in conducting this operation, owing to its nature and the small amount generally found to exist in soils, &c.; having more than once been baffled, when arrived at that interesting point, to find disappointment staring me in the face, although confident that a portion was present; but, by accident, a means was discovered, which being since adopted has answered in a most satisfactory

manner in determining its quantity most accurately; thereby overcoming the difficulty which so often presented itself in conducting an analysis, especially for the purpose of ascertaining the presence and amount of phosphoric acid in any substance; the presence of which substance being so necessary and of such importance, it requires the whole care of the analyst to determine it, and consequently in many instances is lost either by too much haste or not sufficient attention.

Having, then, got the right substance; the next step is to render the phosphate contained in it capable of being assimilated by plants; for if applied in its natural, crude state, a failure in most respects (in its most important part) must be the inevitable result. Why? Because the phosphate contained in this substance being insoluble in hot and cold water, it depends entirely upon the action of the sulphuric acid contained in the soil for its decomposition and consequent effects: and the proportion of this acid, as generally found in soils, is of such a nature that its action upon the phosphate would cause such a slow, gradual decomposition to ensue, that its beneficial effects would in many instances scarcely be perceived, and in others not at all, owing to the time it would require to reduce the phosphate to that state in which it would be serviceable to vegetation. Neither could it act so rapidly and beneficially upon the phosphate here applied as on that contained in bones having been subjected to the process of boiling, because the acid has to overcome the difficulty in the former which has been removed in the latter.

It therefore appears that to apply it in its natural state no benefit is likely to accrue from the application. The experience of many during the past year can bear evidence of the truth of this statement; and many who may have tried it in this state might be too apt to condemn the inquiry in consequence of their failing to meet the expected results, although what they did apply might have contained a large per centage of the phosphate; but unless manure is supplied in that form in which it can be received into the organism of plants as nourishment, it is of no use whatever.

As the benefits resulting from the application of the superphosphate are now so generally acknowledged, that being nothing more than rendering the phosphate in that state which plants require in their earliest stages for their future development, and more suitable to be received into the organs of their delicate structure, let the phosphate here contained be also reduced to a similar state by the aid of sulphuric acid, and the same results will accrue from the application; for unless the phosphate is liberated from its antiquated store, no beneficial result can possibly arise from it. This

seems to have been an error into which many have fallen; believing there was nothing more to do than to get the proper substance, and leave its action to atmospheric influence; not knowing that the ingredient, on which they placed their chief dependence, was acted on so slowly as not to be of benefit to the crop to which it was applied; and therefore requiring artificial means to render that substance of service.

This is no idle theory or supposition, but what can be substantiated by practical facts in support of the soundness of these observations. I beg to draw attention, as an example, to the results of an experiment already published by the Rev. A. Huxtable, who, by the aid of 2 cwt. of coprolites (the substance containing the native phosphate), *dissolved in half their weight of sulphuric acid*, and seven put-loads (one-horse loads) of dung, with sulphuric acid, he was enabled to carry off the prize for swedes at the Sturminster meeting, establishing the fact of the great importance of this substance when judiciously applied. Further comment on this is unnecessary.

The last point to be considered on this interesting subject will be the most beneficial, as well as economical, method of supplying this substance to the growing crop. This, I unhesitatingly affirm, will be effected most beneficially by the aid of Mr. Chandler's liquid manure drill. First treat the native phosphate with half its weight of sulphuric acid, then dilute it with the quantity of water (or the drainings of the yard) that may be thought proper, according to the convenience and option of the grower, and drill it in with this admirable implement. This, no doubt, would be the most judicious way of applying it, but in some situations could not be followed advantageously, owing to the distance of water; but, where it is convenient, the expense will be no more than applying ashes, &c. In the absence of water it might be mixed with ashes, and drilled in the same manner as the superphosphate. The slightest observer of the economy of the vegetable kingdom must be impressed with the conviction of the truth and simplicity of the application, rendering to the plant the sustenance it requires in its earliest stages, in that state in which it can be absorbed by the delicate rootlets immediately; for we must bear in mind that all manure, or whatever enters into the structure and constitution of the vegetable world, must be reduced to a soluble liquid state before it can possibly be received by them into their organism as nutriment.

Another great advantage attending this system of manuring is, that during a dry season no time is lost in sowing; for we all know the difficulty we experience in endeavouring to get a plant

or keep it in a growing state during a succession of dry weather.

Although the superphosphate is a strongly deliquescent salt, yet, when mixed with ashes and drilled in during such weather, the quantity applied is in some instances hardly sufficient to extract moisture enough from the atmosphere to keep the plant in a thriving state; but if the land is in a finely pulverized state, the quantity of liquid applied, owing to the deliquescent nature of the superphosphate, will then afford sufficient moisture to carry the turnip or mangold for a considerable time without the aid of the refreshing rain. On all sides we hear and see the beneficial results attending this application in this county, which no doubt will be generally adopted where possible.

It will also be satisfactory to bear in mind that this was the system suggested by Professor Liebig, the introducer of the superphosphate* as the most beneficial way to apply it; but, owing to the difficulty experienced of applying the liquid, it was abandoned, and the mixing the substance with ashes adopted, as being more practicable: which difficulty being now done away with, and the impediment removed by the introduction of this implement, we may now return with safety and confidence to the original suggestion.

In the application of this or any other artificial manure we must be careful of placing too much dependence upon them for a crop, remembering they are only auxiliaries to the yard manure, and generally contain only one principal ingredient. For instance, take the native or superphosphate; a small quantity of either per acre will be sufficient for the turnip crop in its early period of growth. But, owing to its immediate action, it is either quickly absorbed or dissipated; and plants, which up to a certain time have appeared strong and flourishing, droop off and gradually decay without any apparent reason. But the truth lies at the root having been hitherto sustained artificially, and those means being exhausted they naturally die for want of a continued source of that nourishment; not but what excellent crops are raised by the aid of the superphosphate alone, but as a general system it cannot be recommended. The surer method of pursuing will be to apply a slight coat of yard dung as well; then by the time that the artificial is exhausted the other will carry the crop to perfection.

The deposit of the native phosphate is more general than it was at first expected; the difficulty seems to be to find it in sufficient quantity to pay for extraction. On the farm I occupy I have found a strata, about two feet thick, very rich, one specimen containing 18 per cent.; and I have no doubt, when

* See page 184 of "Liebig's Organic Chemistry."

examined more minutely, others might be found that contain a much larger per centage; but being late when it was found, and the land coming in for wheat, I was only able to make a cursory examination, but still sufficient to stamp its importance, which at some future period may be attended with some practical benefit.

In taking leave of this subject, I trust those who have experienced a disappointment in the application of this substance during the past year will not be daunted at the unsuccessful issue of their labour, but redouble their exertions, and endeavour to ascertain the reason—whether some misapplication, or not correctly understanding its nature, may not

have caused it; and also that those scientific men who have now fairly introduced it to the farmer will lend their aid to render it subservient to the purposes of practical agriculture, and remove the impediments from the path of its general adoption, by doing which they will confer a great boon on the agriculturists of this kingdom; so that by the union of these two important classes the expectations of its introducers may be realized.

I remain, sir, yours truly,

GEORGE AUSTWICK.

*Hunt's-hall Farm,
Feb. 13, 1849.*

COLMAN'S CONTINENTAL AGRICULTURE.

BY T. L. C.

(Continued.)

Besides the peculiar law affecting landed property in France, which we commented on in the last number, there is another arrangement, to which we have no counterpart in England, and it is one in which we are very deficient, namely, the machinery provided by the French government for procuring statistical returns connected with agriculture. In the first place there is in the Government a department of agriculture, the secretary or minister of which, being one of the first men in the kingdom, is expected to look after this great interest; to obtain statistical returns of agricultural produce from all parts of the kingdom; to learn what improvements have been made, what improvements are most required; and what is the condition of the agricultural population.

The statistical returns of the produce of France have been recently completed, and show a work of immense industry and labour, containing a mass of information which reflects the highest honour on the government, and on the persons employed in its execution.

It seems strange that there should be a moment's hesitation about obtaining such information in England, where it might be so easily procured. The benefit it would be to every one, without the alloy of injury to a single individual, imperatively demands some arrangement for procuring, at least once a year, a statistical account of our agricultural produce.

Considerable attention has from time to time been directed to the evils produced by allowing cattle to be slaughtered in our crowded towns, where the effluvia produced by the decomposition of the blood and fecal matter must undoubtedly

be the fertile source of disease and death. There seems to be in England a most anomalous dread of interfering with "vested interests," no matter how injurious they may be to the community. In this respect we think that an occasional *mild* despotic government would do us good, and in no point more evidently so than by copying the abattoirs or slaughtering-houses in Paris, where there are five of these establishments close to the barriers. No cattle are allowed to be driven through the streets of Paris, unless it be very late at night; and no person is allowed, under any circumstances, to slaughter cattle in the city. What a contrast to our Smithfield! "The abattoirs of Paris have now been established more than thirty years; and yet London, perfectly aware of their eminent advantages, submits to the terrible nuisance of a crowded cattle market in the midst of its thickest population, to and from which cattle are driven at all times of the day and night, to the great terror of, and often at the peril of life and limb to, the passengers. Slaughter-houses are to be found in all parts of the city—the Newgate market is completely underlaid with subterranean slaughter-houses of an odious description, &c., &c. The project for the removal of the Smithfield market has been defeated, and a public dinner been held to celebrate the triumph of the successful party. It ought to have been given in one of the subterranean slaughter-houses of Newgate market." No remarks of ours can place this subject in a stronger light than the above quotation. In this day of enlightened legislation a change for the better, not only in London, but in all our large towns, cannot be far distant.

Connected with the above subject as far as re-

gards the public health, there remains one establishment to be spoken of, directly connected with, and of great importance to, agriculture. In some respects (says Colman) the habits of the French, both in their houses and in the streets, are execrable and abominable. No familiarity in any degree can reconcile a delicate mind to them; and exposures are frequently witnessed in the public streets, which are absolutely brutal. Rome, Florence, and Naples can hardly be considered other than three great public necessaries, where the most sacred places are hardly free from nuisances which shock all decency and reverence.

Whilst the value of the filth and refuse of our large towns to agriculture is so well known, there is no harder question than how to turn them to the best advantage, without injury to health. There can be no doubt but that they ought not, as in England, to be allowed to be washed into the nearest river; and we look with some degree of interest to the proceedings of the London Sewage Manure Company, as the first attempt to turn to profit this source of agricultural wealth.

In Paris all the fecal matter is saved, and by various processes* rendered useful to agriculture. "Chemistry would perform an immense service to agriculture if it could discover a means of preparing this substance in a portable form, and in which its efficacy might be preserved."

The subject of agricultural education has received much attention in France; that attention is increasing, and new institutions are springing up, to which the government promptly lend their aid. Colman's remarks on this subject are so much to the point, and we fear that, without the risk of making this article too lengthy, we could scarcely do him justice; we will therefore perhaps again recur to the subject at a future time.

The crops cultivated in France are the usual cereal grains—wheat, rye, oats, and barley—together with what, as compared with England, may be called peculiar crops—wine, silk, and sugar.

Colman states that more than one-half of the wheat grown in Europe is produced in France. From the best statistical accounts that can be obtained, the wheat annually produced in—

	Bushels.	Total contents in square miles.	Population.
Great Britain and Ireland	111,000,000	90,000	23,000,000
France	198,000,000	154,000	32,000,000

From two to three bushels are sown to the acre,

and the produce is from 6.25 to 5.10 for one, against (according to Colman) 9 for one in England.

Bare fallows are said not to be much in use, and yet Colman does not give us any account of a recognized rotation. Indeed it must be difficult for a stranger, without a long sojourn in a country, to give any idea of this important part of its agriculture, and in which, we would rather infer from Colman's book, the French are deficient.

There is cultivated in France and in Flanders an inferior kind of wheat called Spelt (*Triticum spelta*): we are not aware that it has ever been grown in England. In nutritive matter it is said to bear a proportion of 39 to 50 of wheat. It is occasionally cut as green food, like rye in the south of England.

Rye is very extensively cultivated in Europe; in Germany, in Belgium, in the cold and mountainous districts of France, and in Russia, it is their main dependence. In Flanders it is extensively used in the distilleries.

Barley is not extensively cultivated in France, as wine forms the common drink of the country. Besides the above grains, Colman enumerates maslin (wheat and rye mixed), maize, buckwheat, millet, clover, and lucerne, as ordinary crops in France, but without giving any information respecting them which will be interesting to the English farmer.

The cultivation of beet-root for sugar is peculiar to France, and one or two of the neighbouring countries. It is said by Colman to be a very profitable business; but we cannot but think that when the true interests of nations are understood, sugar will be better and more cheaply purchased from some of the inter-tropical countries, and the soil of France more profitably devoted to the growth of the cereals, &c.

The growth of the silk-worm and manufacture of silk is of great importance in France: "its utility is unquestioned and universal; the amount of industry it sets in motion is immense, and the splendour and beauty of the fabrications of which it forms the *materiel* are unsurpassed."

Next to the silk trade in point of importance comes the wine trade, the yearly value of which is said to be upwards of £2,300,000, six-tenths of which is consumed in France.

We will now proceed to the agriculture of Belgium and Holland, which in some of its conditions and arrangements is quite peculiar to that district. A great portion of the soil of these countries is alluvial, and is only prevented from being again covered by the sea by the erection of immense embankments. Much of this country is actually below the level of the sea, and can only be drained by the use of mills, and it is said that about 5,000,000

* See Dumas, on the Manufacture of Manure, in the Farmer's Magazine.

acres have thus been redeemed from the sea. A project has recently been started (and we believe is now in operation) to drain the lake of Haarlem, covering 50,000 acres. In order to effect this 3,000 millions of tons of water must be raised; and in order to keep it dry, 54 millions must be raised annually. Some idea may be formed from this statement of the extent and importance of these works in Holland.

The agriculture of Flanders is chiefly arable, "and I begin by saying that it is superior to that of any country I have yet visited." The great agricultural implement is the spade. The farms are small, in many cases not more than 50 acres, and often less. The land is very deeply cultivated, for which its alluvial character well adapts it. The following is a common rotation, and to be profitable requires indulgent manuring upon a light soil,

1st. Potatoes.

2nd. Wheat, with turnips in the autumn.

3rd. Oats (*this we think is wrong*).

4th. Clover.

5th. Rye, with turnips in the autumn.

6th. In grass, to remain as long as profitable.

If we had land in England good enough to support the following rotation, we could make as much of it as they do in Flanders:—

1st. Turnips, carrots, or chiccory.

2nd. Oats.

3rd. Clover.

4th. Wheat.

5th. Flax.

6th. Wheat!

7th. Beans!!

8th. Wheat!!!

9th. Potatoes.

10th. Wheat!!!

11th. Oats!!

The land is manured in the 1st, 3rd, 4th, 7th, and 9th years. The Flemish call manure "the god of agriculture;" and they spare no trouble to collect it, both liquid and solid. In its application two objects are aimed at: the one, to have the manure in a form in which it can be immediately taken up by the plant; the other, to apply it at a time when it is directly needed. This subject has not yet met with the attention it deserves in England. "Deep cultivation, liberal and thorough manuring, a careful and well-tryed rotation of crops, and a thoroughly clean cultivation, may be said to constitute the great principles of Flemish agriculture, an agriculture for which it is not easy to find a parallel." Their carefulness in saving everything which is in itself, or which can be converted into manure, is most exemplary and worthy of imitation. Colza, navette, carneline, and white mustard are crops peculiar to Flanders, and certainly

bespeak a finer climate and richer soil than the generality of England. Tobacco, madder, and woad are also grown to some extent.

Colman says that the agricultural implements are few and simple, contrasting advantageously with the English, which he says are clumsy, heavy, and inordinately expensive, and "best answer the purposes of the ingenious mechanics; who understand very well when they have got their pail under a cow with a full udder, and how in the most agreeable manner to abstract the gold from the pockets of enthusiastic agricultural amateurs!"

In respect to live stock the continental countries are all greatly behind England.* The Flemish horses are, however, unexceptionable, and in France they are not so usually castrated as in England. The swine are "miserable, lank, lean, and gaunt; and if they have not one good point about them, they certainly have other points in great profusion—the race seems under a curse." At Gregnon, a government agricultural establishment, there have been some of the improved English breeds introduced. Some of the continental breeds of sheep, as the Merino, certainly surpass our English sheep in quality of wool, but we rather suspect that they are inferior in quality of mutton, symmetry of form, and early maturity.

In conclusion, we would be glad to meet with other works from Colman's pen, on the agriculture of those parts of Europe which he has not yet visited, only we would advise him as far as possible to divest himself of his republican tendencies and his prejudice against England, where, notwithstanding all that can be said to the contrary, we are yet disposed to think that price of labour and difficulties from climate being taken into consideration, there is as much made of the land as in any other part of the world.

THE EXPORT TRADE OF ENGLAND.

The valuable statistical tables of the exports of England, published annually by Mr. Burn, of Manchester, and known under the title of the "Commercial Glance," have just been issued for the year 1848. By comparing the aggregate amount of exports in the year just passed with 1847, we find that the balance is in favour of 1848. But on comparing the exports of the past year with 1846, which, from the high price of cotton in 1847, it is necessary in order to arrive at a just conclusion to do, the results are somewhat different, for we not only find that the exports of last year were less than in 1846, but that there was less cotton consumed, and

* Colman says that in parts of Ireland the hay is carried to market in two large bundles swung across the back of a donkey.

consequently less employment for the artizan, and, above all, less profits. Cotton in 1847 was double the price of 1848, yet in 1847 goods rose only five per cent., while in 1848, when cotton was half its former price, goods fell no less than fifteen per cent. The free-traders are fond of dealing with fictitious figures, and delight in mystifying the public by what they term their "statistical facts." Such assertions, from the impossibility of at once giving them an immediate refutation, pass muster

for a time, and then the cheat is discovered. In opposition to the boasting language of the Cobdenites, and the "deliberate judgment" of the ex-premier, we beg to offer the following results of the operation of free-trade during the past year. These figures, we should premise, are published under the sanction and authority of the Manchester Chamber of Commerce, and the tables, compiled with great care, are remarkable for their general accuracy:—

EXPORTS FROM ENGLAND.					1846.	1847.	1848.
Cotton yarn (lbs.) .. .. .	..	..	..	..	157,130,025	116,512,874	127,121,446
Cotton thread (lbs.) .. .. .	..	..	..	..	2,320,335	2,855,941	3,523,642
Damask and diapers (yards) .. .. .	..	..	..	..	9,505	20,312	28,489
Cambrics and muslins (yards) .. .. .	..	..	..	..	4,459,769	5,010,117	5,200,925
Dimities (yards) .. .. .	..	..	..	..	28,437	19,106	21,613
Lawns and lenos (yards) .. .. .	..	..	..	..	8,111	3,193	9,360
Calicoes, plain (yards) .. .. .	..	..	..	..	611,839,181	488,044,682	566,199,538
Counterpanes and quilts (number) .. .. .	..	..	..	..	113,059	208,005	157,700
Cotton and linen, mixed (yards) .. .. .	..	..	..	..	1,125,764	1,433,879	2,392,992
Ginghams (yards) .. .. .	..	..	..	..	591,489	825,430	1,096,750
Cords, velveteens, and velvets (yards) .. .. .	..	..	..	..	1,901,294	2,770,943	2,541,436
Nankeens (yards) .. .. .	..	..	..	..	134,553	18,515	14,539
Quiltings and ribs (yards) .. .. .	..	..	..	..	116,721	79,511	58,238
Calicoes, printed and dyed (yards) .. .. .	..	..	..	..	267,084,797	287,384,903	301,515,780
Hosiery (dozens) .. .. .	..	..	..	..	350,750	326,246	247,780
Shawls and handkerchiefs (dozens) .. .. .	..	..	..	..	545,823	725,263	677,568
Lace (yards) .. .. .	..	..	..	..	88,086,725	83,301,504	65,369,043
Tapes, &c. (dozens) .. .. .	..	..	..	..	12,128	8,815	24,360
Ticks, &c. (yards) .. .. .	..	..	..	..	144,047	149,385	169,851
Unenumerated cotton goods (£) .. .. .	..	..	..	..	54,167	95,486	146,594

The following is a statement showing the average prices of manufactured goods exported in 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, and 1848:—

Description.	Nos. above.	Length of Piece.		Weight of Pieces.	1848		1847		1846		1845		1844		1843		1842		1841		1840		1839	
		yds.	lbs. oz.		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Calicoes printed and dyed	7	28	4 4	9 0	10 6	9 9	9 6	9 5	8 11	8 9	9 0	10 4½	10 6											
Calicoes, plain	6	24	5 12	6 0	7 1	6 9	6 6	6 4½	6 2	6 0	6 0	7 6	7 10											
Cambrics and muslins	8	20	3 0	6 9	7 4	7 0	6 9	6 8	6 4	6 3	6 6	9 0	10 0											
Cotton and linen, mixed	14	40	8 0	9 0	10 6	10 0	9 9	9 7¾	9 4	9 3	9 4½	9 4½	9 6											
Dimities	3	60	12 0	19 6	22 6	21 6	21 0	19 9½	20 0	20 0	20 1½	20 1½	20 4											
Damasks and diapers	10	36	10 0	18 6	21 6	20 5	19 11	19 10	19 0	19 0	19 0	19 0	19 6											
Ginghams and checks	15	20	3 8	8 6	9 6	9 1	8 10	8 9½	8 5	8 3	8 6	9 6	10 0											
Lawns and lenos	11	20	2 8	9 6	10 6	10 0	9 8	9 7	9 2	9 0	9 0	9 0	9 0											
Lace, net, &c.	13	50	0 8	8 6	9 6	9 0	8 9	8 8	8 4	6 3	8 6	9 0	8 9											
Nankeens	9	50	8 8	15 6	17 2	16 4	16 0	15 9	15 2	16 0	15 0	15 11	16 9											
Quiltings and ribs ..	5	60	18 8	39 0	43 0	41 0	39 11	38 6	38 0	38 0	38 1½	38 1½	38 6											
Ticks, checks, &c. ..	18	50	20 0	18 0	20 6	19 8	19 3	18 9	18 4	18 3	18 9	18 9	18 10											
Velveteens, cords, &c.	16	60	22 12	39 0	43 0	41 0	39 11	38 7	38 3	38 0	38 3	38 3	39 0											
Counterpanes, &c. ..	4	No.	7 8	4 0	4 6	4 4	4 2	4 2	4 0	4 0	4 0	4 10	5 0											
Hosiery	12	Doz.	2 8	8 9	9 9	9 4	9 1	9 0	8 8	8 6	9 0	9 9	9 9											
Shawls and handkerchiefs	19	Doz.	2 8	3 6	4 0	3 9	3 7	3 7	3 5	3 3	3 9	4 9	4 10											
Tapes and bobbins ..	17	Doz.	1 0	1 9	2 1	2 0	1 11	1 10½	1 10	1 9	1 9	1 9	1 9											

THE LONDON FARMERS' CLUB.—MONTHLY DISCUSSION.

The first monthly meeting of the members, for discussion, during the present year, took place at the Club Rooms, Blackfriars, on Monday evening, Feb. 12, when the chair was taken by the new president, R. Smith, Esq. Though the attendance was not numerous, the discussion was one in which the greatest interest was manifested, the subject being, in the terms of the card, "The Burdens pressing upon Agriculture, especially in reference to the Malt-tax." The introducer of the question was Mr. S. Cheetham, of Oakham, Rutland; and among the gentlemen present were the following:—Robert Smith, Esq., late of Burley, and now of Emmett's Grange, Devon, in the chair; supported by, amongst others, Messrs. W. Bennett, Lewsey, Beds; J. Pain, of Felmersham, Beds; W. Fisher Hobbs, of Boxted Lodge, Essex; J. J. Mechi, of Tiptree Hall, Essex; W. Shaw, of the Strand; Rev. J. Y. Cook, of Semer, Suffolk; J. Hudson, of Castleacre, Norfolk; E. Ball, of Burwell, Cambridge; T. Owen, of Clapton, Berks; W. Child, of Vernham, Hants; W. T. Taunton, of Ashley, Hants; G. Boddington, of Sutton Coldfield, Warwick; J. A. Williams, of Baydon, Wilts; P. Love, of Naseby, Northamptonshire; T. Knight, of Edmonton; J. Whaley, of Enfield Chase; G. Parsons, of West Sambrook, Somerset; W. Sainsbury, of West Lavington, Wilts; J. Neame, of Selling Court, Kent; P. Martin, of Endsing, Kent; C. H. Lattimore, of Wheathampstead, Herts; T. Fordham, of Snelsmore, Berks; C. Pocock, of Sulham, Berks; J. Smith, of Springfield, Sussex; H. Selmes, of Oak Hill, Sussex; W. P. Lamb, of Bodiam, Sussex; T. Ellman, of Cuckfield, Sussex; J. Wood, of Cuckfield, Sussex; J. Carter, of South Molton-street; J. C. Nesbit, of Kennington; E. B. Acton, of the Temple; E. Purser, of Bridge-street, &c., &c.

The CHAIRMAN said that, in proceeding to open the business of the year, he must, at the outset, most cordially thank the Club for the mark of respect and good feeling which they had exhibited towards him by electing him to fill the important office of Chairman during the ensuing year (cheers). He had been frequent in his attendance at the discussions, and he had marked with satisfaction the great attention and respect which had been paid to his predecessors in office. Having said thus much, and knowing the desire of the members of the Club to support the chair on all occasions, and to pay due respect to those who were called upon to fill such an arduous post, he should not dwell further upon the subject; he would simply call upon them to give him their support in the office of Chairman, not only that evening, but throughout the year (cheers). It would be well, perhaps, for him to mention one or two matters connected with the performance of his duties. He recollected that on past occasions, when parties had

been wont to outstrip the twenty minutes to which they were limited by the rules of the society; and he hoped that gentlemen would, during his tenure of office, endeavour to avoid that error (Hear, hear). There was another point which he was also anxious to mention: it was simply this, that it was a standing rule of the Club that no gentleman who attended the meeting should take part in the discussion unless he had been elected a member. Having thus expressed himself in reference to his own position, he would now proceed to observe that the subject appointed for discussion that evening was, "The Burdens pressing upon Agriculture, especially in reference to the Malt-tax" (Hear, hear). It would appear, on looking at the card—and he could not deny that there was some ground for the supposition—that a wide field for discussion was here opened; but when he looked at the latter part of the terms, and read the words, "especially in reference to the Malt-tax," he concluded that the discussion would, in fact, be specially directed to that part of the subject (Hear, hear). In dealing with such a wide topic as the numerous "burdens pressing upon agriculture," however difficult it might be for gentlemen to restrain themselves, he hoped that they would not indulge in the expression of those strong feelings to which they had given vent elsewhere, and that they would endeavour to compress their observations within as narrow a compass as possible (Hear, hear). He would now introduce to the meeting his highly-respected friend and neighbour, Mr. Cheetham; only observing, in doing so, that agriculture had no warmer friend and no stauncher advocate than the gentleman who had undertaken to bring forward such an important subject that evening.

Mr. CHEETHAM, after expressing his regret that the subject was not to be introduced by some person more talented and better able to do it justice than himself, and after claiming the indulgence of the meeting, on the ground that he was not so well prepared to deal with the question as he could have desired to be, so that he hoped rather to elicit information and observations from others than to introduce any of his own, which were worthy of attention—after these preface remarks, he proceeded to speak as follows: Mr. Smith has truly informed you, that the subject appointed for discussion this evening, is "The burdens pressing upon Agriculture, especially in reference to the Malt Tax." Now, I take it for granted that in discussing this tax, we should deal with it in reference to its influence upon agriculture, and not take into consideration its bearing upon revenue (Hear, hear). This course, while it will very much simplify the discussion as regards matters of detail, will also limit it within a proper compass. I conceive that the burdens upon agriculture may, with much propriety, be divided into two classes—the direct and indirect burdens. But as the former, which comprises all payments

made from the floating capital of the farmer, was elaborately discussed in April last, although under another designation, I purpose, on the present occasion, to confine myself to the latter class, which consists of those imposts upon native industry, which, while they raise the price of commodities to the consumer far above its natural level, operate injuriously upon the producer, by reducing demand, and thereby lowering the price of produce, and greatly retarding the full development of the resources of the soil. These are chiefly the excise duties upon malt, hops, soap, and, to a certain extent, bricks; and at the head of this list stands the malt-tax, a monument of its own injustice to the productive classes. It is said by many persons, that the malt-tax being paid by the consumer, exposes the farmer to very little loss on that account. But it shall be my endeavour, in the few brief observations that I shall have the honour of addressing to you on this subject, to show how inconsistent with the truth is the latter part of that assertion. From my earliest years I have always considered the malt-tax a monster grievance upon the agriculturist and working classes generally, and time has not softened my antipathy to it. If it were a "grievance in by-gone years," with how much more force does it apply at the present time, when the British farmer is exposed to the competition of the untaxed produce of the whole world in his own market, while a portion of the produce of his own skill and labour, and the soil he cultivates, is taxed from 60 to 70 per cent. ! Indeed, taking all the circumstances of its operation into account, I might fearlessly challenge the universe to produce another so great an anomaly, or so great an injustice, as the malt-tax. Injuring alike both producer and consumer, and the farmer occupying both capacities, it appears almost miraculous that he has been able to bear up against such accumulated evils. Nor ought the partial bearing of this abominable impost to be forgotten; for while the farmers of the Isle of Ely, the Fens of Lincolnshire, and other places where they are not barley growers, are exempt from its visitations, the consumers in the cider counties know nothing of its operation. I believe manufacturers know full well how to appreciate a tax upon native industry. When the duty of about 3d. per square yard was removed from printed cottons, the consumption doubled itself, and which continued until low priced silks and woollen fabrics came into close competition with the better descriptions of printed calicos. And allow me to ask, are not we manufacturers of meat, bread, and beer—at least the raw materials of the two latter articles? Are we not, as manufacturers, subject to the same regulations of supply and demand, as manufacturers of broad cloth? Does not then a tax levied upon a portion of our produce, although paid by the consumer, seriously injure the produce by curtailing the demand? Most assuredly. Now, in reference to the consumer bearing the whole burden of the malt-tax, I take leave to say, that if it be so (and which I shall not here dispute), that forms an additional and a very cogent reason why it ought to be repealed; because, in lowering the price of produce, it also deranges the whole system of cultivation, in as far as that

the farmer no sooner finds his barley crop comparatively unprofitable, than he turns his attention to some other description of grain, which perhaps may not improve his husbandry. In proof of this, permit me to say that I have heard it remarked that since the year 1834 the produce of wheat has doubled itself, while that of barley has remained stationary. And although I am a believer in the truth of this observation to a considerable extent, yet having no data whereby to ascertain its correctness, I cannot of course vouch for its accuracy. Nor ought the vexatious restrictions under which the maltster labours to be overlooked in this category of abominations, because, being unable to vary his process according to soil and seasons, should he be unfortunate enough to have a steeping of barley fail, although it may be wholly unfit for brewing purposes, he must nevertheless pay the duty for it, which renders it too expensive as an article of food for cattle and sheep: and hence the necessity of selecting his samples with great care and judgment, leaving the doubtful qualities to be got rid of by the farmer as he best may. Further illustration of this fact may be found in the table at page 11 of the Prize Essay of the Total Repeal Malt Tax Association. I trust enough has been adduced to prove that a tax upon the produce of the soil operates as a tax upon the soil itself. It will not, I conceive, be denied that price regulates consumption to an almost inconceivable extent; in proof of which I beg to draw your attention to the year 1829, when the duty of 5s. per barrel on beer was removed, which increased the consumption of malt 30 per cent., while the imposition of Sir Robert Peel's 5 per cent. in 1840, trifling as it appears, again reduced it somewhat more than 12½ per cent. I have endeavoured to show that a trifling difference in price exercises an extraordinary influence upon consumption. If this be correct (and I contend it is), who shall venture to estimate the amount of reduction which must take place in consumption in consequence of the monopoly enjoyed by the brewers and maltsters, who, with the publicans, dispense malt liquor to the labouring classes at a cost of 120 per cent. upon the price of barley? and all this because the tax, by placing malt beyond their reach, prevents their brewing a wholesome beverage at home, which they would do under other circumstances, more especially in the rural districts. Gentlemen will find at pages 12 and 13 of the prize essay to which I have before alluded, how the price of beer is raised 120 per cent. above the price of barley fully explained. I have hitherto only alluded to malt as the most nutritious food for cattle and sheep; and, although we have the testimony of a learned professor (whose name shall be mentioned with due respect, because he is unfortunately deceased: I mean, of course, Professor Thompson) that barley contains more nutrition than malt, still we have living witnesses—practical men—whose word I feel it would be gross injustice to suspect, and whose experiments leave no doubt on my mind that malt possesses the most feeding properties of any known vegetable production. And when I mention the names of our worthy chairman, who I trust will give this meeting the benefit of his most valuable experience, Mr. Hudson, of Castleacre, and a gentleman named

Cock, living, I think, near Maidstone, whose testimony is most conclusive on this point, together with many other gentlemen whose names I cannot now recollect, I conceive I require no other evidence to establish the truth of my position. With these facts then before us, who can doubt that the malt tax, as regards enterprising men in particular, forms one of the greatest obstacles to the perfect cultivation of the soil in reference to its fertilization by stock being fed upon it. Nor is the restriction it places upon the supply of meat to the consumer to be regarded with more complacency. It therefore stands in this unfortunate predicament, that it is a curse alike to producer and consumer; and permit me here to observe, that agriculturists in this case also stand in both relations. It would be an unprofitable speculation at least for me to enter upon, to endeavour to ascertain what the malt duty costs the country in lowering the price of produce to the producer, and raising the price of food to the consumer, to say nothing of the expense of collection; but if I were to hazard an opinion, I should say many times its own amount. Our brethren of Surrey, Kent, and Sussex next claim our attention, to inquire how far the hop duty is a burden upon agriculture. And here I beg leave to profess myself lamentably deficient in knowledge of all that appertains to hop growing. But reasoning by analogy, the same arguments relative to supply and demand are equally applicable in this case as in the case of malt, namely, that every enhancement of price, no matter from what source it springs, must have a tendency to check the demand, and hence the hop duty, being, as it appears to me, excessive upon an article which requires an enormous outlay of capital to bring it to maturity, must press with undue severity upon the growers, and forms an intolerable burden upon that branch of our agriculture. Hops, however, differ materially from malt, in as far as they cannot by themselves be forced into consumption, and consequently the hop growers labour under a double disadvantage; firstly, because they have the hop duty pressing upon them, which of itself amounts to a serious sum per acre; and secondly, because the demand for their produce is greatly impeded at times by the want of consumption in malt; and therefore the malt-tax operates most injuriously upon the hop growers. Having disposed of that portion of my subject in reference to the excise duties upon malt and hops, I proceed to notice the duty on soap; and if ever I were inclined to depart from the subject of the present discussion I should do so here, for perhaps never was a tax of the same amount so unjustly levied, the duty causing it to be an article of inconsistencies; for, while we import foreign tallow, barilla, and potash duty free to make it cheap, we lay a tax on its manufacture to make it dear. And thus, when we have sanitary commissioners sitting in every quarter of our large towns to enforce cleanliness, we are taxing heavily the very object sought. The soap duty then, as far as it goes, is an indirect tax upon breeders and graziers, operating to their injury in checking the demand for tallow, of which they are the producers, and which to them is a matter of some importance, and to that extent is a burden upon agriculture. Relative to the excise duty

on bricks I conceive little need be said, except indeed that as the last straw is said to break the camel's back, so the augmentation of price, in consequence of the duty, may deter landlords from erecting a sufficiency of buildings to enable the tenant to carry on his business with advantage. Gentlemen, in concluding these very imperfect observations, perhaps you will allow me to call upon my friend, Mr. Robert Smith, to give you the result of his experience as regards feeding with malt. I am quite sure that he will say nothing but what is strictly true. He is not a man to romance or to lead you astray, either on that or on any other subject. I regret exceedingly, as I said before, that this question was not entrusted to an abler hand; however, I hope the result will, at all events, elicit information; and if that result is attained, my object will have been accomplished (cheers). Mr. Cheetham was then proceeding to read a resolution which he had prepared embodying his views in reference to the repeal of the malt tax, when the Chairman intimated that, according to the usage of the club, it should be postponed until the discussion had terminated.

The CHAIRMAN said: Mr. Cheetham has called upon me to state the result of the experiments which I have tried in the feeding of animals with malt. I tried malt in the feeding of sheep at a period when I was preparing some Leicester lambs for exhibition, and of course, therefore, did not wish to be out-rivalled by any other individual (Hear, hear). I commenced by giving the animals oats. I gave them peas, I gave them beans, I gave them oilcake, and lastly I gave them malt. In an essay which I wrote on the management of sheep, I have noticed about twenty experiments which I tried at the period when I had recourse to malt. Let me assure you of this—that malt made more mutton than any other article of food which I gave them; and what is more, gentlemen, after they had had malt, the animals refused to eat anything else (Hear, hear, and laughter). I have also exhibited oxen at the Smithfield Cattle Show; and I have found that when oxen had been crammed, and would eat nothing else, they would eat malt.

A GENTLEMAN inquired whether the Chairman gave the sheep in question malt in the dry state, or malt mashes?

The CHAIRMAN replied that he gave malt in the dry state; and taking the fair market value of oats, beans, and peas, and the fair market value of malt, he found that, value for value, the latter was the best food (Hear, hear). He would here mention a little fact of some importance in connection with the question then under discussion. If any one had one hundred sheep, and divided them equally, and if he gave to the one-half all turnips, and to the other all malt-combs, the one would become fat and fit for market much sooner than the other.

Mr. LATTIMORE asked the Chairman if he could say anything as to the time required for fattening animals on malt?

The CHAIRMAN said, the time would of course depend much on the degree of warmth which the animals enjoyed. The time required to gain a certain quantity of animal flesh would be regulated by the standard of heat. If the heat were above 100 degrees the temperature would be too hot, and the progress of the animal would be arrested; if, on the other hand, it were too low, the effect would be in a contrary direction.

Mr. HUDSON said, he had supposed until that day that his own experiments on this subject were almost entirely forgotten; but, in coming up to town in the afternoon, a gentleman, who sat in the next compartment to himself, reaching out of the window, presented to him the *Economist*, and asked him if he took it. He had not seen the paper before, but, on ex-

amining the number presented to him, he found it to contain an account of his own experiments in the feeding of Highland Stots with malt. The thing was, as it were, dug up again; and he hoped that other practical farmers would take the matter in hand, and fairly carry out the experiments which had been begun by himself. If malt had a fair trial, he had no doubt the same results would be arrived at. He was amply repaid for his own outlay. He quite agreed with Mr. Smith that malt was a most excellent article for the feeding of sheep, particularly rams, which had to be prepared for a particular purpose; and he hoped that practical men would not fail to pay attention to the subject.

The CHAIRMAN observed that Mr. Cheetham had directed the attention of the meeting to the experiments of Dr. Thompson. He (the Chairman) had purchased a little book containing the result of those experiments, and, strange to say, he had found that this book was written entirely about two milch cows (laughter). Now it was clear that if malt would make milk it would not make beef, and *vice versa*. Therefore he thought the decision of the Government agents had no bearing whatever on the feeding qualities of malt (Hear, hear).

A gentleman asked the chairman what quantity of malt he had given at once.

The CHAIRMAN: About a pint.

Mr. BALL asked the chairman whether he was of opinion that malt was as cheap as other food, notwithstanding the duty.

The CHAIRMAN: Yes; value for value. I found that it made the most mutton.

Mr. BODDINGTON wished to learn whether in the case put by the chairman, of 50 sheep being fed on one side and 50 on another, the one being fed with turnips and the other with malt, he had intended to speak of malt itself.

The CHAIRMAN said he had spoken of maltcombs; and the way in which he had meant to put the point was this: if maltcombs were so good, what must malt itself be?

Mr. BODDINGTON said he would now proceed to make a few remarks on the question of the evening. He quite agreed with the gentleman who had brought this question before the meeting, that the malt tax was a very great burden upon agriculture. But there were other great burdens upon agriculture which had been created more recently; and with regard to the malt tax, he must declare that it was a standing monument, to use the expression of the gentleman by whom the subject was introduced—a standing monument of the incapacity of the men by whom this country had been governed for the last thirty years (Hear, hear). The malt tax was a war tax; yet it had prevailed during thirty years of peace (Hear, hear). The income tax was another burden upon land; and that, too, was a standing monument of the incapacity of the government. Instead of the industry of the country being relieved and its resources developed, such warimposts as the income tax and the malt tax were imposed and retained. The malt tax was especially objectionable, inasmuch as it was a partial tax, and unjust towards the labourer. The labourer who had to produce the food of this country, and to sell it in the same market as the foreigner, had to pay a tax of 75 per cent. for the beverage by which he was to be sustained, while the foreigner did not pay 6d. It would really seem as if the government sought to devise means of damaging and injuring our own labouring population. If there were to be free trade in corn, let not barley be excluded from the operation of the principle. Everything in the shape of produce was dependant on labour; and to put a heavy tax on the labourer's beer, and yet expect him to produce the same amount of food, was just like putting a heavy weight on a race-horse's back and expecting him

to win the race. He had no wish to prolong his remarks; but before dismissing the income tax, he could not help observing, that since it was imposed, a policy had been adopted in this country which tended to deprive farmers of any income which they might possess. It was impossible that farmers could sustain the burdens under which they laboured, if they were exposed to a system of competition with foreigners, and had no protection whatever (Hear, hear). Another burden rested on the landlord, which had been created very lately—namely, rent. Rent, he repeated, had become a burden. Those who had taken farms and made contracts under a protective system were clearly cheated, if called upon to compete with foreigners without any kind of protection. If the produce of the land sank to the continental level, so must the rent. The rent of land on the continent was about 5s. an acre. How was the English farmer, therefore, to compete with the foreigner, while he paid for his land from 25s. to 30s. per acre? There was abundance of good land to be obtained in France and Germany at 5s. per acre. Those noblemen and gentlemen who advocated free trade, of course anticipated that their rents would sink down to the continental level (laughter). It was impossible that such should not be the result, if the present state of things continued (Hear, hear). Englishmen could not work miracles. The capital of the country would go abroad; it would find its way to places where excellent land was to be had for 5s. an acre, instead of paying 25s. an acre, with the addition of poor rates. Poor rates formed another burden upon agriculture. They were increasing every day; the land was full of beggary and vagrancy, and that was one result of the policy adopted by the government. He felt convinced that if the present system continued the poor rates would ultimately eat up the rent of the land. As for the farmer, he stood between the landlord and the labourer; and if burdens pressed too heavily upon him, he was obliged to shake them off as well as he could; he was a sort of go-between. It was clear that the old payments, in the shape of rent, could not go on. It was impossible to "get blood out of a stone," or the present rent out of farmers who were fast losing their capital (Hear, hear). If the agriculturists came down to continental prices, they must also come down to continental payments. And here he would refer to a remark of Earl Stanhope on this subject. That noble lord, who was, he believed, as clear-headed a man as any in the country, had said that, in his opinion, there must be a general equitable adjustment: if they had the continental level of prices, they must have the continental level of rates, rents, taxes, and everything else (Hear, hear). What had the new system done? Why it had placed the government in a difficulty from which it could not possibly escape. There was some talk of cutting down the army and navy. But would the Whig government sanction any such scheme? Would they go over to that side of the question (Hear, hear)? It was his (Mr. Boddington's) belief that nothing would enable the country to meet its expenses until Parliament reverted to the protective principle, in some form or other. And here he would just remark, in reference to an observation made by a preceding speaker, that it was price which regulated consumption, that, though that might be considered true in some respects, yet the proposition was, in fact, a very doubtful one. They had very cheap prices at present; and yet there were a great many people out of employment, who of course could not consume much. He thought wages had a good deal to do with consumption. Those men who were traversing through the country in search of employment of course had no wages; and if bread were ten times cheaper than it was, still they would be unable to consume; and therefore he could not admit the axiom that it was the

price of food which regulated consumption. Prices were lower than they had been for many years, and there were a great many people out of employment. If the price of wheat were 80s. a quarter, and wages were at the same time 15s. or 16s. a week, the consumption would be just as great as it was at that time, provided labourers generally were employed. In fact, he believed that high prices were conducive to the employment of the people, and tended to relieve the country from the burden of taxation; whereas low prices were injurious to the revenue.

Mr. W. BENNETT (being loudly called for) said, that he fully concurred (he thought he might say) in almost every word which had been uttered by Mr. Cheetham, in introducing the subject of discussion. The malt-tax had always been a tax pressing unfairly on the skill and energies of the British farmer, and greatly detrimental to the comfort and morals of the labouring classes; but under the present greatly (he might say unjustly) altered circumstances of the farmers of this country, it had, in his judgment, now become quite insufferable (cries of Hear, hear). The gentlemen who had preceded him had, however, gone so fully into the subject of malt, that he would, with their permission, briefly direct their attention to some other burdens which he considered pressed also very unfairly upon agriculture. He meant principally the local burthens, such as poor, highway, and county charges; these he considered were borne in very unjust proportions by the farmers. He knew, in fact, from his own observations, that there were manufacturers in the same parish where they would make a return of some 30,000*l.* to 40,000*l.* a year when trade is good, and on premises rated to the poor at about 100*l.* per annum. Now a farmer in the same parish, renting 400 acres of land, would be assessed at about 400*l.* Well, then, how does the case stand? Why, that we may be quite within the mark, and allow a good margin, if we take the average annual return of the manufacturer or merchant at 25,000*l.*, or if you please take it at 20,000*l.*, although we have known instances of its being double that amount. The return upon the farm of 400 acres would not, under good farming, be more than 1,600*l.*, or four times the rental on an average of years. Now taking it for granted that the manufacturer gets his 7*3*/₄ per cent. only upon the sale of goods, after deducting his loss for bad debts, and the farmer a sum equal to his annual rental, after deducting losses of stock, &c.—which he ought to do, although this year in many cases the whole will be lost (Hear, hear); still, to get at the truth, extreme cases must be omitted; and in fairness we must add the rates of a decent dwelling house—say of 60 per annum—rateable for the manufacturer, the farm house being included on the other side. Now, in the parish to which he particularly referred as an illustration, the parochial rates would be from 5*s.* to 6*s.* in the pound: say 5*s.* So that, upon the present system of assessment, the manufacturer or merchant with an annual income of 1500 per annum would pay 40 to the parochial rates; and the farmer of 400 acres, with the income of 400, pays 100 to the same object (cries of Hear, hear). Now, with free trade in corn, we have a right to have a free trade in taxes also (loud cheers). If, then, a person's income were the basis on which the indigent poor were maintained (and for himself he could see no juster principle) (cries of Hear, hear), in that case the merchant, manufacturer, or tradesman, with an income of 1500 per annum, as compared with the farmer of 400, would pay something like four times as much as the latter, instead, as at present, paying considerably less than one-half. The pressure upon the farmers, as regards the highways, was still worse. In many instances, from the establishment of railroads, the turnpike trusts were defunct. The roads had been consequently thrown upon

the farmers, while the toll gates were kept up to pay the interest of monies borrowed by those trusts; so that, while the farmers made the roads pretty much at their own cost, they could not use those roads without the toll-bar charges in addition (Hear, hear). He thought enough had been said to convince every unprejudiced mind, that if the farmers of this country are in future to be brought into competition with the untaxed productions of other states, the measure must be accompanied, not merely with the total repeal of the obnoxious malt tax, but also by a revision of the general and local taxation of the country. Mr. Bennett resumed his seat amidst loud cheers.

Mr. KNIGHT said, that with regard to the poor law, Mr. Bennett had ably discussed that subject, but did not seem to him to have gone quite far enough. In speaking of the manufactory in his parish, he forgot to mention how many of the people employed in that manufactory were thrown upon the poor-rates (Hear, hear); and that when the manufacturer was paying only 5*l.* in rates, and the farmer perhaps 20, the manufacturer was employing his 50 men whilst the farmer could employ but 10. The manufacturer seemed to have the advantage in every shape; and this inequality of the burden of the poor-rates was in his (Mr. Knight's) view one of the most unjust and oppressive of all the burdens the farmers had to sustain (Hear, hear).

Mr. LATTIMORE had been rather anxious that evening to hear the observations which his brother farmers had to make relative to the subject upon the card, because it was felt desirable that notwithstanding the general conviction upon their mind that an inequality of local burdens did exist, they should at least point to some tangible grievance, in order to indicate to the farmers of the country the way in which they might get relief. He (Mr. Lattimore) agreed with Mr. Bennett that there did appear at first sight to be a great disproportion between the burdens borne by commercial and manufacturing capital and the burdens borne by the capital of the agriculturist. That he was ready most fully to agree to; but Mr. Bennett had made one important omission, for he did not attempt to show the meeting any reasonable and tangible mode by which the valuation could be made more equitably (Hear, hear). He would ask Mr. Bennett this question. As the law at present stood, was it not provided that all property should be rated to the poor in proportion to its current rental or value?

Mr. BENNETT rose in explanation. He complained that Mr. Lattimore must either intentionally misrepresent him, or else that he could not understand what he believed every other gentleman in the room fully comprehended (loud cheers). He said he must repeat what he had on some previous occasion felt compelled to say, that while it was the duty of a speaker to furnish arguments, he was not bound to furnish comprehension too (great laughter). He believed he had said nothing reflecting upon manufacturers; he knew their importance too well; but all he contended for was that under free-trade (so called) these charges which have for ages pressed with such unequal severity upon land, must henceforward be borne by a tax on the general property and income of the country, whether funded, commercial, manufacturing, or agricultural (cheers).

Mr. LATTIMORE.—It did not meet the question simply to say that the labourers ought to be supported out of all the property of the state. The property must be tangible, as he had before observed, something of which the current value could be rated. The law said they must do that, and if they had not the means of taxing all property, Mr. Bennett's scheme at once fell to the ground. Manufacturers occupied a very different position from agriculturists. In the first place, ma-

chinery was more available in manufactures than in agriculture; and in the second place, the commercial classes were men of larger capital according to their occupations, and could turn their capital over many times, whilst the agriculturist did it but once. (Hear, hear.) No man could be more anxious than he (Mr. Lattimore) was, that every description of property should bear its fair proportion of the public burdens; but if he were asked why he objected to the suggestion of Mr. Bennett, he should distinctly reply that the farmers could not make a fortune in a manufacturing town without adding to the produce of the farm.

Mr. BENNETT.—There was a property and income tax assessment in existence at the present time, and he contended that its extension and the abolition of local rates would at once reach every man with an income.

Mr. LATTIMORE.—Could the House of Commons be induced to entertain the proposition, he should be delighted to find that that portion of the industrial capital of the country which realized larger returns than capital embarked in agriculture was made to pay its share of the burdens alluded to. What he would now press upon the meeting was, that they had met there upon a question which pointed to certain burdens that were tangible, and capable of being dealt with in a practical manner, which were of long standing, and had been the subjects of discussion over and over again. So long ago as the year 1816 the malt tax was the monster grievance—(Hear, hear)—which had fettered the farmers, and hampered and pressed alike upon their capital and their industry; yet here they were, 33 years after, in the year 1849, with all their protection and other supposed advantages swept away, still discussing the question, without having made one step in advance. (Hear, hear.) It was a disparagement to the farmers of England, that with all the professions their friends had put forth in parliament and out of doors, they should remain as powerless as ever. With respect to the assessment of property to the poor rate, Mr. Bennett had alluded to a manufactory in his own district; but such was the state of the law that it had never rated property of that sort, though it was assessed to the income tax.

Mr. BENNETT.—Then it is time that it did so.

Mr. LATTIMORE then proceeded to comment upon the "monster grievance" of the farmer—the malt tax. That he took to be a question affecting the emancipation—the setting free of native industry (cheers); and if there was any one branch of native industry that ought to be perfectly unrestricted, it was the cultivation of barley, and the making it into malt (cheers). Its subjection to a duty of 70 per cent. he regarded as a perfect anomaly in the present day; and if the question were properly understood by agriculturists, who would now come into court with clean hands (Hear, hear), it could not much longer be maintained. The weight or burden of the malt tax always pressed more heavily upon the farmer in proportion as the price of the raw material of barley fell: that was an injustice (Hear, hear). He recollected that some years since he went into Norfolk and Suffolk and advocated the abolition of this tax; but the price of barley being at that period 50s. a quarter, the farmers were too busily engaged in selling their grain at that price to listen to him then. Now, however, when circumstances were different, they were rather disposed to hear a discussion upon the subject (Hear, hear). The hon. member for Cambridgeshire (Mr. Yorke) observed the other day, that the advantages which would result from the repeal of the malt tax were rather doubtful; but no sophistry which might be resorted to by gentlemen who desired the continuance of the tax would convince the farmer that he derived a benefit, or that it was a very good thing

for him to give eighteen bushels of barley for eight bushels of malt, which he was doing under the operation of the tax (cheers). He maintained that the utmost freedom must be given to the tenant farmers, and that the only course now open was, to reduce the burden of taxation which pressed upon them, and fettered them in the field of industry; emancipate them from the trammels of the exciseman, and encourage them to exercise their industry, their skill, and their capital in those departments which were most likely to be remunerative to them in their business of farmers. The malt-tax was a hindrance to the growth of barley; consequently it was a hindrance to the carrying out of that system which had been practically proved in Norfolk to be most essential to the prosperity of the occupier and the welfare of the community at large; for he held that, by the "Norfolk system," whatever tended to produce more barley, also tended to produce more meat (Hear, hear). Following the turnip crop came the clover and barley, and after the clover and barley came the wheat, so that whatever tended to provide for the essential comforts of the people, was a positive advantage to the community; and if he were right in this conclusion, whatever on the other hand tended to militate against the production of those articles, was a public injury. The committee of 1828, of which Sir Henry Parnell was the chairman, laid down the maxim that it was unjustifiable to levy upon the people any tax that might be obtained at a smaller sacrifice; and contending, as he (Mr. Lattimore) did, that the malt tax impeded corn growing and stock feeding, deteriorated the fertility of the land, and lessened the quantity of meat produced for the consumer, he denounced the tax as altogether and entirely indefensible (Hear, hear). Well, then, having agreed that it was an evil, where, he asked, would they find their remedy for it?

A MEMBER.—Free trade and the tariff have destroyed that.

Mr. LATTIMORE hoped that free-trade itself would prove an instrument by which the object in view would be attained. In 1816, as would be seen by reference to Hansard, the late Earl of Leicester advocated the abolition of this tax as a simple act of justice. In 1829 it was confidently expected that the tax would be abolished; but the brewers had more influence with the Government than the farmers, and therefore the beer duty only was repealed. In 1834 came on Sir Wm. Ingoldsby's motion for the repeal of the malt-tax; but although the motion was carried, it was soon after rescinded. When the late Lord Spencer intimated to their faithful representatives, that if this tax were abolished it would be necessary to impose a property-tax, in order to fill up the void which the abolition would create, their courage, like that of Bob Acres, oozed out at their fingers' ends. In 1835 Mr. Cobbett proposed the abolition of the tax, and in so doing dwelt on the injury inflicted on the inhabitants of towns: and he recollected hearing Mr. Bennett enlarge at Freemason's Hall on the monstrous injustice and the numerous evils of such an impost. The matter went on until 1843 or 1844. In 1846 an association was formed in that house, of which he had been from the first an humble but sincere member; and that association had consistently endeavoured to carry out what was attempted so many years ago; and he could not help saying that he felt disparaged as an agriculturist at finding in the year 1849, after so many discussions had taken place in the House of Commons and in other places, that a gentleman in Cambridgeshire could declare that he did not know whether the repeal of the malt-tax would produce any benefit, as men might be led by it to drink spirits. He hoped they would all shake hands with intelligent men in towns. Those were the persons who would settle the question. When there was a duty on cotton

and wool, they did not differ amongst each other, as farmers were in the habit of doing. He had heard it objected that the effect of the abolition of the duty would be to increase competition. When he heard such an observation he almost doubted whether he lived in the nineteenth century. How could they proceed on any other principle than that of competition? It was the principle by which almost everything in this world was regulated. On all these grounds he thought they had a right to demand the repeal of this tax, and such other relief as was fair and equitable to agriculturists in their present position.

Mr. ELLMAN said he was very unwilling to attempt to follow his friend Mr. Latimore through all his arguments. Many sentiments had been expressed that evening, of which he desired to take some notice, beginning with the observations of Mr. Cheetham in reference to the feeding properties of malt. It had, he thought, been proved that evening, that the malt tax formed a considerable restriction on the proper cultivation of the land and on the feeding of cattle; but he thought the statements made on that subject did not go far enough. A friend of his, a brewer, once said to him—"Did you ever try malt? Did you," he asked, "try it in the dry state or the wet?" He replied that he tried it in the former state. "You should have tried it wet," his friend rejoined; "you should feed cattle with malt in the same state in which it is used in making beer. If you were to mash it, you would find that one bushel mashed would go as far as two bushels unmashed." He had thought it desirable to mention that conversation (Hear, hear). A gentleman who had employed a number of horses for many years told him that he had never fattened horses in his life so quickly upon anything else as upon malt in the mashed state. Among the difficulties in which they were placed as agriculturists, the burdens which they had to sustain, as they heard that evening, the malt tax was one of the most prominent. He had ever been anxious for the repeal of that impost; and his father had advocated its abolition fifty years before. When Mr. Pitt proposed to make an addition to it fifty years ago, his (Mr. Ellman's) father accompanied other gentlemen on a visit to the minister, and declared to him that he was convinced it would prove one of the most injurious taxes ever imposed in any country. He would appeal to the meeting whether such had not been its operation. Some persons would tell them that there were other objects which were more important than even the repeal of the malt tax; such, for example, as the removal, or rather the equalizing, of local taxation, and the partial removal of poor's rates to the shoulders of those who are better able to bear the burden than farmers were under present circumstances (Hear, hear). They were met by the objection, that if they agitated the removal of burdens they would never be able to get back protection. Now, all the burdens in question were peculiarly felt in consequence of their having lost protection; and to tell him that they must not agitate the question of removing burdens because they had lost protection, was to tell him that they ought to submit to be well thrashed, and not attempt to strike a blow in return; it was like throwing a man into a ditch and telling him to lie there and die, and not struggle to escape. If they had not lost protection they would not be so anxious to get rid of burdens which were now too heavy to be borne. Now he was one of those who considered that the malt tax was not a burden peculiar to agriculture; he had always maintained that, at the same time, he believed that the malt tax was the most unjust, the most cruel, and the most immoral tax ever imposed; pressing heavily on the poor labouring man, and driving him, as it did, from his own fire-side to the public-house (Hear, hear). It was not necessary that he should go

more fully into the question of the malt tax. He thought enough had been said to enlist the hardest heart in favour of its repeal. He only regretted that they could not find that kind feeling in the House of Commons or the House of Lords, which was to be found amongst the yeomanry of England; that persons were not found in Parliament anxious to come forward to advocate the repeal of the malt tax for the sake of the poor man, as well as to spout at public meetings, and to call themselves the poor man's friend because they proposed his good health. Whenever he heard a nobleman or gentleman propose the labourers' health, he could not help saying within himself, "Would to God the labourer could drink our health in a mug of ale!" He would state to the meeting what was the prevalent feeling in his own neighbourhood with regard to the burdens which press so heavily upon agriculturists. He now spoke more particularly of the poor's rate and other burdens not connected with malt; for he happened to live in a poor district, where barley was scarcely grown, and where many of the farmers were so poor that they could not afford to drink ale, so that they could not so well appreciate the advantages of repealing such imposts. When a person so situated was asked, "How would you like to have the malt tax repealed?" he naturally replied, "Oh, we don't know; we like beer very well, but we can taste very little of it." It was extremely questionable whether they ought to give up agitating for the repeal of the malt tax, in order to increase their chance, as it were, of getting back protection. His opinion was that, if they asked for protection, they would never get it (Hear, hear); but that if they did not ask for it, they would have it (laughter). If they were to go to the House as the manufacturers had done, and demand the repeal of such taxes as pressed upon them unfairly, if they were to demand—or to request, if that latter word were considered preferable—that certain burdens, placed exclusively on their own shoulders, should be put equally on the shoulders of all who were able to bear them, he thought they would find the legislature prepared to listen to them. Seeing that it was impossible for the legislature to relieve them altogether, the chances were that it would relieve them as much as it could, giving them as much protection as was practicable. However, in whatever way the legislature might choose to act, it was not their province to dictate, nor should they, he thought, discuss the chances of getting back protection or not getting it back. They were now placed under a law of the land which allowed foreign corn to come into this country, and exposed them to competition with those who were not taxed as they were. They were placed at a disadvantage by having to compete with those who paid no taxes here, and bore no burdens; and he was the more anxious to bring that subject before the meeting because he knew that a feeling was abroad in the country in reference to it, which was somewhat opposed by those who called themselves the farmers' friends in the House of Commons. They were all aware that there had lately been some discussion which had ruffled the feathers of the aristocracy; and the discussion which had chiefly led to that result was that of tenant-right (Hear, hear). He had, indeed, no wish to ruffle the feathers of gentlemen who might render assistance to them; and if he could stand between the two parties, and make peace, most happy would he be to do so. But those to whom he referred had no right to compromise the interests of farmers for any purpose, whatever might be the prevailing feeling in the country. Before, however, the farmers could carry out their object, it was necessary for them to come to some positive understanding. He would not give up protection, but he would for the present leave it out of question. He believed that the country could not go on without protection; but Lord John Russell had

told them that he could not give it to them; and what they should aim at, therefore, was, to be delivered from that pressure which had become so peculiarly burdensome since free trade had been inflicted on the country (Hear, hear).

Mr. MOUNT wished to say a word in reference to the subject before the meeting. On one point he thought they were all agreed; namely, that the imposition of the malt tax was conducive neither to the welfare of the farmer nor of the country generally. The question, then, was how to get the tax removed. It was found, on examination, that it could not be well spared as a source of revenue; but then it had also been found, practically, that when a certain majority in the House of Commons had asserted that a particular tax ought to be abolished, the Minister was generally able to find some means of effecting the object, either by diminishing the expenditure of the country, or by providing some substitute for the tax to be removed. He would venture to suggest, therefore, that the farmers of this country should endeavour to make the members of Parliament promise to vote for the repeal of the malt tax; exercising all the influence which they could over landlords; and not voting for any candidate in future who would not promise to vote for the repeal of the malt tax, provided he should obtain a seat in the House of Commons (A voice: It is too late!).

Loud calls were then made for Mr. Ball, but were not immediately responded to. At length, on their repetition,

Mr. BALL said he could assure the meeting that it was from no feeling of disrespect that he did not at once respond to the call; but having recently advocated the repeal of the malt tax in his own county, and his sentiments having been fully given to the public through the medium of the press, he felt that there could be no utility in reiterating that evening what he had so recently said before; more especially as the views which he entertained had, in fact, been expressed by some of the preceding speakers. Under those circumstances he did not feel justified in taking up the time of the meeting.

Mr. F. HOBBS said he was sure it would be unwise for him to enter into a detailed statement of his opinions with regard to the malt tax; those opinions were so well known that to restate them at that late period of the evening would be to inflict a heavy and useless tax on the time and patience of the meeting. He could only say that he had for a long time advocated the repeal of the malt tax; because he was convinced that it pressed most unjustly on the tenant farmer, and most unfeelingly on the labourer. At the present time, in particular, he conceived they had a right to come forward and demand the repeal of that tax. Taking into consideration the expressions which had been used by Lord John Russell, by his Grace the Duke of Richmond, and by many other leading men, at the time when the repeal of the corn laws was discussed in Parliament—considering the declaration which was then made, that if the corn laws were repealed, the malt tax must follow—he thought they were fully justified in demanding the repeal of such a tax. He had no desire to take up the time of the meeting; but he could not refrain from reading the opinions which were expressed by some of the leading statesmen and politicians of the country at the period to which he had referred. He would begin with his Grace the Duke of Richmond. His Grace said:—"He did not object to a free-trade in corn; but, if so, there must be a free-trade in everything else. You must allow me to get my coat as cheap as I can. You must next take off the malt duty." Sir James Graham said: "He was convinced that if they repealed the corn-laws, the malt-tax would not survive a single year; and why should the landlords be precluded from growing beet-root, sugar, and tobacco." Sir Robert Peel said:

"As a farmer to the free-traders, let me grow my own tobacco; let me manufacture and consume my own malt untaxed." He contended that by using such expressions, these leading men of different parties had promised that if the repeal of the corn-laws took place, the repeal of the malt-tax should follow; and, therefore, on the grounds of justice, propriety, and good faith, they were, he contended, then in a position to demand of the legislature the speedy and total repeal of the malt-tax (cheers). He was much pleased with several of the remarks which had fallen from his friend Mr. Cheetham, in introducing the subject. That gentleman had clearly explained the injurious operation of the malt-tax in reference to the tenant-farmer; and there was one point introduced by him upon which he (Mr. Hobbs) could have wished that he had enlarged rather more, though it was afterwards dwelt upon at greater length by Mr. Hudson and others—namely, the beneficial effects of using malt for feeding purposes. He was glad that the remarks used by Mr. Cheetham had elicited the opinions of Mr. Smith, the chairman of the club, with respect to the beneficial effects of employing malt in the feeding of sheep. He (Mr. Hobbs) was quite convinced that there was no food within the reach of the tenant-farmer which would be found so serviceable as malt. He had found it very useful in the case of horses, not only sick horses, but horses in good condition. He had also used it to feed animals when competing for prizes; and he could conscientiously declare that he believed no man who used oil-cake, or any other food except malt, could compete with the man by whom malt was employed. When he himself had resorted to it as an article of food, he had not withheld the fact from the public. It was well known to many gentlemen in that room, that the animal, by the exhibition of which he obtained the prize at York last year, was fed, not with oil-cake, but with malt; and the condition of that animal called forth the admiration of every one who visited the yard. He (Mr. Hobbs) observed at the time, and he had since repeated, that others would, he believed, obtain a similar result if they had the advantage of malt for feeding. But he could not go the length of saying, with one or two gentlemen in the room, that farmers might use malt advantageously for feeding with the duty on it (Hear, hear); he did not believe that it would or could be used, were its superior feeding properties even so generally known, with a 10s. duty to enhance the cost; but on the other hand, he firmly believed that if the malt-tax were totally repealed, one-third more barley would be grown in this country, and the surplus quantity, which was not required for brewing purposes, would be used for feeding purposes. He had no doubt, in fact, that malt would, in a great measure, supersede oil-cake and linseed. So valuable was it as an article of food, that on that account they had a right to call upon the Legislature to repeal the tax. He wished to say a few words with regard to the trial which had been made officially of the feeding qualities of malt. He did consider that the farmers were very unfairly dealt with by the Government two years ago in relation to the experiments of professors Thompson and Playfair. The meeting well knew that he had since formed part of a deputation which had waited upon Lord John Russell to request a fair trial of the feeding properties of malt; the chief points of the request being that a drawback might be allowed upon the duty to certain persons appointed to carry out the experiments. He told his lordship, as did Mr. Hudson, that the farmers were convinced, by experiments which they had made, that the report of the learned professors, whose names he had mentioned, would not be borne out in practice; and he maintained that the Government had not done them justice in refusing to grant another trial. He felt satisfied at the time, as he did still, that the ex-

periments, properly conducted, would have proved successful, and that the Government would have acted wisely, and conferred a great advantage on the agricultural interest by conceding the request made to them (Hear, hear). He quite agreed with Mr. Ellman, however, that they must now look to themselves—(Hear, hear)—since those who had professed to be their friends, and who had on public occasions called upon them to drink the health of the labourer, were not acting consistently with their professions (cheers). Therefore having regard alike to those who had declared themselves to be their opponents, and to those who professed to be their friends, looking alike at the position of those who were neutral and of those who were adverse, he felt that they had no chance of success unless they united and determined to help themselves. They should, therefore, not content themselves with going to their representatives in parliament, who, it must be remembered, had not the same voice or influence now as they had before the passing of the Reform Bill, but they must go to higher quarters—they must appeal to the representatives of the Crown, demanding an act of justice which had been promised to them before they were placed in competition with the world (cheers). So well did they all know his sentiments and feelings with regard to the repeal of the malt tax that it could hardly be necessary for him to state that if he could render any service to the cause by working in committee, or elsewhere, he should be most happy to render assistance. Before he sat down he would just observe that he did not advocate the repeal of the malt tax as a boon which was to be set off, as it were, against protection (Hear, hear). He did, however, consider it to be one of the most oppressive of the burdens which agriculture had to bear at the present time; while at the same time he agreed with Mr. Bennett, that there must be a revision of local burdens, poor's rates, county rates, and other galling burdens which the farmer had to bear. If the country was to have cheap bread, it was necessary that the farmer should be relieved from those burdens which trammelled him in the act of producing it (Hear, hear). If the question was fairly laid before the consuming population of England, he believed they would join them in crying out for that which would be beneficial to the people generally as well as to themselves. He felt persuaded that they were then engaged in advocating a right cause—in acting for the poor as well as for the middle classes; and he trusted that they would not be placed in such a position as to be called upon to unite with the poor man to demand justice of the upper classes (Hear, hear); that justice which those classes did not seem inclined to yield to them in a friendly manner. The yeomanry and farmers of this kingdom would, he felt persuaded, ever be distinguished for devoted attachment to the Sovereign; and, unless oppressed and goaded beyond measure, they would never do any act which would alter the high character they had hitherto maintained. He felt convinced that nothing would induce them to take strong steps unless they were really goaded on to destruction; and even if they should be placed in their last extremity, they would consider that the fault rested with Her Majesty's advisers, and not with Her Majesty. But he trusted that they would not be placed in that dilemma; and although the aristocracy and landlords of this country did at the present day appear to treat with contempt everything which came from agriculturists, still he did hope that when they saw that the farmers were determined to have justice, their demands would not be withheld (cheers). He would not trouble the meeting any further, but conclude by stating that he entirely concurred in the remarks which had fallen from Mr. Cheetham in introducing the subject.

Mr. TAUNTON thought that all in that room felt that the malt tax was extremely objectionable, and their endeavour should be to convey that impression to the minds of those who were without. The other taxes mentioned in the course of the discussion were of minor importance to the malt tax. As regarded the hop duty, it had been stated that that was in many cases an actual benefit to the producer. The grower was, then, benefited at the expense of the public. Such was the immense expense of growing hops, or rather of managing the whole affair, that comparatively few could enter into the cultivation. One or two overgrown capitalists were able to succeed, while the man whose capital was very limited was soon ruined: the latter was obliged to come into the market in a cheap year, while the former waited for a dear one, and with a large accumulated stock obtained high prices. But that state of things did not consist with the general interest of farmers (Hear, hear). Their proper object, as agriculturists, was to arrive as far as possible at a position in which every person who engaged in the operations of agriculture might, if he were prudent, fairly expect to obtain his share of profit. The repeal of the hop duty would, he conceived, go a great way to equalize the risk and the profit of the cultivation. Bricks had been mentioned as though the duty upon them was a trifling affair; but the price of bricks affected the interests of farmers more than they generally imagined. If they liked to see a team of plough horses in good condition, how much more natural was it to entertain a similar feeling with regard to the ploughman (Hear, hear). The man who had plenty of good ventilation, and who was enabled to command the decencies of life through the structure of his dwelling, was much more likely to attend to his work with spirit, and with advantage to his employer, than the man who pigged with his family in a place little better than a sty. That being the case, it was the interest of farmers that building materials should be rendered as cheap as possible. It was the object of some landlords to build a good house for a labourer's family for about £60: if the brick duty swelled the amount to £90, its remission would enable them to provide for three families instead of two. Even as regarded the moral character of the labourer, such a remission was most important: 5s. 10d. per 1000 and 5 per cent. was a duty which operated injuriously on the moral character of the entire labouring population. He considered the malt tax the most partial tax ever imposed. Men who would otherwise enjoy a good beverage in their own homes, were driven by it to the ale house, or else to the use of that most detestable of all beverages—bad tea (laughter). On going into labourers' dwellings he often saw them pouring out hot water coloured with some vile stuff called tea. Thence it was that they had the union houses filled with cases of vermin, and so many poor women labouring under dyspepsia. Tea, especially such as was ordinarily consumed by the labouring classes, was the most relaxing of all beverages. He had hoped to hear more on that occasion with regard to the utility of malt for feeding purposes. Especially was it to be deplored that Lord John Russell would not allow the drawback suggested, in order that graziers, farmers, and scientific men might bring malt to a satisfactory test. On looking into a respectable paper, on the previous day (the *Economist*)—a paper which contained many good truths—he was surprised to find an attempt to prove that the malt tax was paid by the consumer. Never was there so miserable an argument, so practical a misrepresentation. It was true that, so far as malt was converted into a beverage, the consumer paid the duty. But did the consumer pay the duty on the unground barley, or the malt which never had existence? (Hear, hear.) Up to a certain point, the consumer paid; but as soon as his pocket became exhausted he ceased to pay, or at least paid nothing

beyond his means. Therefore there was nothing at all in that argument. It had been justly said that the real question then was, not whether there was an evil—they all felt the evil—but where the remedy was to be found. If they would allow him to make a suggestion, he would say, "Drive the nail that will go." He would add one word about the feeding qualities of malt, in confirmation of what had fallen from Mr. Hobbs. He would ask if it were not the practice in the livery stables of London, when an old horse required to be disposed of, to fatten the animal on malt, and then bring him to market? Such was, he believed, the invariable custom in such cases, and the object was accomplished within a remarkably short period (Hear, hear, and laughter). There was not a knacker or horse dealer in London who was not in the secret; and, therefore, though Mr. Hobbs had pointed out the fact with his usual sagacity, he was not the sole depository of that species of knowledge (laughter). But now as to the means of getting rid of the malt tax. He repeated his advice to drive the nail that would go. They had contended for protection, and they had combated in vain. He was not one of those who thought it possible to get back protection. If any attempt of that kind were made, experience told him that other classes of society would prove too many and too shrewd for them (Hear, hear). But let them—the farmers—take a leaf out of the book of their opponents (cheers). He doubted not that many of the gentlemen whom he addressed had before then mounted a spirited colt; and though the snaffle was placed between his teeth, not the least effect was produced by it (laughter). But if they happened to have eight or nine miles of a Newmarket country before them, and tipped him the silk and the needles, away he would go, and there was no difficulty in the case (laughter). In like manner let them loose the reins and join in the cry of free trade; shouting, "Free trade for corn!" "Free trade in home-grown malt!" "Free trade in home-grown tobacco!" "Free trade in home-grown sugar!" "Free trade in everything!" (cheering and laughter). Was it not absurd, that other classes should have free trade, and that it should be denied to them? (Hear, hear). Never mind whether free trade was in itself wise or foolish, let them proceed at once to Lord John Russell's official residence in Downing-street, and unite heartily in the cry. What was sauce for the goose was sauce for the gander (Hear, hear). What a valuable virtue was consistency in a minister! What a thing for a minister to be able to say, "I never turned my coat; I have always been a consistent free-trader." Let them, then, call on ministers to abolish all restrictive taxes which pressed upon agriculture, and hurrah with all their might for free trade. If he might venture to differ from so great an authority as the Duke of Richmond he would remark, that a sentiment had been expressed by his Grace in which he certainly could not concur. It was, that because Mr. Cobden had advocated a certain measure, the farmers should not unite with him in fighting their own cause. He (Mr. Taunton) was of a different opinion. He thought they should, to a certain extent, make use of free-traders and free-trade doctrines to emancipate themselves from burdens which were too heavy for them to bear. He had only one observation to add with regard to the burdens pressing on agriculture. By the act of Elizabeth personal property became rateable for the relief of the poor as well as real. But some acute lawyer found out a distinction; he said that property must be visible, otherwise no one would tell where to find it. Through this discovery it was that the funds escaped; and thus personal property had hitherto escaped, because it was pretended that there was no way of ascertaining its existence or value.

Mr. WILLIAMS said that though he had felt much pleasure in hearing the opinions which had been expressed that evening with respect to the malt duty and some local burdens, there had been one omission of some importance, viz., the county rates (Hear, hear). In two counties with which he was connected, Wilts and Berks, the evil was very great. New asylums and prisons were rising up, the expense of which could not but fall injuriously on agriculture. In Wilts there was then broached a scheme for building a new lunatic asylum, and, as the magistrates could not borrow any money, to be paid off in 30 years, they had come to the conclusion that in such prosperous times it might be paid off in five (laughter). He maintained, then, that county rates formed a serious burden to agriculture. The expense connected with prosecutions was very heavy. In coming up to town that day he entered into conversation with a solicitor, and while he was speaking of the burdens which rested on the agricultural interest, his companion said, "I will give you an instance. The other day a lady was robbed of a shawl, and prosecuted the person who stole it. I, as a professional man, managed the prosecution; the lady received her expenses, I mine, and you and your brother farmers have to pay the whole cost" (laughter). With regard to the malt tax he quite agreed with everything that had been said that evening by Mr. Cheetham and Mr. Bennett. What made their case peculiarly hard was, that the malt tax, as well as all their other burdens, was weighing them down at a time when they were deprived of the means of meeting their difficulties. They had been told that if their case were properly represented to the legislature, their demand could not be refused. He would not consent to advocate the repeal of the malt tax as that which would make amends for the loss of protection, and he deprecated all attempts to place the matter in that light (Hear, hear). He advocated the repeal of the malt-tax on the ground that by the operation of that impost, farmers were deprived of the means of feeding their cattle in the most economical manner, in other words, with their own produce; that they were driven abroad to purchase a foreign article in the shape of linseed and oilcake, and could not avail themselves of barley, except in the raw state, as an article of food for their stock. The duty, in fact, stood between farmers and the free use of their over productions, and operated most injuriously upon their interests. Now, as to the remedy. They had a right to demand a readjustment of the burdens by which they were oppressed, and to accompany that demand with another, viz., that all their burdens should be put into a clear and tangible shape. They had a just claim to be placed on an equal footing with those who sent their produce into the English market, and were, in fact, their competitors in that market. It was not necessary that they should tell the legislature precisely what ought to be done; it was enough that a rope had been put round their necks, as if with the intent of throwing them into the sea, and those who imposed that yoke were bound to remove it. He saw no reason why there should not be a new property tax. The gentry of such a county as Wiltshire were not like those who lived in a watering place, and who paid, indirectly, their fair share of the local burdens—the highway rates, the county rates, the poor rates, and the other burdens which rested upon the neighbourhood. To him it appeared that the only way of lightening the general pressure of local burdens in the rural districts, was to place a portion of them on the consolidated fund, and if that Club were to be of any practical use, it must go to the legislature, and demand, on behalf of farmers generally, that they should be placed on an equality, as regarded taxation, with other classes of the community. Only let that be done, and he felt satisfied that

the principle of protection would be restored. The members of the House of Commons had once voted away the malt-tax, but they quickly restored it in order to escape a property tax (Hear, hear). A similar result would be witnessed if a demand were made for the fair apportionment of local burdens, and in that way they might get back protection. There was one thing to which he could never consent; namely, that they should never hold out the right hand of fellowship to that arch enemy to their interests—Richard Cobden. As long as he could speak, he should be disposed to say that that man was an enemy to himself who would enter into fellowship with Cobden. But for that individual the farmers would never have lost protection.

Mr. SHAW, of the Strand, said he did not contemplate making many remarks on the question before the meeting. He apprehended that not only that evening, and in that room, but over and over again, and in other places, it had been proved to the satisfaction of the minds of practical men that the malt-tax was an intolerable grievance; and as on the first occasion of a meeting being held in that place, some four years since, for the purpose of forming an Association to obtain the repeal of the malt tax he had observed that it was perfectly useless to discuss if they did not act, so now he felt himself to be placed in the same position, and must declare his conviction that whether they had cause to complain of the malt-tax, or the poor-rates, or county rates, or the game-laws, any isolated attempts, whether in that club or in Cambridgeshire, or elsewhere, would prove perfectly useless unless they acted as well as talked (cheers). Had that protection which they prized so much been wrested from them without action? Did not those who had deprived them of it act year by year, month by month, day by day? Did they not industriously and sedulously persevere in their object? and could they, the farmers, merely by meeting there and in two or three other places hope to succeed? (Hear, hear). They had been told that evening to appeal to their representatives. Why, they had done so again and again—as many of them, at least, as dare (Hear, hear). But he would ask whether there could possibly be a more unfortunate moment than the present for making such an appeal? Were one-fourth of the farmers of the country who were tenants from year to year in a position in which they dare appeal to their representatives? (Hear, hear). No such thing. That, therefore, was not the way to act. The only recent instance of anything like a successful opposition to an oppressive measure occurred a short time since in the county of Bedford. It was proposed to make a large outlay for a county gaol. The farmers moved simultaneously—not in an isolated way—not two or three upon each estate, who could be silenced at once by the landlord or his agent; but, he repeated, simultaneously, and the movement was a successful one. In like manner, if the gentleman who had told them of the scheme of building a lunatic asylum in the county of Wilts at the expense of the tenantry, could, when he got back to his neighbourhood, induce the general body of farmers to join him in opposition, there would be some hope of success. But let them rely upon it that an isolated movement here and there would be of no avail. They must act together, and not partially and separately; without union they would be crushed (Hear, hear). He did not know whether or not it were quite consistent with the object of that evening's proceedings to devise any plan of action with regard to the malt tax; but it was not impossible that something of the kind might grow out of the discussion. What they wanted was to devise some effectual means of obtaining relief from the malt-tax, the poor-rates, or any other burdens by which they were unduly oppressed. Some of the gentlemen present were on the following morning going to

attend a meeting of the General Protection Society. Here, then, was central machinery which ought to be put in motion. There were about one hundred and fifty local protection societies, the majority of whose members were tenant farmers. Surely, then, the means were already prepared for making a demonstration. If they could not do what had been done in the manufacturing districts, it might at least set these one hundred and fifty societies in motion; and that, at all events, would not fail to produce some effect. They could never do any good by holding isolated meetings, or expect landlords to take burdens off their shoulders to place them on their own, which must be the case if the malt-tax were repealed. He presumed Mr. Cobden would not contend that taxation be so reduced as to render it necessary to sponge out the National Debt. (Hear, hear). If there were to be a considerable reduction of taxation, some of the taxes remitted must be imposed on property. That being the case, let them, in imagination, change places with the owners of property. Would they, if they were landowners, at the mere asking, take a burden off the shoulders of others, and remove it to their own? Let them, then, show by their zeal and co-operation that they felt the burden to be oppressive and when they returned to their respective localities, let them endeavour to infuse into the minds of others a sense of the necessity for combined action, seeing that by such means alone could they hope to succeed.

Mr. SMITH, of Springfield, Rye, said that one of the preceding speakers (Mr. Taunton) had remarked that only men of large capital could ever grow hops. He differed from that gentleman. The duty amounted, in many cases, to about £20 an acre on an outlay of £12; and when such was the fact, large indeed must be the capital of that man who could afford to act as had been represented. He trusted that the repeal of the hop duty would never be lost sight of (Hear, hear). He had been much pleased with the remarks of Mr. Shaw. He was quite right in thinking that it was useless for them to meet there, and in other places, without they did something beyond. Unless the tenant farmers took up a different position, and appealed fearlessly to the public and the Legislature, they might rely upon it they would never obtain any redress. The sentiments expressed by Mr. Shaw were universally entertained in his own district, and he hoped that all who were present would be the instruments of spreading such views throughout their respective localities. As farmers they had now got into a very awkward position; and unless they bestirred themselves, never would they be relieved.

Mr. SELMES, of Beekley, also expressed his entire concurrence in the remarks and advice of Mr. Shaw. Such remarks were very much needed at the present time. He felt perfectly satisfied that, unless they adopted most determined measures, they would never achieve their object. As treasurer of the Total Repeal Malt Tax Association, he felt that a deep responsibility rested upon him; however, he did not like to proceed without some practical and effectual demonstration. That was the proper time to come to a decision. Such was the situation of affairs in his county—viz., Sussex—that, unless something very unforeseen should occur before next Michaelmas, the most disastrous consequences would, he feared, ensue (Hear, hear). Under such circumstances, he thought they ought to decide upon some practical mode of operations (Hear, hear).

Mr. CHEETHAM then replied.

After a desultory discussion, on the motion of Mr. Cheetham, seconded by Mr. Bennett, the following resolution was adopted:—"That it is the opinion of this meeting that the malt-tax is an anomaly, being equal at the present time to 70 per cent. upon an article of the farmer's own produce; that it interferes with the best modes of cultivation, prevents the most

profitable use of the produce of his own fields, enhances the price of artificial food for stock, limits the consumption of barley and the demand for labour, and tends unduly to raise the price of meat and deteriorate its quality, experience showing that malt produces the best quality of meat; it is further objectionable in enhancing the price and deteriorating the beverage of the working classes of the community. At the same time it is the full conviction of this club that, under the present greatly altered circumstances of British farmers, its continuance is now quite insufferable, and that its repeal must also be followed by an entire revision of general and local taxation, as unequally and very unfairly pressing upon the cultivators of the soil of this kingdom."

LONDON FARMERS' CLUB.

MONTHLY MEETING OF THE COMMITTEE OF MANAGEMENT.—FEB. 12.

Present: Messrs. W. Bennett, J. Carter, S. Cheetham, W. Cheffins, G. Emery, W. Fisher Hobbs, T. Knight, C. H. Lattimore, J. J. Mechi, J. Neame, T. Owen, J. Pain, G. Parsons, W. Purser, W. Shaw (Strand), J. Smith (Rye), and R. Smith (late of Burley). W. Shaw, Esq., in the chair.

The minutes of the last meeting were read, confirmed, and signed, by the chairman of this day.

The following gentlemen were elected members of the Club—

W. W. Broomfield, Dunchurch
J. Clutton, Whitehall Place
R. Clutton, Hartswood, Reigate
E. W. Mathew, Wern, Tremadoc, Carnarvon
C. Pearson, M.P., Park-street, Westminster
W. Slatter, Stratton, Cirencester.

Some other names were read for the first time.

The Secretary was directed to forward the following, in answer to a letter addressed by the members of the March (Cambridgeshire) Farmers' Club to the Central Club on the present depressed state of agriculture—

"That it is the opinion of this Club, that the chief movement that can now be made with any hope of serving the farming community is to press upon the serious attention of Parliament and the public at large the immediate necessity of repealing those taxes particularly pressing upon the cultivators of the soil: such as the Malt and Hop Tax, and the revision of the local charges unjustly bearing upon the farming interest."

It was announced that Mr. J. Pain, of Felmersham, Bedford, had consented to act as Vice-Chairman of the Discussion Meetings for the present year.

The late secretary of the Harleston Farmers' Club, Mr. R. B. Harvey, before his death, entertained the purpose of reprinting, with the sanction of the Club, the entire series of the reports of the discussions of the Club; believing that the practical hints on almost all farming matters contained in them, and the fact that it was the *second* Club established in England, would make such a work one of considerable interest, now that the numerous and varied advantages resulting from farmers' clubs are so generally admitted in the agricultural world. The accomplishment of this purpose, which was pre-

vented by his too early removal, was taken up by the Club itself, at its last annual meeting, as a suitable testimonial of respect for the memory of one who was, from the part he had always taken in its affairs, so intimately identified with it. The committee appointed to carry this resolution into effect, have determined to spare no efforts to make this work useful to all who are engaged or interested in agriculture; and the price of the volume (2s. 6d), which will contain about 200 pages, and will give the experience of the district upon numerous practical questions during a period of nearly ten years—is purposely fixed as low as possible, to secure an extensive sale. Persons desirous of obtaining this useful work should address Mr. F. Dix, the secretary, Dickleburgh, Norfolk.

THE LATE THOMAS GIBBS, ESQ.

Was born at Ampthill, Bedfordshire, on the 8th of Aug., 1771. After having received his education at the Aspley School, he proceeded to Kew for the purpose of studying botany and agriculture as a pupil of the late celebrated William Aiton; and he eventually became one of the first English botanists of his time. He founded the firm of Thomas Gibbs and Co., of Half-moon-street, the seed-merchants, and having taken an active part in conjunction with the late Lord Somerville, Sir John Sinclair, and others, in the proceedings of the late Board of Agriculture in the year 1799, he received the appointment of seedsman thereto. For many years he was engaged, at the request of the Board, in experiments on the value of different agricultural plants; and his attention was especially directed to experiments on the cultivation, properties, and habits of the grasses; and from him was obtained many of the results contained in the works subsequently written on that subject. He was one of the founders of the Horticultural Society of London, and also of the Smithfield Cattle Club. At the anniversary dinner, at Christmas last, when his health was drunk as usual as the father of the Club, it was stated that he was the only original member living, and that he had been a member upwards of 50 years.

In 1799 he married Sarah Prosser, the youngest daughter of the late Thoswihan Brandreth, Esq., of Haughton House, Bedfordshire, one of the justices of the peace for that county. She survives him, and by her he has had a numerous family. His eldest son was the late Thomas Brandreth Gibbs, one of the founders and the first honorary secretary of the Medicobotanical Society of London, to whose memory there is, in the chancel of Ampthill church, a monument erected by that society, in testimony of his valuable exertions on its behalf.

His four surviving children are Humphrey Brandreth, the present high sheriff of Bedfordshire, who some time back took the maternal surname of Brandreth in place of, Gibbs; Robert Gibbs, of Compton, Surrey; Rebecca, the wife of J. B. Bergue, Esq.; and Benjamin Thomas Brandreth Gibbs, known to most of our readers as the honorary secretary of the Smithfield Club, and director of the Cattle shows of the Royal Agricultural Society of England, and, since the retirement of Mr. Gibbs, sen., as the head of the firm of seed merchants to that society.

Thus for a period of upwards of fifty years did Mr. Gibbs stand prominent in the agricultural world, possessing talents of a superior order, combined with a wonderfully retentive memory; and, though he has not mixed in public of late, there must be many of our readers who remember him when he did, and who will bear us out in saying, that no man in his time has done more to promote the agriculture of the country than the late much respected Thomas Gibbs.

SCOTCH FARMING.

A correspondent of yours has stated that the high rents paid in Scotland were chiefly attributable to the tenants not being burthened there with heavy poor rates, as they are in this country. There is no doubt a considerable difference betwixt the two in this respect, but not so great as to account for the difference of rent. The rent of the East Barn Farm, near Dunbar, is £2,250, for 489 acres statute, or about £4 12s. 6d. an acre. On inspecting it, I remarked that the high rent might be owing to the tenant having no poor rate. "No poor rate!" Mr. Murray replied, "I pay £40 a-year, and my landlord £60." This £40 on 489 acres would be about 1s. 8d. the acre. In this locality, which, from being a manufacturing one, has its rates enormously high, the whole taxes amount to about 6s. 8d. the acre. This would make the difference betwixt the two 5s. the acre. Land may be said to let on an average here at about 30s. the acre, the rate therefore cannot account for the difference of rent; and if this be so, it must be owing to better land or better management. The rise and progress of Scotch farming is curious and interesting, as showing what may be accomplished in no very long space of time by well-directed endeavours. In my "New Husbandry" (page 22), a description is given approaching to the ludicrous, drawn by Lord Kaimes, in his "Gentleman Farmer," of what the Scotch farming consisted in 1768. He says, "Our oxen are scarcely able to support their own weight, ten going in a plough, led on by two horses; the ridges enormous masses of accumulated earth; over the greater part of Scotland a continual struggle going on for superiority between corn and weeds." Well might Sir John Sinclair exclaim, in 1812, "What a contrast to the present state of Scotch husbandry! and it is singular that, with hardly any exception, these imperfections have been removed. In the same book may be seen the different causes enumerated which have effected this great change. The principal of these are, the establishment of parochial schools; farmers accustomed to travel; landlords either improved their estates themselves, or encouraged their tenants in exertion; leases granted; economy and simplicity of management; good-sized farms; rents progressively increased, &c. It must, however, be admitted that there is a considerable drawback to the return of rent from the large outlay that is going on in farm buildings. Each farm has its steam engine with its tall chimneys; and at East Barus, new buildings, with remarkably neat cottages, had been lately erected, at the cost of many thousand pounds. Indeed, Mr. Grey, of Dilton, mentions, in his report of Northumberland farming, that £10,000 had been expended on two of the farm buildings belonging to Earl Grey; but, on the other hand, the increase of rent had been progressive; seven farms, in the beginning of the present century, produced a rental of £5,560, but falling out of lease, were relet for £12,057. In like manner the Duke of Roxburgh's rents have been said to have increased 33 per cent.; and in the "New Husbandry" a case is mentioned (p. 31) where a landowner near Howick, on renewing a lease with an old tenant, obtained an advance of £100 a-year; and after the agreement was concluded inquired whether the occupier had not made a good sum during his late term, to which the reply was—£8,000! Do any of the farmers of the old school make £8,000 on their farms? Do they not rather content themselves with not being losers, and are satisfied if they can exist and pay their rent at a proper day? There has now been a full statement given of the merits of Scotch farming, and of the grounds upon which it rests; and if these statements were founded on a mere visionary chimaera, they might be doing all the mischief your correspondent seems to ascribe to them; but when facts, stubborn facts, are produced, when

these are supported by unquestionable authorities, so far from doing mischief, they may lead to incalculable good. They may tend to dispel the mists of prejudice from eyes too long darkened with them; they may hold up for imitation a model of improved practice; and by the rewards attending good farming, they may encourage laudable exertions. A man seated on the false eminence of self-satisfaction, and viewing with complacency the struggle going on, as described by Lord Kaimes, may please himself, but can never please others.—LAW. RAWSTORNE, Peulwortham, Preston.—Gardeners' Chronicle.

THE DUCHESS TRIBE OF SHORT-HORN.

The following letter was received by George Vail, Esq., of Troy, from Mr. Bates, of Yorkshire, England, dated August 9th, 1847:—I forward you a paper with an account of the Yorkshire County Agricultural Society's meeting just held. I sent five animals, viz., 2nd Oxford and her last five calves, to show the uniformity of the family; all obtained premiums (two first, and three second premiums). Mr. T. Bell showed a calf, a grandson of your Hilpa, got by my 2nd Duke of Oxford, which won the first premium for bull calves. The bull calf, shown by Mr. Maw, which won the 2nd premium, was also got by a bull of my breeding. Mr. Maw also exhibited the second best bull under three years old, got by my Duke of Northumberland, and bred by Mr. Robert Bell. Mr. Maw also showed Red Duke (of my stock), and which would have beaten Mr. Parkinson's bull Capt. Shaftoe, had he been in condition, being much superior to Shaftoe. Shaftoe was very fat, but his quality was bad, and though a year older than my 2nd Duke of Oxford, was at least one-fourth less in weight, with all his high feeding. My 2nd Oxford is from the same cow as the dam of your Wellington, and got by the same bull. Nearly all the prize cattle of the Royal Agricultural Society's show (to which I sent nothing) this year, were at the Yorkshire show. Mr. Parkinson was sadly disappointed in not getting the first premium on Shaftoe; but there were many better bulls in the yard. This bull, Shaftoe, was shown in 1845, at the Highland Society's meeting at Dumfries, and was beaten by Mr. Harvey's Walton (of my breed), who got the first premium, and a son of my 2nd Duke of Northumberland won the second. At the Royal Agricultural Society's show this year, Walton was shown and beaten by Shaftoe, who won the first premium there. The judges did not condescend to look at or handle him; they were totally unfit for their office, never having owned or bred a short-horn. It is a disgrace to the Royal Agricultural Society, that Walton, now shown for the third time at its meetings, has had the worst bulls each year placed before him. Shaftoe was shown in 1844, at Richmond, where my Cleveland Lad 2nd won the 1st premium, and Shaftoe the 2nd, beating Mr. Hopper's bull, Belleville. Thus my 2nd Oxford beating Shaftoe this year was equally decisive as against Belleville. Belleville very improperly received, in 1846, the highest prize at each of the four greatest shows in England, Scotland, and Ireland. My three short-horns, that were placed second to others, were as superior to those placed before them, as the two that were placed first, in their classes, and this was admitted by all who saw them. Fat and size are too much looked at in decisions in England, as they please the eye. I give you this detail, and send you five newspapers with accounts of the Yorkshire show, that you may show them at your great state show at Saratoga, and may send them to your newspapers and to Canada. I think you may state the near relationship of yours to these of mine. I do not doubt you will be successful with Hilpa at Saratoga.—American Agriculturist.

AGRICULTURE IN THE WEST AND NORTH OF IRELAND.

Mr. John Lamb, the intelligent and impartial Quaker, whose "Notes on the State of the Country" are being published in the *Northern Whig*, has made another tour of the western and north-western counties, and the following is an abridged report of his observations upon the present condition of the counties of Mayo, Sligo, and Donegal:—

"Around Westport and Castlebar there was more appearance of starvation than in any other districts I had lately visited. The poorhouses at both towns are filled to overflowing; the agents of several benevolent committees have here expended largely, yet all that has been done seems not equal to meet the general destitution. The Marquis of Sligo is exerting himself as far as he can with his reduced means; and the Marchioness is doing all a young and benevolent heart can suggest. Out of her own savings she expended £50 in releasing warm clothing and blankets out of pawn during the inclement weather for the poor, and superintended the proper distribution herself. His Lordship, instead of hunting, takes exercise in thinning his plantations, cutting down trees, and sawing them up into firewood for the poor. If he continues to live within his income there is no danger of him, as he is not embarrassed, and his broad lands will yet be valuable. The son and heir of the man who acted so nobly as his father did, while Governor of Jamaica, will always have the best wishes of every true friend of freedom.

"Lord Lucan appears to be doing more in the way of reclamation and draining than any other person in the country; and, of course, in so doing, gives a very considerable amount of employment; but he does everything in such an extremely ungracious manner, that he does not get sufficient credit for the amount of good he does. No one seems to have a kind word for him.

"At Ballina I found there were several Scotch agriculturists over, looking after farms. One gentleman represented a small joint-stock company lately established at Edinburgh, got up through the exertions of a benevolent lady of spirit and means, who has invested several hundred pounds in the undertaking. The object is, to take farms in the west, and cultivate them on the most improved principles, by Scotch stewards. The Baptist Society of London have taken some land to found a model farm, which, no doubt, will be very useful, if well conducted.

"Lord Palmerston is continuing, with increased vigour, the improvements on his property in the county of Sligo, and, consequently, is giving employment to his tenantry. They have made considerable progress since I last noticed their operations. Some of the large fields are made worth double what they were. The quantity of stones dug up and gathered out of one field is beyond conception. When the operations now in progress are completed it will make a wonderful change in the appearance of the property, and in the value of it; but all the landlords in the west and the north also are cast into the shade by the exertions of John Hamilton, of St. Ernau's, near Donegal. Every journey, for the last two or three years, I have marked, with intense interest and increasing pleasure, the progress he is making. He has now fully 600 acres in his own hands, nearly all thorough-drained, levelled, and trenched

18 to 20 inches deep, laid out in large beautiful fields like a lawn. Upwards of 400 acres will, this year, be under active cultivation, and that all by spade labour. He is getting it dug 9 to 12 inches deep for 6s. 8d. the statute acre. The men work in gangs of six each. They take care to match themselves, as some are much more expert than others. At present he gives employment to 500 men. Sometimes he has as many as 1,000. Nearly, if not all his labour, is done by task-work—even the reaping. He encourages digging-matches by offering premiums to the best and quickest gangs of six; and by this means his men have become so expert, that at even the low rate of 6s. 8d. the acre they can earn from 10d. to 1s. 3d. per day. How noble his conduct appears to be, compared to that of many of the narrow-minded country squires, who have declared to me that they would not improve one inch of their lands, because, in so doing, they would benefit the neighbouring property as well as their own, by keeping the rates down!

"John Hamilton is now draining a large extent of the land held by his tenants; but I cannot state on what terms. If all the landlords of Ireland would follow his example, we should have but trifling poor-rates, no able-bodied labourers wanting employment, and could spare food that would support one-fourth of the people of England, and leave plenty for all our own people."

As an instance of the difficulties and obstructions which strangers bent upon ameliorating the condition of the Irish people must be prepared to encounter in their career of usefulness, Mr. Lamb quotes the following:—

"With the last number of my notes I gave some extracts from the report of two Manchester merchants, who travelled over nearly three-fourths of our island last autumn, to see, with their own eyes, the true state of Ireland and the Irish. When in the county of Limerick, at Castle Connell, they inquired if there was any one in that locality reclaiming waste land? They were directed to James M'Nabb, of Mona-lodge. They called on him, and he politely showed them over his farm, and explained the whole process of reclamation. They say:—'We were highly interested in what we saw; and are convinced that the bogs of Ireland, under similar circumstances and management, may be reclaimed. The farm consists of 272 statute acres. Eight years ago he set to work upon this bog land, which, as land for agriculture, was not then worth 6d. per acre. He has reclaimed 120 acres; 16 are under plantation, and the remainder (104) under crop. The produce of his potatoes, wheat, and oats, was equal, in quantity and quality, to that of the best land in Ireland; and his garden produces as fine vegetables as any in the island, which is saying a great deal. The condition of the cattle and sheep upon the farm was most beautiful. We saw a field of clover, which had been three times mowed this year, and was then most luxuriant, where there was nothing but deep bog five years ago. The land reclaimed is on a bog, six feet deep; yet the surface is sound, elastic, and hard. On his farm of 104 acres, which eight years ago would not have fed a goat, he now has 20 milch cows, 14 bullocks, 26 calves, 50 sheep, 3 horses, and 12

pigs. He sends 130 boat-loads of turf to Limerick annually, —each load, on an average, is worth £10. This gives great employment to the people, besides reclaiming the land; and the handling of the turf employs old men, women, and children. This bog was let, 23 years ago, for a term of 999 years, at a fixed rent; yet the present proprietor brought an action to recover possession, and it was tried last July, at Limerick. The plea set up was, that the father of the present proprietor had no power to grant such a lease, and that the land was poached.

The idea of poaching a bog was laughed at, and scouted out of court by a verdict in favour of Mr. McNabb. The landlord threatens to carry the case to the House of Lords; it is possible that he will see the folly, if not the injustice, of such a step. The jury were composed of landed proprietors, not farmers. We feel confident that, should he follow out his threats, and the case become known, a subscription in England would most readily be raised to assist Mr. McNabb in defending the action."

LECTURE ON AGRICULTURAL CHEMISTRY, AT SAXMUNDHAM, SUFFOLK,

BY J. C. NESBIT, ESQ., F.G.S., F.C.S., ETC.

On Thursday evening, Jan. 4, a gratuitous lecture was delivered by the above gentleman, in the new Market Hall, of Saxmundham, Suffolk, to between 300 and 400 of the farmers and other residents of the neighbourhood, the former constituting probably nine-tenths of the assembly. The occasion was one of unusual interest, and the attention of the meeting, having been secured at the outset, was exhibited throughout. The chair was taken by W. Long, Esq., of Herts Hall, to whom the agriculturists of the district are indebted for the erection of the handsome building in which so many of them assembled on the evening in question.

Among the gentlemen present were R. K. Cobbold, Esq., Carlton Rookery; — Cobbold, Esq.; Captain Bloomfield; J. G. Cooper, Esq., Blyboro Lodge; Thomas Crisp, Esq., Gedgrave Hall; E. Cottingham, Esq., Covehithe; S. Cottingham, Esq., Reydon; E. Dewings, Esq.; R. Garrett, Esq., Leiston; H. A. Cocksedge, Esq.; Thos. Mayhews, Esq.; A. Stanford, Esq.; John Crabten, Esq.; J. R. Cooper, Esq.; H. Southwell, Esq.; H. G. Southwell, Esq.; — Ling, Esq.; Messrs. R. Bond, J. and H. Flatt, Keer, Howard, S. Howlett, T. Girling, A. and R. Crisp, T. Capon, jun., N. Garrett, E. Packard, S. Flick, James Cooper, D. Barker, J. Sherwood, J. Girling, C. Churchman, the Reverends Skinner, Baker, White, King, &c., &c.

The Chairman having introduced the lecturer as a gentleman who was connected with the agricultural and scientific school of Kennington, London,

Mr. NESBIT spoke as follows: Mr. Chairman and gentlemen, I feel very highly gratified at seeing such a numerous assemblage of gentlemen interested in the progress of agriculture; and I shall feel very great satisfaction this evening, in endeavouring, as far as I possibly can, to elucidate the science of agriculture with reference to the application of chemistry to its development. I am not come down to you with a vast amount of chemical apparatus; I have not brought here a prodigious number of curious things of which you might have wondered what was their use. I come to you this evening with the language of plain common sense; and with the operations which you are continually performing on your farms as the basis of my arguments, I shall see if I cannot, by applying to them the rules of plain common

sense, elucidate the subject, and secure to you a greater knowledge of the *science* of agriculture than you already possess. Before doing this, however, I must make one or two observations. And gentlemen, I must, in fact, quarrel with you, because you arrogate to yourselves alone, what I think you ought not to claim for yourselves alone—the title of *practical men*. "We, we, we," you say, "are the practical men," as if there were no other practical men in the kingdom besides yourselves, and as if no one else understood the nature of things. Now, I mean to contend that the title "practical" does not belong to the farmer alone; and I have certainly some doubt whether it ought to be applied to the farmer at all, in its full signification. I will take, for example, the case of Mr. Tomkins, who is a capital farmer. He farms his land well; he keeps stock, and grows turnips, and does everything in the best manner. Now, as a poor student in science, I want to gain from this gentleman some useful practical information. With this object in view, I say to Mr. Tomkins, "Pray, what have you got in your soil—what are its properties?" He replies that it is a sandy soil, a loamy soil, or a clay soil. "Yes; but what have you got in the one and what in the other?" "I do not know; I have not gone so far as that yet." I then ask, "What have you got in your manure?" and Mr. Tomkins, good, easy, practical man as he is, says, "I cannot tell you." If I ask him what his crops take out of the land, again he declares that he cannot answer my question; he knows that they take away something; he knows that if he sows wheat, barley, or anything else, something or other is taken away by the crop; but what that something is he cannot determine. Lastly, if I ask Mr. Tomkins what is in the air and what in the water, he is still obliged to confess that he does not know. Now, gentlemen, I appeal to you whether the term practical, in its largest sense, will apply to Mr. Tomkins, while he actually knows nothing whatever of those things on which the success of the agriculturist peculiarly depends. I grant you that Mr. Tomkins looks at his crops, manures, and soils, in the whole, and that he has got some general idea of them as a whole; but then he never seriously considers what this whole is composed of; and what I propose to do is to extend his knowledge a little further; so that, instead of his at-

tention being confined to those generalities on which it has hitherto been fixed, he should be made acquainted with everything in the soil, in the crops, in the manure, in the air, and in the water (Hear, hear). Now, I ask you, gentlemen, as practical men, to say whether you consider that this knowledge would not be worth having, and whether it would not be well for every man, as far as it may be in his power, to seek to attain such knowledge. Well, now, having thus prefaced my subject, I shall at once commence the consideration of the manure made on the land; and I shall afterwards offer a few observations on the rotation of crops and the nature of those substances which are offered to the farmer under the name of artificial manure. And let me here observe that I shall be very happy, at the close of the lecture, to hear any remarks, or to answer any questions which may occur to any one present, having reference to anything which I may have said; for some of the things which I intend to present to your notice may be so new, and so contrary to ideas previously impressed on your minds, that you may doubt the truth of my statements; and the best way to settle any question of that kind is to argue the point at the close of the lecture (Hear, hear). Let us begin with the far-famed farm-yard dung, which is supposed to be so superior to all other things. It is that which grows the crops, and which, in the estimation of the farmer, is not surpassed by any possible combination of substances. Now, what is this farm-yard dung? It is formed by acting upon vegetable matter in some way or other. You either take a quantity of vegetable matter, and pass it through the stomachs of animals, where it is acted upon and the refuse passed out, or you put vegetable matter—as straw, or litter—in the yards, and allow the excrements of animals to be mingled with it, and a slow decomposition to take place. The whole being commingled and mixed together is known by the name of farm-yard dung. Now, a very little consideration will show that the whole of the material which is found by you, gentlemen, to be practically so useful on the farm is merely derived from vegetables; so that you are, in fact, applying the remains and refuse of vegetables to renovate the land. This is the whole secret of farm-yard dung: it is vegetable-matter, which, when partially decomposed, is re-applied to the land, where it forms vegetables over again; so that you are continually working as it were in a circle. Thus the same particles of matter imported on the farm perhaps in the shape of oil-cake, first re-appear in the shape of a turnip, again as barley, now as beet-root, now as wheat—the cycle of changes continues until the identical particles are exported from the land as beef or mutton, or as grain. Now I hope I shall be able to offer one or two ideas with respect to the origin and nature of this farm-yard dung; and let me say we can never have our ideas too near the truth respecting the origin and nature of that which is so constantly under our notice. Some gentlemen have got an idea that animals have a mysterious power—of what nature it is impossible to say, but they imagine that it really exists—a mysterious power, by means of which they can change a turnip, or a quantity of oats or greens, into

a superior manure for land; and that food must have passed through the animal before it can be really useful on the land. That is the idea entertained on this subject by ninety-nine farmers out of a hundred. I must proceed this evening to disabuse your minds of that erroneous notion; I must inform you that the manure obtained from animals is always dependant, as regards its value, on the food which the animal eats; and that the excrements of animals are always less valuable, and less powerful in manuring principles, than is the food consumed by those animals whilst producing the manure; that green food, ploughed into the land, will give more manure to the land than the same food eaten by animals. Not that I would recommend you, as a rule, to plough in your vegetables; but I wish you to remember that your sheep can deposit nothing on the land but what they have first received from the food; and that, under all circumstances, the amount deposited will be less than that received. Now let us look a little at this point. You know that in one of our ordinary fire-places, when coals are put in the grate and a light is applied to them, an action takes place which makes the air above differ from that below the fire: without any mention of the name of a single chemical element, you have only to apply your plain common-sense in order to be aware that an action takes place between the air and the coals, producing heat, and that the air above the coals (in the chimney) is very different from the air below the coals, which enters at the grate. Now you give an animal a certain amount of food; that food is taken into the system: the constant action of the lungs, which inspire and expire the air, has the effect of bringing into the system a large amount of air. This air acts upon the food which is taken into the system. By the combustion or burning of a certain amount of that food animal heat is produced, which keeps up the temperature of the animals, so that they get a higher temperature than the surrounding atmosphere. The expired air contains the result of that combustion, and resembles in composition the air of the chimney: another portion of food not used for producing animal heat is laid upon the bones, forming muscle, or fat; and what the bullock itself has no use for, is cast out of the system. Now, you observe at once that the animal, by acting in this way on the food, actually deprives it of certain constituents, and at the same time makes it less in amount; so that, in fact, the only real action is one which takes away certain portions of the food and renders the others more quickly soluble. All the soluble parts of the food are passed out in the urine, and all the insoluble parts in the excrements. There is a regular process performed in the laboratory of the stomach, the effect of which is what I have thus described. Now, the same thing takes place in the decomposition of vegetable matter. You lay down a large quantity of straw, and you let the water fall upon it, as well as the excrements of animals. You all know what takes place. The heap gradually heats, and this gradual heating is nothing more than the effect of the gradual action of the air upon it. Certain portions of the vegetable matter thus acted upon by the air are con-

sumed and taken away, and the bulk becomes less; so that, even in the process of acting on vegetable matter, you lose a portion, and it goes off into the air, just in the same way as the solid parts of coals pass into the air by means of the chimney. You all know that the solid parts of coal disappear and leave nothing but ash behind. The two cases are, in fact, identical. I may refer you to the case of a hay rick put up in too damp a state. In that instance, an immediate action takes place from the contact of the air with the moist hay, and that action continues increasing, until, at last, the whole bursts into a flame. Now, gentlemen, in either case, in the making of manure there is a diminution and a loss. You must have seen the reek going off from the dung-heap, and there are other substances which also disappear in the air which you cannot see. If what I have stated be true, you will draw the conclusion for yourselves, that vegetables ploughed at once into the land, furnish a greater amount of the substances adapted for the vegetation of plants than they would supply if passed through the stomachs of animals—that is to say, to give a plain, practical illustration of my meaning, if you chop up an acre of turnips, and plough that acre of turnips into the land, you will have more manure in the soil than if you fed a flock of sheep upon it, without the addition of oilcake or any other extraneous manure. Again, take other green crops, such as rape, and plough them in, and you will have a larger amount of substances calculated to bring forth the next crop than if you passed that acre of rape through the bodies of animals. You may call this theory, gentlemen; but it is absolute fact: there is no theory about it. It has been tested by practical men, and I will give you one or two instances. A gentleman heard me make this statement when I was lecturing at Maidenhead—and let me remark that the gentlemen who composed my audience on that occasion were not quite so decorous as you gentlemen have shown yourselves this evening; for I heard some of them call what I said “gammon” (laughter). Now, notwithstanding its being “gammon,” a certain gentleman determined to try whether or not the case was as I had represented. A gentleman named Mr. W. Trumper, of Dorney, near Windsor, having 20 acres of rape, ploughed in one or two acres in different parts of the field. The rest was fed off by sheep. These sheep were luxuriating every day on a beautiful meadow adjoining, and were folded at night on the rape. I was invited last Midsummer but one to see the effect of this experiment; and about a dozen practical men were invited to meet me upon the occasion. The land was gone over, and I could point out every place where the rape had been ploughed in. The wheat stood eight or ten inches higher than the rest; and in the judgment of these practical men there was more than a quarter of an acre difference between the places where the vegetables had been ploughed in and the places where the sheep had been fed off. More than that, I happened to meet Mr. Trumper at the annual dinner of the Reading Farmers' Club, when he told me the turnip crop succeeding was much better, and he fully expected to see it in the bar-

ley. Now, there can be no doubt that the ploughing in of turnips will have a similar good effect, and perhaps many of you gentlemen have in your recollection certain instances in which, owing to the severe frost rotting the turnips, it was necessary to plough them into the land; and when, contrary perhaps to the expectation of the farmers a capital crop of barley was the result. I would not recommend you to forsake the feeding of sheep: I am now merely dealing with the facts of this case. It is a question of pounds, shillings, and pence whether it is best to feed the turnips off or to plough them in, and therefore a case for the exercise of your individual judgments. In the instance of which I was speaking at Maidenhead it was found more favourable to plough in than to feed off, as that year the crops were excessive and the sheep high in price. A gentleman there was actually offering to give £2 an acre to any person who would send a flock of sheep on the farm to feed off the turnips. I at once said it would be better to spend 15s. per acre for ploughing in and 25s. in guano, as the crop of barley would assuredly be better. Now, gentlemen, at the end of the lecture I shall be happy to hear any observations which may occur to practical men on this point, and to answer any objections which may be urged; and it must be particularly noticed that I leave out of the question for the present the mechanical action of sheep in treading the land, so necessary on some soils, and speak merely of the absolute amount of manure. To pursue the subject of this manure a little further, you see at once that the manure will vary as the food varies. If you use straw, or oilcake, or turnips, the quality of the manure will vary accordingly, as the composition of these substances varies; and it will vary because the animal takes away only a certain proportion from each of these, and casts out the remainder as excrements. But the manure will vary, not only as the food varies, but according to the age of the stock. It is plain and palpable that the beasts which are already pretty nearly fattened will take far less out of the food eaten than lean, young, and growing stock; because the young stock, having to form their bones and flesh every day, rob the food which they feed upon of a much larger quantity of valuable and nutritious matter than such as have nearly attained the fatted state. Not only does the quality of manure vary according to the food and the age, but the dung of milch cows is inferior to the dung of bullocks fed on the same amount of food. It is plain that if a cow is giving milk to young animals, the manure is robbed of some of its most valuable properties. If a chemist analyzes milk, he finds it to contain some of the most important ingredients of manure; and of course, therefore, these ingredients are lost to the excrements. It is very clear that the value of manure will vary according to the kind of food, age of the stock, the nature of the stock, whether the stock gives milk or not, and whether it consists of sheep or of oxen. The seeds of plants contain the largest amount of nutritive matter; for as the purpose of the life of a plant is to reproduce its kind, we find that every other part of a plant is exhausted to produce the seed which shall give birth to another generation. When,

therefore, seeds—as barley, oats, or oilcake—are given to cattle, the animals will not only find more nutriment than in hay or straw, but the manure will likewise be much better. Now, having thus spoken of the origin of manure, and having, I think, clearly proved to you that it is all produced from vegetables, and that animals have no power whatever to add one single atom to the vegetable matter received into their system, and that they deposit less in the land than they receive in the shape of food, let me next proceed to speak of the methods of manufacturing manure. And, gentlemen, you often mix your dung in a manner which I must say shows a great want of *practical knowledge*. I have seen manure placed in a position where all the waters from the outbuildings poured down upon it, and washed the soluble matter away into a neighbouring pond, there to poison the horses. I have gone amongst heaps of dung which were steaming away at a fearful rate, and my nostrils have instantly informed me of the escape of a substance which has a very high price in the market, yet the practical man appeared to be quite unaware that he was losing one of the most valuable ingredients of manure, namely, ammonia; he did not appear to imagine that he had any means whatever of helping himself. Now I wish to point out how pleasant it would be to the pocket to have a little more knowledge on this subject: it is the pocket after all which suffers most. You may term me theoretical, if you please; but I must say that I think there are as many crude theories among the so-called practical men as ever emanated from the brains of all the scientific men of the world combined. Now let us look at this manure. When the chemist comes to examine it, he finds that there are certain ingredients in manure, which are naturally volatile, or which become volatile in the process of fermentation, and go off into thin air, if not prevented; that there are other substances which are soluble in water, or become soluble in the process of fermentation, and which, if acted upon by water, are carried away; and that there are other ingredients which are neither very volatile nor very soluble. Now, to bring chemistry to bear no further than this, the question really is, how to stop the volatile substances from going into the air, and how to prevent the soluble from being washed away. It so happens that these very substances—the volatile and the soluble—are those which it costs most money in the market to import upon the farm, whether the farmer obtains them in the form of guano or in any other form. Now it is certainly very easy to arrest one of these wasting processes, that is to say the washing of the manure; there is no difficulty in preventing the liquid manure from being washed away; and whatever the farmer may say as to the loss being trifling, I am prepared to prove that on some farms which I have seen, of five or six hundred acres in extent, the loss was at least £200 a year. Now this, I say, can in a great degree be prevented. If the farmer, or his landlord, will not go to the expense of having the farm-yard completely covered over like a *railway station*, they might at least, by shoots or gutters, prevent the rain from the buildings falling on the dung: the redundant liquid and urine from the

dung-heap and cattle should be conveyed into a reservoir, and in dry weather pumped back again over the straw, which will thus more quickly suffer decomposition. You are all aware that vegetable matter decomposes most readily in contact with animal matter. In illustration and in proof of this, I need only refer to the thatched buildings where pigeons are kept. You always find that that portion of the thatch where the pigeons deposit their excrements gives way first. While, therefore, you are to pump the urine back again, so as to allow decomposition to take place more quickly than it otherwise would do, the next question is how to prevent the escape of the volatile materials. Of these volatile matters one is called ammonia; and is easily arrested by means of gypsum, or, what is better still, sulphuric acid. The water in the tank ought to be kept slightly acid, by means of sulphuric acid, which will totally prevent the escape of ammonia. If no tank is kept; over all the straw, every day and every night, should be thrown a quantity of gypsum, and the same substance should be applied night and morning to the cow-houses and stables. I come now to the difference between long dung and short dung. This is a long-disputed question, and the practical men have almost got to cudgel blows about it. Now it is quite clear that in bringing down long dung to the state of what is called spit-dung, you lose to a great extent; a certain number of substances are carried into the air, and at the same time the manure becomes to a certain extent decomposed, so that the fibres of the straw, and other vegetable substances, are deprived of their power of cohesion. Now, gentlemen, I am a great enemy to the excessive fermentation of manure. I believe that it ought not to be fermented to anything like the extent that it is done in some places. It is often fermented till one-half is lost; and then we are told that a load of that will do better than a load of long dung. I grant that in some cases; but if 100 loads of long dung be put direct upon the land, and another 100 loads of the same dung be allowed first to decompose and rot until only 50 tons be left, I ask, will the 50 tons equal the 100 tons? Will one load of the latter beat two loads of the former (Hear, hear)? I contend it will not do so well. If you take 50 pounds in one case, and 10 pounds in another, you will find in nine cases out of ten that the long dung has the advantage; because in making the spit-dung you have a large amount of volatile matter sent off to benefit not your land in particular, but the whole neighbourhood, which men are not now philanthropic enough to do on a large scale knowingly (Hear, hear). Well then, gentlemen, we have seen that you may arrest the volatile matters, as the ammonia, by applying gypsum or sulphuric acid. I hardly like to name these things among *practical* men, lest I should be censured. I know that some persons have such an antipathy to chemical names as to consider them as anything else rather than terms applied to designate certain substances in nature. But I will venture to speak of one or two other things by name. There is the charcoal or vegetable matter of this manure, which goes off into the atmosphere by the action of the air, in the same way as

the coals disappear from a fire place, where nothing is left but the ashes; the charcoal having assumed the form of gas and gone into the air. Now, a similar action takes place in the case of manure; and if it be allowed to proceed, almost every particle of the charcoal will pass into the air. Then there is hydrogen, another long name for one of the constituents of water. Another substance is nitrogen. These are also found in farm-yard dung, and they are apt to hop away into the air if decomposition be allowed to proceed too far. Therefore I recommend you not to allow decomposition to go beyond a certain extent, but to let the manure rot and decompose in the land. I will now take another point, namely, the forming of manure heaps when the dung accumulates faster than it can be put upon the land. The best plan in such a case is to lay a bottom of mould a foot in thickness. Upon this the manure ought to be carted, each cart passing over the manure previously laid down. The manure ought to be watered copiously with dilute oil of vitriol (one part to twenty of water) or sprinkled with gypsum, if those substances have not been previously used. Upon every two feet in depth of the dung six or eight inches of mould should be placed, and when built to the required height a covering of earth eight to ten inches in thickness should be placed over all. In a compost heap thus made, the escape of most of the valuable ingredients is almost entirely prevented. If any of the ammonia should escape the action of the sulphuric acid, it would be retained by the mould; and by the slow action of the air upon it, nitrates of either potash, soda, or lime would be produced. Whether you are aware of it or not, it is the fact that the saltpetre used by the French, in their battles subsequently to the first revolution, was made from the floors of cow-houses, from old walls, and actually from the urine and dung of animals—the ammonia of these things being converted into saltpetre. Now that which produced such an immense amount of saltpetre sufficient for all the wars of Napoleon, when the French were cut off from the East Indies; instead of being allowed to escape, might surely be converted by you, gentlemen, to the purposes of agriculture, which I need not say are very much better than those of war. I now come to another point—that of box-feeding, or the feeding of animals under cover. The best way of making your manure is, I think, either to make it under a large open shed, covered over, or to put your animals upon the box-feeding system followed by Mr. Warnes. I have seen the box-feeding, not only at Mr. Warnes' and Lord Torrington's, but in other parts of the country, and I must give it my unqualified approbation, as one of the simplest means—I do not say the best that could be devised—of carrying out the practical ends of the farmer. Mr. Warnes does not tie up his bullocks, but he has litter under them, and he strews gypsum over this litter. The urine of the animals and the solid excrements are arrested; fresh litter is added when the first gets too wet; and this manure is continually trodden down by the feet of the animal, and this treading so solidifies it, that just that necessary amount of fermentation takes place which produces a good solid black dung. I am not now going

into the question of cooking food for animals: I shall leave that part of the subject for a future time. I must, however, now proceed one step further, which practical men will, I dare say, consider an absurdity. Gentlemen, my opinion is that the time will come when you will have your bullock-houses warmed by as genial fires as those in this room. I will tell you my reasons for thinking so. The food, or at least a portion of the food, which you give to animals goes, as I before told you, to keep up their temperature. Now the more cold to which an animal is exposed the more food is required to keep up the temperature, which must be kept up or the animal will die. We all know that in cold weather an animal parts with more heat than in warm; consequently he must consume a much larger amount of food to furnish this heat, and this is the reason, and there is no other reason, why you cannot fatten animals in winter. In the winter the animal merely consumes to keep itself comfortable. The animal only produces fat when he has got more food than is required to keep up the proper temperature of the body. If you were to keep a fat and lean animal without food, you would find that the fat animal would outlive the other for many days, in consequence of having been able, by excess of food at other times, to lay up a store for other days. You must not suppose that the animal lays up fat merely for your use; it lays up fat for the purpose which I have stated, and it is only when it is able to satisfy itself as regards warmth that it lays up a particle of fat. This, I repeat, is the reason why you cannot fatten animals so well in the winter as in the summer. Now, mark what is the idea of the practical man on this subject. The practical man never thinks of buying a pound of coals to warm the animal, and thus, at the same time, to save the consumption of food. Now I do not call that very practical; and I venture to assert that the more practical idea of the chemist will eventually be carried into effect. Instead of valuable food being consumed for the mere purpose of keeping up the animal's warmth, there will be a consumption of coals, which are much cheaper, for that purpose, and then you will be able to fatten quite as well in the winter as in the summer.

Having thus mentioned the chief points relating to manure—and I do not recollect, at this moment, any other point of special importance, except with reference to artificial manures, to which I will refer at the close—I will proceed to speak of the rotation of crops, and of the means by which vegetables live.

I will now, gentlemen, draw your attention to the system of the rotation of crops. I have here something to state for which many a practical man will, I doubt not, find fault with me; but I must proceed to the fact. I am afraid that I am not in a position to alter that which has been found to be true, and will remain so, notwithstanding the prejudices of any party whatever. You have the plants growing in the soil, and they seem to obtain their nutriment therefrom. You find that one farmer produces more crops than another, because he manures more highly. But, for all this, the plants do not obtain the greatest amount of their livelihood out of the soil; they derive most of their nutriment from the air. The soil answers two or three purposes. First, it answers the purpose of a

solid substance, by means of which plants by their roots are supported, so as to resist the tempest, and by which, also, they have a local habitation and a name. The roots also have for their object the obtaining nutriment from the soluble matters of the soil. If I were to refer you to the vegetation of the sea, which, perhaps, you practical gentlemen are not much in the habit of dwelling upon, I might show you that there are vegetables there which have no roots, and do not want any. They are fixed by a certain process to the rock, and they have no need of the roots which land plants require; because the stems and leaves of sea plants spread through the water, and absorb from the water itself all they require. The roots of land plants, besides acting as points of support, act as absorbents, in the same manner as the leaves of sea plants. These roots take a portion of the water from the soil, holding in solution a quantity of the soluble matters of the soil: the water makes its way into the leaves; and under the influence of the light of the sun, these plants, through their leaves, have the power of acting on the air, and of absorbing therefrom substances which unite with those already in the water to form the various products and tissues of plants. For, gentlemen, I venture to tell you, though it may appear rather extraordinary, that there is a vast deal more charcoal and other constituents of vegetables in the air than in all the plants which live upon the earth. It is not necessary for me to state how many hundreds of millions of pounds the air contains. There is, however, a large amount of charcoal in the air, existing in a form in which it is called by chemists carbonic acid gas, and by miners choke-damp—a gas which, when collected at the bottom of wells, or brewers' vats, kills persons who unadvisedly descend without having first tried whether this gas be present. If a lighted candle is extinguished by the atmosphere of a well, a human being cannot live therein. Now, this same gas, which is also given out by all burning fuel, and decaying vegetable and animal matters, finds its way into the air; and it is chiefly from the air, not from the soil, that plants again derive their charcoal. If you plant an acorn, it will, after a few hundred years, become a stately tree, and contain many tons of charcoal; and yet the soil around it shall be richer in vegetable matter, owing to the fall of the leaves, than it was when the acorn was planted in the ground. You must infer, from this simple fact, that plants do derive a great part of their charcoal from the air, probably as much as nine-tenths of it. In allusion to this peculiarity, a comical letter appeared in *Punch* a few days since, purporting to be written by a countryman in London to his father in Hampshire, in which this person said, in allusion to a lecture by Dr. Ryan which he had been attending, "Why, he says, the vegetables actually breathes in their victuals" (laughter); and, of course, as among animals, so among plants, some are possessed of far greater powers of absorption and digestion than others—narrow-leaved plants not being able to contend with those having more foliage. I shall now take a general view of what is done by you, gentlemen, as regards the rotation of crops; I shall show you that in this respect you are really "scientific" men, and that you have devised a most scientific arrangement in your rotation of crops. Let us look at the Norfolk four-course. You select a plant with excessively large leaves, and which can produce a large bulb. The turnip, for example, when the sun shines upon its broad and large leaves, has the power of absorbing from the air a large amount of valuable nutriment. The turnip has an idea of its own, if I may so say—the idea of producing its own kind, and of laying up in its bulb for the next year a large quantity of vegetable materials, and it goes on accumulating until it has produced those enormous vegetable masses which we sometimes see. Now, when this is done, the farmer, to put

an end to all the hopes of the poor turnip; instead of allowing the matter accumulated by the turnip to proceed to the formation of turnip seed for the next year, he comes in and says—"No! I find that a crop of barley will pay me better, and I will therefore convert this turnip into barley!" Now, how is this to be done? One gentleman will plough the turnips into the land. Another gentleman says—"I want to produce a little mutton." So he brings his sheep upon the land, and what is not absorbed by them is deposited on the soil, together with other substances derived perhaps from oil-cake or hay. The barley which generally comes next, being a narrow-leaved plant, does not possess the power of absorbing from the air so much as the turnip, though it possesses the power of re-producing its kind. But here comes the question of pounds, shillings, and pence, which, after all, is the principal question in the estimation of the practical man. He wants to produce a very large crop of barley, and he makes use of turnips to accomplish his object. The barley finds a large amount of vegetable matter already accumulated in the soil in such a state that it can be absorbed by its roots. The roots absorb this, while the leaves act with double vigour upon the air; and the consequence is a much larger crop than could be obtained by the action of the leaves of the barley alone. Now let us take the next step. You select, in this Norfolk four-course, the red clover or the trefoil, or some mixture of seeds, which by presenting a large foliage will be capable of absorbing a great amount of carbon from the air; or you select beans or peas. Now take the case of red clover. You all know that a good crop of clover presents a large quantity of leafy surface to the air, though each leaf be not so large as the turnip leaf. Every little leaf sends down a certain radicle into the soil; so that in proportion as the leaves grow above the ground, in the same proportion do roots grow below. The consequence is, that you get accumulated in the land a very large amount of vegetable matter in the shape of roots; and though you take off such an amount from the surface, yet all your roots are so much valuable matter added to the soil. Now, gentlemen, I will give you an evidence of this fact, which I will treat as a general one. I know that many of you have found that the wheat crop is better when you have cut the clover twice and removed all the hay, than where you have fed off, perhaps with addition of oil-cake, or where you have taken one cut and then fed off. Now what is the reason of this? It is that in feeding off you prevent the growth of the roots. Every little leaf which was sending its little root downwards ceases to do this when it has been mutilated or eaten by sheep. A much less amount of vegetable matter therefore accumulates in the soil when the clover is eaten off than when it is merely cut and the hay removed. The succeeding wheat crop, therefore, cannot be so luxuriant; for the roots of the clover supply the material for increasing the crop of the wheat. This was proved by the experiment of a friend of mine, Mr. Peter Love, who took two pieces of clover—cut one twice and the other once, and then fed it off with sheep. He afterwards dug up the roots from each portion, and found 75 cwt. per acre where he had taken two cuts; and only, I think, 25 cwt. where he cut once and fed off. This is a very large difference, and sufficient to account for the superiority of the wheat when the clover is twice cut. Now, gentlemen, look at the preparation which you scientific men have made for the wheat-crop. You have got a large amount of clover roots in the soil. You plough these up; the roots decompose, and furnish to the narrow-leaved wheat the means of producing a much larger crop than of itself it could obtain from the air. You thus often obtain from five to seven quarters from a plant which naturally would perhaps produce only two. Now this is an illustration of the Norfolk four-course.

The red clover, for reasons which are not yet satisfactorily known, refuses to grow in many places oftener than once in eight years; in others, once in twelve years. In order to replace it in the rotation, seeds, and beans or peas are made use of. The seeds act like the clover, and accumulate a quantity of vegetable matter in the soil; but the beans and peas appear to have little effect in that way. They seem to be able to get what they want from the air; so that, though they do not much enrich the soil, they do not impoverish it, and a crop is obtained, and no harm done to the land. Well now, gentlemen, if you refer to a more extended series of rotations—to an eight or nine, or ten or twelve years' system of rotations—you will find that the very same principle which you have so scientifically laid down is carried out, and that you merely make use of plants possessed of different properties, to bring down into the soil substances which are valuable in the market; and which other plants you wish to grow do not possess the means of otherwise obtaining, in quantity sufficient to produce the crops you require. It is the object of the farmer to produce all these plants in the greatest quantity—he wants an abnormal growth of plants, an unnatural growth—and therefore he endeavours to give to the ground such an amount of every substance required by the different plants, that, as far as he is concerned, nothing shall occur to check their proper growth. Now, here a few practical considerations arise, which the chemist may present to the farmer. It so happens that we are not in a position, generally speaking, to carry on farms without importations from abroad; that is, we must look beyond our farms to supply losses sustained by the exportation of beef, mutton, and grain from the farm. There are, however, certain farms so situated by nature as to be independent of all such aid. For instance, if you have a large quantity of irrigated meadow land, you may be able to obtain from it all that you want for your arable land. You may have beautiful marsh land, where the application of manure would not merely be useless, but would, in fact, throw down your crops. In that case you clearly do not want extraneous manure. Some parties have even thought that if they had a larger amount of pasture land, they might do without importing manure. My belief is, that you would injure pasture land by continually removing substances from it, to manure arable; and, therefore, in that case, I cannot admit that there is no necessity for importing manure, though less may be required than in other cases. Arable farms, generally must undoubtedly require importations from abroad. Now, the question is, how are you to proceed in order to obtain the most serviceable substances, and at the cheapest rate? I defy any merely practical farmer to tell me how this is to be done. He must spend a vast deal of money, and a great portion of his life, in making the discovery. But look at the practical chemist, whose opinions have been trodden under foot. Why, he goes into his laboratory, and in the course of a week half a dozen questions are solved. He analyzes your crops, and finds what ingredients are contained in them. He analyzes your soils and farm-yard manures, with the same result. He takes a rich soil and a poor one, and he finds certain ingredients in the one which are not in the other. Thus the chemist is able to give the farmer practical information which cannot fail to render to him the greatest assistance. But the question is, I repeat, how to import the best manures? In the first place, there are the excrements of man. Man feeds upon the best of all; he takes the best of the beeves and of the sheep, and the best of the grain, and his excrements are richer than those of any other creature. A full-grown man eats so much every year, and yet remains of the same weight; and his excrements, except what goes off in perspiration and expiration, must contain the whole mass of his food. There is

a gradual change taking place in the atoms of his body, some being given off and cast out, and others continually replacing them from the food; and it is an undoubted fact, that if you could retain and apply all the excrements of man, they would reproduce very nearly the whole of the food which he had eaten in the previous year. Now, gentlemen, do you take advantage of all this? There are very few towns where some of this manure may not easily be obtained, and the question is, whether you, in your respective positions, ever think of its value? It is, in fact, one of the most valuable manures that can be used; and when I look abroad, I cannot but wonder that so little care is taken of it. Why, gentlemen, look at London, teeming with the excrements of two millions of inhabitants, which there is very little thought of saving. How do we know but that at this very time the guano brought from South America contains particles of matter which were thrown into the Thames 500 or 1,000 years since? the sea-plants having made use of them in the process of vegetation, the fish having received the matter from the plants, the birds having caught the fish and deposited their excrements on the islands; so that possibly some of the very same particles of matter now find their way back to this country (laughter). Gentlemen, I really think this is very probable. I contend, then, that a saving ought to be made there; and I hope that all of you who reside in the neighbourhood of towns, and are in a position to interfere, will not allow such valuable matters to be lost. I hope to see this matter eventually taken up in a public point of view. Let us take, again, the produce of gas-works—one of the most valuable of manures—containing that very ammonia which is so apt to escape from your dung-heaps. I do not know whether or not you are aware that coal is merely an accumulation of the vegetation of a former period; and when this coal is subjected to a certain heat ammonia is given off, together with gas, which is used, I am glad to observe, for the purpose of lighting rooms in this part of Suffolk. Now, although this ammonia, or ammoniacal liquid, would be of great use in agriculture, the demand for it is so little, that it is allowed in many places to go down the rivers, where it kills the fishes. Nearly all the ammonia used at present in the various manufacturing processes is derived from this source; which offers such an abundant supply that the gas companies do not know what to do with it. Now, I recommend gentlemen to procure some of this ammoniacal gas liquor, and to put it on the land; they will very soon observe the effect of putting it on pasture land: only they must take care not to put too much; for it is so strong, that if they did it would kill the vegetation. Now what use, gentlemen, should you make of the discoveries which have been made in this county and in other counties? Without going deep into geology, it may be stated that the land upon which we stand was once under the sea, and that there lived in that sea great numbers of animals, as whales and fishes. Their bones and excrements accumulated for a long period at the bottom of the sea; and after a long lapse of time these became covered with sand, or silt, or mud. These deposits have since been raised to the surface of the earth by volcanic agency; and thus, in your own county, there are annual remains of a former world, which, if dug out of the earth, are capable of being made almost as useful for manure as they would have been at the time when they were deposited. [The lecturer here exhibited to the audience some interesting geological specimens.] These remains contain, in many cases, a greater amount of phosphate of lime than the bones which are ordinarily sold in commerce; because these latter are so much adulterated. Experience has proved that it is the mineral portion of bones, and not the animal, which produces the greatest effect on the turnip crop;

and it must be interesting, as a matter of pounds, shillings, and pence, to know that the mineral part of bones, as burnt bones, produce a greater effect than unburnt. I refer to Mr. Pusey's experiments in corroboration of this latter statement. Now, you can get these phosphates of lime (commonly called coprolites) at about 35s. per ton; while the bones of animals cost from £5 to £6 per ton. You have here, then, a means of making good manure for your turnip crops. I have analyzed the constituents of similar specimens scores of times; and if one ton of these coprolites be mixed with one ton of acid, supposing it costs 50s. a ton, ground, that will be £7 10s. for three tons, and with £7 for a ton of acid, £14 for four tons of the mixture; four cwt. is the largest amount which it is necessary to use to grow 20 or 25 tons of turnips per acre, without any other manure. I would recommend you, however, to use a half dressing of dung and from two to three cwt. of this mixture in addition, as the best dressing. The best way is to use the half dressing of dung, if you have it; and if you have not you can make it up by a larger addition of the coprolite mixture (pointing to the specimens). I see that in this neighbourhood guano is sold at something like the fair value; but I have known places in which £6 10s. per ton has been demanded for an article not worth 30s. There is such a liability to be cheated in these things that I recommend no man to buy without seeking the aid of a chemist, in order that he may know that he is purchasing the right thing. I also recommend you to deal with none but respectable dealers—men whose character or knowledge, or both, testify to the quality of the articles they sell, and who make use of the best scientific information to confirm their opinion on the manures which they sell. It is not necessary for me to dwell very much on the use of guano. Gentlemen, guano is chiefly valuable—the best Peruvian guano—for the ammonia, and the bone-dust, or phosphate of lime, which it contains. The best guano is useful for dressing grass lands and corn crops; but under ordinary circumstances, I would not so much recommend it for the turnip. It is apt to throw the turnip into leaf, to the detriment of the bulb; and I object to such an unnatural development of the leaf to the injury of the more useful portion. A mixture, however, of one cwt. of Peruvian guano, with two or three of the coprolite mixture, would be very good, and would probably send the turnip quickly past the fly, which is one of the most important points with reference to the turnip culture. I hardly know whether I should trespass any longer upon your time (cheers); but there are one or two other points which I am desirous to mention. Now these other points have reference to other manures, some of which are on your own coasts; for example, there are sprats. I took the trouble of drying some sprats and analyzing them, and I found them, when dry, equal in value, or nearly equal, to the best Peruvian guano. Now, gentlemen, when you have such substances as these within your reach, and know their value, dry sprats containing ten per cent. of ammonia, and twenty per cent. of phosphate of lime, I must say that I cannot help conceiving that you are very wrong in not using them. Now sprats may either be put on the land and ploughed in at once, which is perhaps the best way, or you may make them into compost. You had better do the last in this way. Supposing that the soil does not contain too much chalk—that it is loamy—spread a layer of soil, and then a layer of sprats, and so on, as mentioned before for dung. Let the sprats be well watered with dilute sulphuric acid. You will then have a gradual decomposition taking place: the ammonia will be arrested completely by means of the acid, and the other gases will be arrested by the soil. I do not know a cheaper method of supplying manure for the crops. It has

been proved by many experiments that, generally speaking, if the mineral ingredients be found in their proper quantities in the land, the produce of grass will generally be found in proportion to the amount of ammonia. While, therefore, gentlemen, you may use strong manure, as sprats or Peruvian guano, for grass, you must beware of using too great an amount for wheat, or other grain crops; for the ammonia has the power of stimulating, to a vast extent, the growth of the straw of the crop, and diminishing the strength of it. There is often a liability of its being thrown down; and nothing, I believe, strengthens the straw so much as the use of salt (four cwt. per acre, in spring,) or superphosphate of lime, made from the coprolites; the latter would perhaps do best in this part of the country, as it is not distant from the sea. Salt strengthens the straw, and generally increases the weight of the bushel. You see, then, gentlemen, that chemistry is really a practical science. It does not deal merely with theories, as many of you have perhaps supposed. Chemistry is not a theoretical science; it is one which has a practical daily bearing on the affairs of agricultural life; and, gentlemen, you would be much more able to carry out your ideas, if you had some knowledge of potash, soda, silica, and ammonia, and could give some explanation of their properties as well as of the properties of other elements of your soils. You would then be much more practical men than you are at present. And, as many of you have reached a period of life when it is not to be expected that you can acquire much chemical information, I think it is a duty incumbent upon you, if you have sons who will succeed you on your farms, to see that they, at least, are properly instructed in such things. Most of the schools at present in operation are incompetent to educate on these subjects. Schoolmasters, as a class, do not move in the matter; and as long as you gentlemen are contented with the education which your sons receive, the schoolmaster will not desire to make any alteration. His goods sell in the market, and that is all he wants. I maintain that in order that education may be what it should be, you, gentlemen, must appreciate, as I do, the necessity for scientific education. Though you do not remove your children from the schools in which they are at present placed, you may immediately impress on the teachers the necessity of giving to Thomas, or John, or Henry a little knowledge of botany and chemistry and geology; by demanding that the elements of these sciences be taught your boys; and you may depend, if the demand were made by a number of parents having children at the same school, that the schoolmaster would alter his system; and thus you would obtain a great deal of good for your own children, and, at the same time, be instrumental in conferring a great benefit on the country at large. Now, gentlemen, there is one other point which I regret the necessity of introducing. I may, after all, be met with some such words as these:—"Why, really, Mr. Nesbit, what you say is very good; but we are placed in such a position, that if we were to expend £1,000 upon our land, we should not know that we should be able to take any of it out; we dare not spend a penny, lest we should be obliged to leave the value in the land." Here, then, I must confess that the want of compensation for unexhausted improvements stands in the way of the tenant farmer (cheers), and therefore is opposed to that very scientific and practical improvement which I have been advocating; and I believe that if landlords and tenant farmers would only look the matter fairly in the face, and if the former would give what is right between man and man, each party would be benefited. Gentlemen, in conclusion, I am extremely obliged to you for the kind manner in which you have listened to my remarks this evening. I have purposely been very general, con-

sidering that scientific terms might sound harshly on many ears. I hope, gentlemen, to meet you, perhaps, twelve months hence, to deliver you another lecture, when I shall be exceedingly happy to find so kind an audience (loud cheers).

The CHAIRMAN having reminded the audience of Mr. Nesbit's offer to answer any questions which might be put to him at the close of the lecture, having reference to the subject of it—

Mr. GARRETT said there was one question which he desired to put to Mr. Nesbit—namely, whether he had paid any attention to the application of liquid manure. He (Mr. Garrett) was in a position which enabled him to collect a rather large quantity of such manure. He had at that time a large quantity on hand, and knowing that Mr. Nesbit was going to visit Saxmundham, he had kept it, in order that he might be able to obtain information as to the proper mode of applying it. What chiefly puzzled him was the question, whether it should be applied as a liquid, or whether it should be mixed with solid matter, decomposed, and then put on the land. He fancied that it was best to mix it with something solid, and not to apply it as a liquid; and he had, with that view, obtained a quantity of malcoombs. Malcoombs would absorb a large quantity of liquid; it was almost like a sponge. He had got a quantity of that ready, and he had also got a quantity of wood ashes.

Mr. NESBIT: With respect to liquid manure, he must observe that urine was one of the most powerful of manures—about 1,000 lbs. of urine containing 15 lbs. of ammonia; while the soluble phosphates of soda and potash were contained in it to a large extent. If this were mixed with malcoombs, an extraordinary decomposition would take place, and consequently a loss; malcoombs being, in fact, a manure of themselves. He imagined that, with a large quantity of soil mixed with them and the urine, the loss would be much less. With respect to the wood ashes, a good deal depended on the freshness. If too fresh, he should be apprehensive of their driving off some of the ammonia. That could easily be ascertained, however, by mixing two or three buckets full of urine with a bushel or two of the ashes. If any ammoniacal smell were given off upon making the mixture, they might be sure that injury would arise. With respect to the application of the manure in the liquid or the solid state, much would depend upon the kind of crops.

Mr. GARRETT wished to know what would be the effect if it were applied to grass.

Mr. NESBIT said, if he wanted to apply it to grass, he should certainly use the manure liquid as soon as ever the spring began to turn, and afterwards as the grass was cut. It must be weakened with water to a certain extent, otherwise it would be too strong for the land.

Mr. HOWARD wished to know whether, if manure heaps were covered with mould to the depth of ten or twelve inches, so as to be made air-tight, that would prevent the loss of ammonia.

Mr. NESBIT thought that such a covering on the top of a manure heap answered very well, but that when it was required to keep manure for some time, he preferred putting five or six inches of mould on every two feet depth of dung, as before described, and covering the whole over with a thicker layer. The addition of gypsum or sulphuric acid should not be forgotten.

Mr. HOWARD wished to ask one more question. They found that in wet seasons their meadow lands produced a much larger quantity of grass than in dry. Was that increased production to be attributed to the ammonia contained in the rain water?

Mr. NESBIT: It was not only to be attributed to the am-

monia, but to the water. In dry seasons the plants were in the position most men were sometimes in—they could not get circulating medium enough, and therefore sometimes found themselves in an awkward position.

Mr. HOWARD said he apprehended, then, that in selecting a manure for grass lands, they should choose one containing as large an amount of ammonia or nitrogen as they could find?

Mr. NESBIT: Most certainly; not omitting the other constituents which the grass has taken away.

Mr. HOWARD wished to be informed in what form ammonia or nitrogen had best be supplied.

Mr. NESBIT replied, either gas liquor, sulphate of ammonia, nitrate of soda, or Peruvian guano, according to their market value at the time.

Mr. COOK said, Mr. Nesbit had taken up a novel position with regard to the turnip crop. Farmers generally had been of opinion that turnips were only useful to the land when eaten off by sheep. Mr. Nesbit said chemistry pointed out a more beneficial course, viz., that of having them ploughed in. He did not doubt the correctness of Mr. Nesbit's position, presuming that he had better data to go upon than he (Mr. Cook) possessed. But, assuming that to be the fact, they were all aware that the grazing of bullocks had been for several years past over the left as regarded profit; and he would ask Mr. Nesbit whether, under such circumstances, it would not be better for him to bury the green food as manure? He merely put forward this point with a view of eliciting Mr. Nesbit's opinion. That gentleman had given it as his opinion that sheep deposited less manure in the land than the food contained upon which they were fed, and he wished to know if the same applied to the feeding of bullocks.

Mr. NESBIT said he thought the meeting would fully bear him out in the statement that he had not recommended the ploughing in of turnips unless a pound-shilling-and-pence view should lead them to pursue that course (Hear, hear); and he thought he had also mentioned that on many light lands there was a certain beneficial mechanical action produced by the treading of the sheep, which could not be so well produced by any other means. But with respect to bullocks, if Mr. Cook and other gentlemen found that the fattening of them was "all over the left," and that they had not a single sou left at the proper side of the sheet, why, in that case, he would recommend them to leave off (Hear, hear). But he knew many gentlemen who asserted the contrary, who stated that they really did find something in the shape of profit.

Mr. — wished to know whether, if a gentleman had £100 to dispose of, he would employ it best by buying food to increase the manure in the yard, or by the application of artificial manures?

Mr. NESBIT said that in the case mentioned by Mr. Cook, that of bullocks yielding no profit, it was plain that the £100 would be best expended in introducing artificial manures. He had no doubt that in many cases the buying of food to be consumed on the land was not the best method of introducing manure, but he equally believed that in many others it was decidedly the best, because there was a profit derived from the consumption of food by means of the animals. If there was no profit, but a loss, the proper course to be pursued was obvious; but he had no doubt whatever that in many cases £100 might be expended more beneficially in the importation of manure than in the production of food.

The CHAIRMAN said it was now his pleasing duty to propose a vote of thanks to Mr. Nesbit for the able and gratuitous lecture which he had given that evening, and, he must also add, to Mr. Packard for bringing him there (cheers). Even though some of us may not have fully coincided in his views, I

an sure Mr. Nesbit's object will have been fully carried out if the result shall be to promote inquiry on this most important subject (Hear, hear). He had there a section or drawing of the Bawdsey Cliff, whence the fossils exhibited had been obtained. While speaking on that subject, he could not but refer to a report of an examination of Mr. Nesbit's pupils which he held in his hand. There were some persons of great distinction in the scientific world present at the examination; and it appeared from the report of the proceedings that a course of education was carried out in the institution which was highly interesting and improving in relation to the progress of agricultural science. Though such subjects as had been introduced that evening might at first sight appear difficult of comprehension, yet they were all within reach, and in a short period of time a great deal of practical knowledge might be gained. He held in his hand a list of several very cheap and useful elementary books. The first was a work which he had no doubt was regarded as a text-book in most agricultural circles, "Johnson's Elements of Agriculture;" the next was "The Muck Manual;" a third was Liebig's "Chemistry of Agriculture and Physiology;" and, lastly, he would mention some of the proceedings of the Geological Society, including accounts of the strata of most of the wells of Suffolk, and the dips and depths of different soils. He only mentioned these works for the purpose of showing that a certain amount of knowledge was attainable by all who paid any attention to the subject. The little attention which he had given to it himself had convinced him that the whole subject was one which must raise the thoughts to the great Giver of the many blessings which they enjoyed; and in the language of a Suffolk poet they might say:

"Almighty Power! from whom these blessings flow,
Teach us still more to wonder, more to know."

Mr. NESBIT, in returning thanks, said there was one point which he had omitted to mention, and which he thought important that the meeting should know. They must all recollect that Liebig was the chemist who first pointed out to the farmer the necessity of making the phosphates soluble. He recommended the use of sulphuric acid for that purpose. Some years after Liebig had, like a man of science, given this knowledge to the public, a patent was taken out for the very process recommended by Liebig. Since the existence of large quantities of fossil phosphates was pointed out by Professor Henslow, himself (Mr. Nesbit), and others, the party who took out the patent was so sensible of the value of the discoveries, that he was now attempting to get the whole of the phosphates into his own hands, and to prevent any other party using them with acid, without his license. With this view an action had been commenced against a party who used the coprolites last year, which was at present pending. He believed the person seeking to establish this most unheard-of power over the property of others had neither a legal nor a moral right to what he sought to obtain. On a question therefore, not important to this county alone, but to the whole kingdom, he thought the farmers ought to take care that the right involved was not taken out of their hands by any chicanery whatever (Hear, hear). He felt very deeply obliged for the reception which he had met with that evening. It would give him great pleasure to meet the company twelve months hence in order to pursue the inquiry still further (Hear, hear).

A vote of thanks was also given to the Chairman, and briefly acknowledged; after which the audience dispersed, the proceedings having occupied altogether nearly two hours.

T E N A N T - R I G H T .

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS, WITH THE EVIDENCE.

(Continued.)

Evidence of Mr. THOMAS OWEN.

CHAIRMAN.] You are a land agent for some properties in the neighbourhood of Hungerford, in Berkshire?—Yes, I am.

And to some extent you are an occupier of land?—Yes, I am.

What is the custom of the county in that part of Berkshire, as between in-coming and out-going tenants; first, what is the time of entry?—Michaelmas is always the time of entry; there is no other time of quitting.

What does the in-coming tenant pay for?—All acts of husbandry. It is various as to the in-coming tenant; what the in-coming tenants are called upon to pay for, for instance, straw and hay, and all that, is taken to by valuation; many tenants are allowed to sell wheat straw, but the general principle is to take by valuation.

The hay is taken to at a spending price?—Sometimes at a spending price, sometimes at a market price; in fact there is no standing custom at all; it is just a matter of old custom that the farms on the estates have been in the habit of going on upon; it is very various indeed in our county.

To whom does the dung generally belong?—To the in-coming tenant always; I never knew the thing otherwise.

That is, it belongs to the landlord?—The manure of the two last years we consider the in-coming tenant's property, provided the out-going tenant had it when he entered; that is usual generally.

Is there any compensation for the purchase of artificial food or manure?—None whatever.

Nor for any more durable improvements of the land?—None whatever.

Is not there a great deal of land in your neighbourhood, between the river Kennett and the hills that would be the better for draining?—There is, which we call a stout clay, on the hills near the Kennett; there is some very stiff land, the clays; but our principal land is very kind, gravelly, dry soil; still there is a portion of almost every description of land in our county.

You have another mode of improving the land, by chalking it?—Yes, we have; it is done very extensively particularly on new broken ground; there has been a great deal of land grubbed, and it is always advisable, and it is always recommended that that should be

chalked; in fact it is the first step towards the recovering of land.

The chalk has to be hauled from some distance, has not it?—No, it is generally subsoil chalk; I have scarcely a piece of land on my farm, or on the estate I manage, but what I could find chalk under.

You are rather confining your answer to your own immediate neighbourhood?—Yes, to my own immediate neighbourhood; there are many farms, I have no doubt, in Berkshire where you could not find the subsoil chalk without going miles.

Going to Woodhay, for instance, you have to haul the chalk a considerable distance?—Yes, but it is usual to find chalk in many parts of it.

What is the expense of chalking per acre?—From 35s. to 50s., where we can get it subsoil; I never paid for any chalking but what we could come at easily.

That is the expense, where you find it immediately under the land?—Yes.

Does it make a very great improvement in the land?—Yes, it is a great preventive of wire worm, and many other insects; ours are very kind gravels, and on that gravelly land I have found the greatest benefit from it. I have had for years a number of bulb roots.

Sir J. TROLLOPE.] Have you had any turnips?—Yes, and the chalking is a very great security to those crops.

Mr. COLVILLE.] It makes the straw hold up in wheat?—If you get your crop of turnips injured you get the following crop injured.

Does the chalk prevent the straw from falling; that is does it have the effect of making the straw stand, for wheat?—If you overdo it, it perhaps would loosen the soil too much, and the straw might fall, that is in doing it very heavily; our principal object is that of securing the turnip crop more than anything; we consider it a very great boon.

CHAIRMAN.] That same practice of chalking is found beneficial upon the extensive range of hills to the south of Hungerford, going on into Hampshire?—Yes, but I do not think Hampshire is so much adapted to the chalking as many parts of the strong clay land; I think they are rather of the nature of chalky soils in Hampshire themselves.

In your opinion, would it be desirable that the tenant should receive compensation for those various improvements that your attention has been called to?—There is no doubt of it; I think any security you could give the tenant for his outlay must give a stimulus to the improvements; the tenants would do a great deal more if they could be certain as to being repaid; every tenant who has capital I am convinced would outlay it.

Would it be more likely, if the tenants had security for their outlay, that they would be better able, and more disposed, to give employment to the labourers in winter?—No question about it.

The winter is the time when those improvements will be carried out?—Most of them.

And that is a time when it is particularly desirable to find employment for the farm labourers?—Yes, decidedly.

Have you any other suggestion to offer to the Committee?—No, I think not.

Mr. HENLEY.] Your opinion is, that if the tenant had security he would lay out more money?—I am convinced that he would.

Of course, if a landlord has a fee-simple interest in that estate he can give that security if he chooses?—He could; but it is so seldom understood, I think, by many tenants, that the uncertainty of being repaid puts a stop to those improvements; whereas, if there was a law by which the tenant would be sure of being repaid for the outlay, there would be a very great deal

more studied and done, both for the benefit of the landlord and the tenant, because I am convinced you cannot benefit the one party without benefiting the other.

Should any law that should be made over-ride leases, in your opinion?—No, I should say, certainly; I should think it would be dangerous to do so.

In your opinion, if any law be made, should landlords have the power to make agreements with their tenants not to come under it?—Yes, certainly.

Then what would be the use of the law?—There is a difficulty, I can see, and have always seen it.

You have not been able to see your way through that difficulty?—No; but I am convinced of this, that where landlords are not in a situation to make the improvements, there are so many cases where the tenant has the means, in point of capital, for making the improvements, that he could make them very much to his advantage, and very much to the landlord's advantage, because I consider that under the present system in our county of letting farms, they are what we call beggared out; there is not a farm that I have re-let but every tenant who has quitted that farm has taken everything out of it that he possibly could. If a system could be laid down where that never could be allowed to be done, and that any outlay that the tenant had made upon that property, whether they were improvements by building or manure, he should have the certainty of being repaid for them. I think the benefit would be immense, both to the landlord and the tenant, and the public.

This being clearly as you say to the advantage of the landlord and the tenant, why should not they both agree to it?—It is not sufficiently studied; there are many landlords who will not even think of it.

It would be a great step towards it, to enable persons of limited interests to do as much as landlords who have a fee-simple interest do now?—Yes, it would be; I think if the thing were to become a law, it would prevent the action of any such injurious system, and would lead to improvements that would be beneficial to all parties.

You yourself state that you cannot see your way to make a law, so that persons who wish not to come under it could be dealt with?—I do see very great difficulty myself, inasmuch as it would be making a law to interfere with existing agreements and leases; still, if it could be done, it would be one of the most beneficial things that ever the legislature took in hand.

Supposing that not to be able to be done, it would be a great step in the right direction to enable persons having only life interests in land, or limited interests, to do that which persons can do, having a fee-simple interest in land?—Yes, it would, certainly.

It would be a great step in the right direction, to give tenants the privilege of removing any buildings that they might think necessary to put up?—Yes, it would; and I consider there are many properties that are let run to ruin entirely, because the tenant, if he does it, would do it at his own cost, at the risk of never being paid again for it; and, therefore, it goes on from time to time, and it is not done at all till the place tumbles down.

There is a great dislike in most men to have their property interfered with by law?—Of course, there must be that feeling; no doubt there is; but I think they are very frequently in the wrong to allow of it. It would encourage a very great deal of outlay, if you could frame a law to prevent all those immense dilapidations, and it would prevent a very great deal of cost to the landlord all at once; the thing would be kept up regularly, whereas now it is let run to ruin, and it requires an immense outlay to replace it.

Have you turned your attention to the point in what way the law should be made?—I have not; I am puzzled very much to suggest anything.

You have considered the subject a good deal, have

you?—I have thought that the benefit which would accrue would be immense if it could be made a law.

Having so considered the question, you are not able to suggest anything to the committee?—No; I would not venture to lay down anything.

The subject itself is full of difficulty, is not it, in your mind?—I think, taking it upon the whole, it must find a difficulty, certainly.

May 4th, 1848.

MEMBERS PRESENT.

Earl of Arundel and Surrey	Mr. Tatton Egerton
Mr. Bouverie	Mr. Hayter
Mr. Burroughes	Mr. Henley
Mr. Colling	Mr. Newdegate
Mr. E. Denison	Mr. Pusey.

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of Mr. JAMES CRISP.

CHAIRMAN.] You have occupied land, and are now an extensive commission agent and auctioneer of stock in the county of Northumberland?—Yes, and I am resident in Newcastle.

Have your professional pursuits made you intimately acquainted with the county of Northumberland?—Yes.

You have travelled through a great portion of that county?—Most of Northumberland; nearly the whole of it.

You are also acquainted with the county of Durham?—In a great measure, by visiting the principal farmers there, professionally and privately.

Is there any compensation for improvements to the outgoing tenant in most of those counties?—It is not at all general; there is scarcely any instance of it.

Is a good deal of land held under lease?—The northern part of Northumberland is nearly all under lease; the southern part varies very much indeed, from no lease at all up to leases for 8, 10, 12, and 14 years. There are scarcely two estates adjoining that are on the same system.

In the county of Durham is the land usually held from year to year, or on short terms?—Almost entirely from year to year.

Do you find that the system of letting is sufficient to ensure that the landlord receives his land back at the expiration of the term in a state of good cultivation?—The farmer, during the former part of the lease, is generally engaged in improving the land; and then during the latter part of the lease they curtail their expenses, and crop as severely as the covenants will allow, so as to leave as little in the land as possible.

What is the usual length of lease in Northumberland?—Twenty-one years in the northern part.

How soon do you think the tenant begins putting his farm in order to prepare for giving it up?—About half the lease.

When he has been in the farm about 12 years he thinks it time to let the farm go down again?—Improvements are made in the first six or seven years of the lease; about the middle of the lease the expenses are not so much curtailed, but the improvements are not made; towards the conclusion of the lease the expenses are curtailed considerable, so far as the keep of a draught or pair of horses, and on very large farms sometimes as far as the keep of two pairs, together with the corresponding manual labour.

The committee are to understand, then, that this diminished cultivation is carried on so systematically, that some of the plough teams are sold off and the carters discharged?—To that extent sometimes; one draught to

a large farm of 10 or 12 draughts; sometimes I have known as much as two curtailed, that is a rare case of two draughts, one is nearly the outside.

The purchase of manure is generally diminished towards the end also, is not it?—The purchase of manure is not so much curtailed until within the last four or five years, then they do it with caution; sometimes they will go on nearer the end of the term than that; they may have guano for turnips purchased; I have seen that within the last year, but no further than they can possibly help; sometimes two or three years before the expiration of the lease they will cease from it.

There is no doubt, then, that the land falls into the landlord's hands in a very inferior condition in comparison to what it was in at the middle of the term?—It is of very considerable less value at the end of the term than it was eight or ten years previous.

Does that render it more difficult for the landlord to obtain a good rent from a responsible tenant?—Certainly, no tenant will give the same rent, as he considers the state of the land in his valuation; it is not in a state to yield so much rent at the expiration of the lease as it was within six or eight years before that time, when it was in its full power of producing crops, when it would have given 10 per cent. rental more; sometimes more than that.

In your opinion, is the system known even of long leases insufficient for protecting the tenant in the outlay of capital during the whole of the term?—A lease is a sufficient guarantee to improve the farm to its utmost during the former part of the lease; but the tenant does not carry on the improvements the latter part of the lease. I have seen where they have had a break in the lease every five years where the tenant was full-rented, although the landlord was bound to him, the tenant did not make the improvements; he said, "I may leave this in three or four years; it is high rented; I shall not be compensated for it;" and therefore he is nearly in the same state as the person without a lease, because he will have no compensation when leaving at the end of five years; he would not be compensated for the improvements during the later years.

Have you known any case where capital has been laid out under the present system by tenants in Northumberland, and where losses have been sustained from the want of sufficient protection?—Yes; I do know some very serious cases.

Will you state them?—There have been cases where a tenant has been induced sometimes by the agent, without proper authority, giving him to understand that he would get his farm again, to drain and build and otherwise carry his improvements on to the very utmost to the last; that has been done from mistaken authority on the part of the agent, or wilfully to lead the tenant to believe that he would have the farm again; cases of that kind have happened where the tenant has not retaken the farm, though he was induced to make improvements which he never reaped the benefit of.

You say that in those cases tenants have laid out money in draining and building, and got no return?—Yes.

What sort of building was that money laid out upon?—Sheds for cattle, and stone walls, and other fences for dividing and enclosing fields, and draining.

Are there any other cases of that kind which you could mention to the committee?—A few cases I know of, of that kind; but they are all upon the same principle; that is building, draining, and dykoing, induced either without authority from the landlord, that is, the landlord not sanctioning it, or otherwise wilfully done to induce the tenant to keep the farm up for an acquaintance of their own, who has sometimes taken the farm afterwards

You say you do not consider the present system even of long leases sufficient protection to the landlord and the farmer; do you think the farmers in your part of the country would be satisfied without any leases at all, if they had due security for money laid out in improvements?—Many in the southern part of the county would prefer that to having a lease.

You think they would prefer yearly holding, with tenant-right, to leases?—The tenants in the southern part of the county would; in the northern part the farmers are partial to leases, from custom. The tenants in the southern part of Northumberland would gladly receive this recompense for improvements. I have the authority of many of them, from conversation with them, to say they would improve considerably if they had a certainty of recompense in case of leaving.

You say many farmers have told you that if they had certainty of recompense for improvement, they would lay out their money in improving the land. Is there much room for improvements of that kind in the county of Durham, for instance?—It is one of the worst farmed counties in the kingdom that I have met with; I have the authority of farmers in the county for saying so, by letter and also personally.

I suppose this bad farming in the county of Durham may be a good deal attributed to the wet chilled state of the land, that is really a great discouragement to a farmer?—There are a great number of small farms in the county of Durham, not of sufficient size to induce a large minded tenant to take them, and they are taken by men often who have risen from the working classes, who have no lease and have no means of improving the land, and the landlords will not assist them, and they struggle on for two or three years. One gentleman in that county told me three years was about the time of their holding; and last Saturday I had occasion to go into a village; I was looking for a bull; a gentleman told me where there was one in the village; I inquired for the master; he was out in the fields with the muck-cart; the wife said she would show me it. The back door was towards the village; I went through the most wretched house I ever saw occupied by a tenant, I never saw a servant's house in Northumberland anything like so miserable; the front of the house is occupied by muck middens, and little houses for cattle round about it here and there clapped down as if they had fallen from the clouds; the manure was at the front of the door, and three or four steps went down to a mass of filth and confusion. This I remarked to the gentleman on my return, and he said "That is the general way with our small farmers." In this case the man and his wife could neither read nor write.

Mr. BOUVERIE.] What was the size of that farm?—200 or 300 acres.

CHAIRMAN.] Though you have some first-rate farming in the northern parts of Northumberland, in the southern part of the county, and in other parts, is not there still great room for improvement?—There is very great room for it indeed.

By draining and otherwise?—By draining principally, and I think if they had recompense for it (and some of the tenants I have alluded to said, if they had a certainty of recompense) they would improve a great deal more; but they have their leases in this way: the landlord was bound for so many years, generally eight or 10 years, sometimes 14, the tenant was nearly always loose, and they only went on so as to be sure to be paid the next year, or the year after when they found it convenient to leave. I had this from a very excellent tenant, in Newcastle market last Tuesday.

Is there much old grass land that might be drained and broken up in Northumberland?—In some parts, but more in Durham. I recollect about a year ago

being over a farm there, and I came to a very bad grass field, and said, "Why do you not plough this out? it will not keep more than a sheep an acre." The tenant said, "My agent calls that old grass land;" he said, "How much would it improve it? That land will grow turnips and be worth £2 an acre, now it is not worth 10s. an acre." I inquired of another farmer last week to what extent that prevailed in the county, and he said, a very great deal in that neighbourhood, growing bad blue grass, not keeping above a sheep or a sheep and a half an acre, and sometimes scarcely a sheep. If ploughed out it would treble the value of the land.

Can you speak to that point practically as to the improvement of inferior land, from some that you have had in your own occupation?—My occupation in the northern part of Northumberland had attached to it about 100 acres of marshy, boggy land, about the edge of the moors.

What was growing upon the land when you took it, rushes or heath?—The principal part was sward, a sort of rush, and there was one 10 acres field that was attached to 100 acres of good land, on which good land there would be a large number of cattle; but there would not be a single foot of cattle upon that part; the previous tenant had mowed part for hay, and the hay was lying in the stack rotting, having been put together in a rotten state, and all that was lying was left as manure and never used as hay at all. I found that was the usual result after cutting and making the hay, of letting it rot in the stack yard, or in the corner of a field. I drained that land the two succeeding years, and I left it, at the end of ten years from the entry upon the farm, worth £2 an acre.

What was the value of it when you took to it?—It was valued at from 1s. to 2s. 6d. an acre.

What was the extent of that?—One hundred acres altogether, in detached pieces of 10 acres here and 20 acres there.

Those 100 acres were all, in the state you describe, worth 1s. to 2s. 6d. an acre?—Yes.

You have some heath land?—Yes.

Mr. COLVILLE.] What was under the heath?—Sandstone; and under most of the marshy parts sand, and in some cases gravelly clay.

CHAIRMAN.] Have you some heath land still unreclaimed in the north of Northumberland?—Some hilly and marshy land; the close heath grows upon the rock mostly; and there is the long heath intermixed with rushes; that is upon a marshy bottom. I consider a great quantity of it is capable of improvement.

There is a great deal of sand land in the neighbourhood of Belford; can you state whether that heath land is capable of improvement?—That country, I think, is capable of great improvement; there are some restrictions upon it under the head of old grass; for 100 years some of it has been called so. A little further north of it, I said to a farmer, "Why do you keep this field in this state?" About 80 acres; it was not worth 5s. an acre. I said, "It is a disgrace to the rest of the farm; why have it in such a state? It would grow better crops than the best of the land you farm at 30s." He said, "My agent will not hear me speak about it."

Can you state in the case in the neighbourhood of Belford, whether the heath land is not sufficiently improved?—There is a range of hills west of Belford, where a tenant has improved about 100 acres; the first two years he told me it would not pay; it was a great expense without sufficient recompense; but since then I believe he has applied to the landlord to have more done, and he intends to go over nearly the whole of it. It is a very large moor, about from 600

to 1,000 acres altogether; some of it is heath upon a rock that could not be well cultivated, and that being burnt would be good for sheep; it would not be well to take it out on a dry rock.

This tenant whom you persuaded to improve the 100 acres of heath land, you are understood to say is so well satisfied with the soundness of your advice that he is disposed to take in 600 acres now?—He has applied to his landlord to take in more. I believe this case is under special agreement. He told me that he had applied for leave to do it, and the agent told him to go on; that was in the late landlord's lifetime; he said, "No, I will not go on till I have a letter of sanction in writing," and then it was delayed till he got that letter, under some special agreement: what the agreement is I do not know. He is now improving that moor to a considerable extent; he did not say the number of acres.

You have put this as an instance where a practical man has found such moor land as you have in Northumberland capable of beneficial improvement?—I have; he is convinced of it from experience.

You are of opinion that the farmers of Durham and Northumberland, if they had compensation given them for improvements, would be disposed to embark in them?—The security of a full recompense would induce them to lay out a great deal more money than they do; and I believe if they had that security many would improve the land to the utmost; but the district now alluded to is under three or four different classes of farmers. In the northern part the farmers are men of large capital, and they would not stick at any sum of money where they saw a recompense for it.

You are asked generally whether, if compensation were given for improvements, the farmers, not all farmers, but a numerous body of farmers, would be disposed to make an increased outlay of capital in improving their land?—I believe they would.

And is it also your opinion as a practical man, intimately acquainted with those counties, that there is still great room for an investment of capital in the improvement of the land?—There is very great room for it.

Have you not a peculiar sort of improvement in parts of Northumberland, by the removal of loose stone on the land, which is very expensive to the tenant?—In some cases it is very expensive. I have laid out as much as £4 an acre myself. In Aberdeenshire I have seen a landlord lay out from £12 to £13 an acre for trenching 20 inches deep, to make the land plough free.

Is it your opinion that it would be a proper head of compensation to the outgoing tenant?—I believe it would be a very proper one.

And likely to encourage the improvement of land?—Yes.

Have you any other observation to make to the committee?—With regard to those small farmers holding without leases in Durham, they say they cannot get tenants to farm any better, the farms are so small. I have been told that by agents, that they cannot get tenants who are men of capital to take them. If they had any recompense, if there were any security for persons farming on, or for others lending them money to improve with, they might be induced to do it. One great cause of the farmer not being able to farm is, that they frequently begin with a smallish capital, and the landlord does not improve for them, and they cannot do it for themselves. The landlord has of course the preference of his rent by seizure and such like, if the tenant gets back in his rent; therefore persons lending money would be subject to losing it. That prevents monied men lending their money; but if they had se-

curity, people might be induced to support those small farmers with money when they saw them industrious, and likely to do well if they had more capital. In some parts of Northumberland I have seen speculating men of small capital begin to improve a large undertaking. Previously to 1816 or 1817 some of those young speculators laid out a considerable amount of capital, and they had to leave their farms, and others came in, and made fortunes, where the men who made the improvements were ruined. I know two or three striking cases where they have improved by digging, removing stones, reclaiming moor land, and liming.

What is the expense of liming?—I farmed a place in Roxburghshire which cost £5 an acre, and £3 or £4 in removing stones.

What is the expense of liming in Northumberland?—I think the common price of liming is about £3 to £4 an acre.

Is that a lasting improvement to the land?—It is considered a lasting improvement to newly-improved land, such as moors, in bringing them into cultivation. I have seen a crop of corn four times as good upon one ridge which had been limed, as upon another adjoining which had not been limed; and it is much used for preventing the grab in turnips.

In those cases where the tenants had commenced improvements, and were unable to carry them through, you say that the succeeding tenants made fortunes?—Yes, I know several instances of it.

Would it then have been just that the outgoing tenants should have received compensation for those improvements?—I certainly think so.

You are understood to say that the tenants did not fail because the improvements were judiciously carried out, or unprofitable to the landlord or the succeeding tenant, but simply because they had not sufficient means for carrying them out completely?—Yes, just so. If they had had the means of carrying them out they would have made their fortunes, which they were entitled to do, and which the next tenant did without any expense; they merely came to reap the crop which the men who were ruined had sown for them. If the tenant had had compensation for those improvements, he would have probably continued in the farm. I am of opinion, from what I have seen, that we are better, in the majority of cases, without leases, with 18 months' notice to quit; and there would be more improvements and longer holdings. On both sides of the Tweed, with no leases, the tenants remain much longer with the same landlord than where they have leases.

Is that the opinion of many farmers with whom you have conversed?—It is allowed by farmers I have spoken to, as well as landlords, and it cannot be denied to be the fact; examine any gentleman's rent-roll and you will see the same names without leases standing for ages, and sometimes there are more improvements than where there are leases.

Do you think many farmers would prefer a yearly holding with compensation, to a holding for a term without compensation?—I am not sure that the north country farmers would accept of it willingly without a lease; they have a strong partiality for leases upon the large farms; in the middle and southern part of the county, and Durham, they would accept of it; many farmers have told me if they had leases offered them, they would not take them. They said the corn laws were changed, and things might transpire so that they would not wish to take a lease, and they did not choose to be bound. That is the answer I generally get from the farmers in that district; they say they do not wish to be bound, they think it is better to be loose.

Mr. HENLEY.] In the case of the farms you have

spoken of, and in respect of which you use the term young speculators who made improvements which they were not able to carry out so as to reap the benefit of them, were those large or small farms?—They were farms of from 600 to 1,500 acres.

You would call those large farms?—They were a pretty good size. They were not the highest rented farms.

The question refers to the extent of the farm, not to the amount of the rent?—Upon those matters sometimes they are intermixed with what is called sheep-walks, to the extent sometimes of three or four thousand acres; fifteen hundred is above the average.

Should you consider those to be large farms as compared with the farms you have spoken of in the county of Durham?—Yes, three or four times the size.

What do you mean by the word speculators?—Young enterprising men, having good capital to go on with in the usual way, taking advantage of the profit to be derived from the improvement of the land. I have known men set to work, and I have heard them say they would beg, borrow, and steal to make improvements; but they have injudiciously gone beyond their available means.

You do not use the term then with reference to the nature of the improvements they were carrying on?—No, it was not speculative at all as to the improvement of the farms.

Were those men of a better or inferior class of life to the men you have spoken of in the county of Durham?—They were the better class of standing in society.

Would they be more likely to have better friends than the men of the class you have spoken of in the county of Durham?—Yes.

Then how can you expect the people of Durham would be able to carry on those improvements, when those gentlemen could not do so with better friends and a better class of life?—The small farmers in Durham might very probably be supported if their friends saw they could be repaid for their money. It is often the case that a man of industry has friends and relations who, knowing the man's industry and knowledge of his business, will support him, and enable him to recompense himself for his outlay. There is so much land in the county of Durham that requires very little trouble, it is a sort of wet gravelly land, that very little improvement would make it capable of growing turnips, instead of keeping a sheep an acre, which would not yield above from 7s. to 10s. an acre a year, but which, if they had a crop of corn, would compensate them largely.

Why do you think that a man taken from the labouring class would be more likely to find persons to lend him money than the speculators you have spoken of in Northumberland, whose friends are in a better class of life?—As to those farms that I have my eye upon, the improvements were difficult and expensive to accomplish, and I believe the two parties that I am alluding to had borrowed money to a great amount of their friends before they failed; they failed in the year 1817. The years 1816 and 1817 were notorious in our districts. Those men could not get any more money; if they could have gone on three or four years more they would have made their fortunes. The improvements were upon the edges of the mountains; they had stones to take out, and walls to build, and so on.

You said the improvements were not speculative but safe in their kind?—Yes; but those two years were too much for them, as well as many others. Those farms in Durham I am thinking of require only the plough and a few drains. I passed over some last Saturday and Friday, and I looked particularly at them, and

nothing was wanted but the drains ten yards asunder, and they would want nothing but the common ploughing and sowing afterwards.

You have said that the reason that that land is not broken up, is because the landlord will not give his consent?—That is the reason given to me by a great farmer in the neighbourhood.

Then the want of security has nothing to do with not breaking it up?—No, I think not. The reason given me is that the agent would not have the grass land meddled with, and the landlord never meddled with it; he had an idea that it was a deterioration of the property to plough the land.

You have stated that in Durham the tenants occupy about three years; do you mean that is to be taken as the general rule or the exception?—That is what a gentleman farmer in the neighbourhood told me; I think it is too limited; he said they generally run their race in three years. I do not agree with that; I think they go further than that.

Which, in your opinion, are we to take it as, the exception or the rule?—The exception, I think, though he gave it me as the rule.

Do you consider a lease any security?—Yes, a lease is a security to the tenant to be reimbursed his improvements, and men of capital will not make improvements without security.

You have stated that the tenant without that security, as far as the lease goes, holds longer on a series of years on the Tweed side of Durham?—No, not on the Tweed side, they were the middle and southern sides of Northumberland; but the improvements generally do not go on there.

You said that the tenants upon the Tweed side, both north and south, have no leases?—You misunderstood me.

Was it right to understand your evidence to be, generally speaking, as well as your acquaintance with the tenants will allow you to form an opinion, that they hold for a longer period at will than where they take leases?—That is the general rule to a great extent in the middle part of Northumberland, more there than in the southern part of Northumberland; where there are no leases they are continually changing, in the southern part; sometimes the tenants have not been in for more than one year, and the estates are in a wretched condition.

Speaking generally, and not of exceptional cases, is it your opinion that the tenants hold longer under tenancy from year to year than under leases?—There are three or four cases where they seldom change, and they hold longer than under leases; speaking of Northumberland, there are two distinct descriptions of tenure of land: in the southern part of Northumberland, where they have no leases, they are continually changing, but in the northern part, not the Tweed side but farther south, large estates from year to year are very seldom changed, they have confidence in the landlord; but the improvements do not go on; but they go on holding for generations.

Are those estates well or ill farmed?—They are not generally well farmed: there are some exceptions, and very great exceptions, where they are as well farmed as anywhere without any recompense or security at all.

You were understood to say that taking a farm held upon a lease of 21 years, for the first five or six years great improvements were made, in the middle no improvements were made, but the same amount of labour was expended in the ordinary cultivation of the land; and the last five or six years labour was taken off?—Yes.

And you were understood to say that in a general way it would be about one team in twelve that would

be knocked off?—That has reference to all the seasons except turnip time; they have a great many breeding mares there, and they have a great quantity of young colts, which, as soon as the turnip time is over, they sell off or turn to grass, and keep less during the autumn and winter; the turnip time requires a great many more teams than any other time, in that particular quarter.

Take some one farm upon these 21 years' leases; have you any farm in your mind at this moment that is so held? Take one of the farms you have been speaking of, where this change of management has gone on, do you know at all about what rent the farm was taken at?—I cannot speak distinctly to the rental; but they were, I should suppose, about £1,500 to £2,000 a year.

And about how many acres was the farm?—An ordinary one.

Confine yourself to any one farm that you have in your mind?—They have frequently hill land attached to them, say perhaps 1,500 acres.

For about how many acres of hilly land, and about how many acres of tillage?—One thousand acres of tillage land, and about 500 to 700 acres of hill land.

What would be the value of that land in your judgment in the middle time, when the improvements were in full swing; what would be the value of that farm, supposing it then to come into the market, and supposing the tenant had the power to underlet it?—There would be at least 10 per cent. more value.

At the end of it?—At the middle of the term than at the end of the lease.

Then at the end of the term what would be its value?—I am alluding to the end of the term. In the middle it would be worth 10 per cent. more than at the end.

What would it be worth, then, at the beginning?—Upon the farm I have in view I should think it would be worth 20 per cent. more in the middle of the lease than at the beginning, and 10 per cent. more than at the end.

Then this falling off in the management would be a deterioration of 10 per cent.?—Yes, I think so; it would be worth that less to the person taking it.

And less to the landlord to let it?—Yes.

What, in your judgment, upon that farm would be the acts of husbandry that would be now payable in Northumberland? What in an ordinary change of tenantry would be the amount of money payable now in Northumberland to the outgoing tenant by the incoming tenant, according to custom?—The straw and the manure all belong to the incoming tenant; the incoming tenant only pays for the grass, seeds, sowing the year before, for which the outgoing tenant must produce his receipts.

Then the outgoing tenant takes the away-going crops?—Yes.

There are no acts of husbandry by the incoming tenant?—No, the manure lies in the hovels where it is made.

At the end of a 21 years' lease, according to your notion of the payment that should be made by the incoming tenant, how much money ought to be paid do you think for this 1,000 acres of tillage?—Some farms would not require much improvement in draining, because a part is generally dry land.

Will you confine your answer to some one farm. You have spoken of those 1,000 acres of tillage; and where that takes place in the first five years, the value is raised 20 per cent. in the middle of the term; then it is deteriorated 10 per cent. at the close of the term again. You are now asked in your judgment what should the outgoing tenant be entitled to receive upon that farm,

provided he kept up the cultivation at the full swing to the end?—For nothing but the purchasing of manure, and feeding his cattle and sheep with oil-cake.

About what would it amount to in capital, in your judgment?—It is not at all the custom to feed cattle and sheep with oil-cake at present; they buy manure at £3 an acre.

You are giving evidence here upon the state of things which you say is under your own knowledge; you have been asked to confine your attention to some one farm, and you have told the committee that farms are deteriorated in that part of Northumberland 10 per cent. towards the close of the term, by the want of security to the tenant; what amount of capital, then, in your judgment, according to the Northumberland practice, would that tenant be entitled to receive?—We have no custom of that kind; the improvements do not go on to the end of the lease, there is no recompense for them. If the lease be renewed, the tenant would go on with liming until four or five years or more than that previous to removing, and he would be recompensed for that if the farm was capable of a good deal of improvement in reclaiming.

How often do tenants in Northumberland, upon such a farm as you have spoken of, lime their land?—Generally not above once during a lease of 21 years, and sometimes not that unless for preventing grub in turnips, which requires to be done oftener, say at intervals of 15 or even 10 years.

What in your judgment would a man be entitled to at the end of the term, for the use of lime?—Nothing, because then he has got the benefit arising from it.

Would he be entitled to anything for drainage?—Upon this farm, if he were to drain at an early period, he would be recompensed.

Is it the custom in Northumberland, upon such a farm as you speak of, to feed with oil-cake?—Very little; it is however increasing.

In your judgment, if it were carried to such an extent as would be prudent in your opinion, how much money would the tenant be entitled to receive upon such a farm for oil-cake?—Half what he laid out.

How much would it amount to?—He might use 10 tons; half of that would be £50; oil-cake is very little used with us.

Do you purchase any other artificial food upon such a farm as you have spoken of in Northumberland?—No; there is a little linseed sometimes for calves.

Do they purchase artificial manure?—Yes, bone dust and guano.

About how much would the outgoing tenant be entitled to receive for the articles of bone dust and guano?—Of guano he would require about £150 worth for the land for turnips, where he had a deficiency of common manure.

How much of that should the incoming tenant be obliged to pay?—I think it would repay itself in four years sufficiently.

Would the incoming tenant have to pay three-fourths?—Yes; he has both a great increase in the crop of corn as well as turnips, and the manure from them.

Then £120 would be paid for that three-fourths; what other artificial manure is used?—In the article of guano it is found that it has a great effect upon grass seeds; and if they were compensated for it, they would sow it considerably upon the young grass land; tenants have told me themselves, those who have very short leases, that they would sow guano within the last two or three years.

How much more of that could they sow upon the good land?—About £1 an acre.

How much would it come to?—About £300.

That would be three-fourths of it; perhaps it would not go on so long?—It would recompense them much earlier than that; but unless they had some profit along with it they would not do it; they want an inducement for doing it.

Would half be fair in that case?—For one year's use.

Supposing the tenant manured the grass seeds the year he was going out, would it be fair for the incoming tenant to pay half?—He should pay more, because the hay is consumed upon the farm, and he would have a great increase to his manure and the following year's grass.

The outgoing tenant does not take the hay?—No.

Then the incoming tenant would have to pay for it?—Yes, he would get the full benefit of it at once.

How much money would be paid for that?—The entering tenant ought to pay two-thirds.

It would be £200?—Yes; perhaps less than that might do; but to induce the tenant to lay out money freely he ought to have more than a bare recompense.

With respect to bones; having taken this large allowance for guano, would he purchase any bones?—No; I am taking the guano as a substitute for bones.

In that part of Northumberland do they purchase any other artificial manure?—No, not that I am aware of; there have been some little experiments sometimes; at one time they had some chemical preparation for grass seeds; that did not answer.

Then £150, £100, and £200 would be the aggregate of what the incoming tenant would have to pay?—Yes.

That is the difference between keeping up a farm in a high state of cultivation and keeping it in a deteriorated state?—If a person had a full recompense, he would take his farm again and keep his land in a much higher state of cultivation.

In what way would he keep it in a higher state of cultivation other than by the ordinary acts of good husbandry and tillage, which a man is bound to do under any circumstances: state the items by which you come to that conclusion. You say that the tenant takes steps at the beginning by draining and otherwise to make the farm worth 20 per cent. more; in the middle of the term he would not be entitled to that full 20 per cent.?—The principal advantage would be to keep the farm capable of employing more hands to keep it clean.

Which of those acts of husbandry do you think, in your judgment, the tenant ought to be paid for?—The draught, and the different kinds of labour attached to it.

That would be the ordinary operations of husbandry?—Yes.

Do you think the outgoing tenant ought to be paid for those ordinary operations of husbandry?—It would be that much more value, and the tenant had better pay it than have the land in the state you often find it in.

How much do you think the outgoing tenant would be entitled, upon this farm you have spoken of, to receive under the head of acts of husbandry?—This farm I allude to, it would take the away-going tenant to expend £150 a year more in acts of husbandry than he generally does; that is, he would curtail his expenses £150 or even £200 a year.

How much would it be just that the incoming tenant should pay; what proportion of that?—Upon the advantage he would derive I should say nearly the whole of it, because the away-going tenant has received little or no return upon his capital, and therefore nearly all the expenditure he makes would be for the benefit of his successor.

How many years would it be an entire benefit to the incoming tenant?—From three to five years, because the curtailing the expenses generally begins five years before leaving the farm. They do it gradually.

Do you think a man letting his land begin to get foul does not suffer something in five years?—I think he suffers very much; I have seen tenants injure themselves by overdoing it.

How should that expense be divided between the outgoing tenant and the incoming tenant, if you admit that he injures himself by letting his land get foul?—If the land gets foul he would be entitled to scarcely any recompense. The incoming tenant would not be entitled to pay for anything he did not receive; if the land did get foul, the away-going tenant should be if possible made to pay for it, that is for the injury done to the land.

There is a degree of foulness that may not be a positive injury to himself?—Without any loss to himself.

That has happened within your recollection?—Yes; not in a great degree, but with a slight degree of foulness they could get a good crop of corn.

What then would be the sum which the outgoing tenant would be entitled to receive for those additional tillages?—I would say from £200 to £250 a year, for those last three years.

That would be £750?—Yes; having the land in good order or in indifferent order, there is more difference to the incoming tenant than that.

In your judgment, the acts of husbandry would be £750, and the manurages would be £370?—I think I have stated that.

Those are the figures taken from your statement?—Yes.

Is there anything else in your judgment, so far as manures and acts of husbandry are concerned, that the outgoing tenant would be entitled to receive for?—I think not, unless for making new fences and such like; it is of great importance to the incoming tenant as well as to the outgoing tenant to have the machinery in good order, the fixed machinery or threshing machines.

In that part of England does the tenant remove those machines or not?—He is not bound to remove them; he can remove them if he likes; but the entering tenant very seldom takes them, which is a very great loss to the outgoing tenant. I have seen a machine repaired to the amount of upwards of £100 two years before, sell for £40 at leaving.

It is a matter of agreement between the parties whether they take them or not; if the incoming tenant does not take them, the outgoing tenant takes them away?—Yes, they do not belong to the landlord generally; the way that the farms are taken it is a very great loss; the tenant says, I would rather have a new machine and my own machinery. I think it is a serious loss indeed.

Then if you are rightly understood, those items you have spoken of, apart from the buildings, and fences, and machinery, amount to £1,120?—I decidedly think that the farm would be that much better to the incoming tenant than when it is in the way in which he often receives it, from the land being let out of condition. That is the difference between entering upon a farm in a good state of cultivation or a bad one.

The result of this would be what is wanted to be got at in figures; which is this, that according to your judgment this farm of 1,500 acres, with that amount expended upon it, what rent do you put it at?—About £1,500 a year, that farm I allude to.

£1,500 a year, with the increase spoken of in the middle of the term, would be worth £300 a year additional rent when it was at its full swing?—Yes.

At the termination, in consequence as you say of this want of security, it deteriorates so that it is only worth £1,500 a year?—Yes, that is my opinion.

Then in your opinion what is the great inducement to the outgoing tenant to alter the mode of his cultivation?

—He saves that expense the last few years, and he considers he gets a good a crop. I have said that sometimes he carries it too far; the object is to save as much expense and take as much money off the farm as possible.

Would any man holding a farm be content at the end of 21 years to pay £300 a year more rent for it; that is, the same tenant; would it answer his purpose to have laid out these £1,120 to secure to himself the payment of £300 a year more rent for his farm?—If he expected he was to pay £300 a year more rent, he would rather not improve it to that extent; he would not improve it to make himself to have to pay it out again so largely.

Then a tenant holding by lease lets his farm fall back that he may not have to pay an additional rent the next 21 years?—If he leaves the farm it is to save himself, and if to take it again, to make the rent as small as possible.

Then this security of payment would not induce him to keep up the cultivation; not to go on the same, because at the end of the 21 years if the farm was worth £300 a year more, he would be required to pay £300 a year more for it?—Yes.

If you were agent, would not you ask £300 a year more?—That would depend upon other things. If I thought it was worth that, I would ask it.

Therefore to prevent paying the £300 a year more is a stronger inducement to the tenant to let the farm go back than to save this £1,000?—Yes, he would not improve it up to the end of the lease.

Whether there is security or not, he would not improve to the end of the lease?—Not to so great an extent, because he would have to pay for his improvements; that is why I advocate 18 months notice to quit; at the end of the lease so many changes take place, the tenant is always preparing for that to save himself, or take the farm as low as he can.

That would be the effect whether there were security for payment at the end of the lease or not, since the increased rent would be more against the farmer than the receipt of the capital?—The increased rent would be more against the farmer than the saving of the capital.

As to those Durham tenants, you said 200 acres was the average?—There are a great many of 100, 150, and 300; but I am not so confident about the size of the farms there.

You have stated that the grass land is worth about 10s. an acre, and worth 40s. if ploughed up?—I saw that myself; when I saw it, it was in a high state of cultivation; the annual value of the grass land would not be more than 10s. an acre, and the farmers in that district say there is a great deal of it; the wet gravel is that which I allude to, as ploughing out would not improve the clay. I do not think that I would take it out at all.

And the reason why that grass land was not broken up was, that the landlords would not give their consent?—Yes, that was told to me.

Is it not a strange thing that the landlord does not like to get 40s. a year rent, instead of 10s.?—That I think would be an act of insanity.

Are the Durham landlords insane?—In that point they are, where they refuse such grass land to be broken up.

Where it is worth 40s. converted into tillage, and 10s. in the grass?—Yes; the answer I got was, it is old grass land, and neither agent nor landlord will allow it.

Is that a general thing, or an exception?—I believe it is very general; they do not draw the distinction.

The tenants would be glad to break it up without any security; that is not done for want of security?—With two years' security they would do it; the draining would cost £4 an acre, and in two or three years it would then produce crops worth £8 or £10 an acre.

The first breaking up of old pasture land is very profitable?—After the first or second year I have seen it do better; it may have done badly the first year or two.

It is very profitable in three or four years?—Yes.

It requires great care not to spoil it by great cropping?—Yes; if that land were kept in a good state of cultivation, it would become valuable if it were fairly cropped; if a man were to go and overcrop it, at the end of five or six years it would be of very small value.

That may be one reason why the landlords do not give consent to have it broken up, the difficulty of securing it from being overcropped?—It is the want of knowing the subject.

You have stated that in Northumberland there were some cases where parties had been put out; do you know any cases where farms have been given up in a dilapidated condition to the landlords?—Yes, I have seen some.

Are those exceptional cases?—Yes, those are exceptional cases.

But they must not be taken as the general rule?—Not as the general rule.

In Durham those small tenants that you have spoken of, raised from the labouring class, if there was to be an improved system of husbandry on a large scale those poor men must all be turned out?—They are a very industrious class of people, and could be employed in some way to great advantage.

Your view would be to reduce those men to labourers?—They are very active intelligent men, but they are in want of capital, and therefore they are not the people to carry out those improvements; if they had the land drained by the landlord they could pay good interest upon it by the increased crops; they have not sufficient capital to improve it themselves, therefore it lies as it is.

There is no doubt that if the land were improved, it would be a benefit to them?—Both to them and to the landlord: they would pay more rent and interest upon the money laid out, there would be a considerable addition to their income from the crops.

You were understood to say that this bad state of things in Durham was owing to the want of capital, and not want of security generally?—It is both; sometimes I have spoken to stewards upon the subject, and they say they cannot get any good farmers and men of capital to take the farms. I said to one agent, "Why do you suffer such farming as that?" and he said, "We cannot get better tenants to take them."

On account of the size of the farms?—Yes, and the bad clay land; he said they could not get the farms off their hands. In alluding to the good grass land in Durham, the general custom is there to farm without a lease, and they have no money laid out by the landlord; the estate I allude to as being badly farmed, I know two or three farmers on it whose farms are in the best state; he is an excellent landlord, and will not turn them out or raise the rent. The tenant I have in my eye was offered a few years ago a lease; the landlord said, "You must have a lease as you are making such great improvements;" he said, "No, I want no lease; I have farmed under your family so many years."

He continued farming as he was?—Yes, without any lease; his land is in the highest state of cultivation; he has no recompense. He says there ought to be leases generally, and to be taken three or four years from the end of the lease, although he himself refused a lease; he says generally there ought to be leases.

Therefore he chooses to act one way and recommends his neighbours to act another?—I cannot reconcile that.

The result of the communication is, that he chooses to occupy one way himself and tells his neighbours to act another?—I have his letter in my pocket to say there

ought to be leases, and renewed four or five years before their expiration; I have his authority that he refused a lease from his landlord.

His theory is one thing and his practice another?—Yes, I suppose so, but he farms in very first-rate style; and on the same estate, the farmers having smaller capital farm badly.

Mr. NEWDEGATE.] Supposing that a poor tenant had an agreement giving compensation for certain improvements, draining, for instance, would not that induce persons to advance capital to him?—I have said in my evidence that their friends might be induced to assist them; I have known many cases where the friends will join together to support a relative in a farm where they saw they would not lose their money.

And you think that an agreement giving compensation for the large outlay in permanent improvements would give that security, providing it were binding on the landlord?—Yes, I think so, if the farmer were in circumstances to pay him anything after paying his landlord; sometimes he is back in his rent, and the landlord would require all the capital of the tenant to secure him, then there would be nothing to recompense the friends; where they saw a man could pay, and he was in such a state with his landlord, they would assist him.

Would not an agreement place him in that position, with proper covenants?—If his rent gets back, and he has to leave the farm before the expiration of the lease, the landlord would come in.

The question refers to a yearly agreement giving compensation for permanent improvements?—Yes; in a great measure it would.

Can you account then for the fact that such agreements do not prevail?—It is a new thing, we have never had such a thing, and they have gone on for ages without it, and, like everything new, they take it up with great caution.

Then you attribute the not entering into such agreements merely to the fact of their being ignorant of their operation?—I believe so; it is nearly new in our district, and they receive everything new with a great deal of caution.

You spoke of security, and afterwards of 18 months' notice, is that the security which you think desirable with yearly tenure?—Yes; I had occasion lately to lay a paper before the farmers' club on that subject, and I recommended the farmers instead of lease to have 18 months' notice to quit, and to be recompensed for permanent improvements; that is, I think, preferable to a lease.

Then 18 months' notice must be the condition of agreement for yearly tenure?—Yes.

For the current holdings?—Yes.

The tendency of your evidence is to show that in the latter part of the lease the land is somewhat deteriorated?—Yes.

Would not that process go on, particularly during those 18 months, under notice in the case of current holdings?—It would in a measure, it could not go to the same extent; they would not have so long a time to do it as at the end of a lease; they would have only one summer following to come through their hands, that is the only time they have of saving the expense; it is in the cleaning of the fallows that the expense is saved.

Then in fact that would limit the means of recompensing themselves to what they could get during the 18 months' notice?—They would not expend any money but what they could have back during the 18 months; they would go on making the improvements, that is, by buying artificial manure, such as they would be recompensed through the additional crop, and by the incoming tenant.

They could only compensate themselves by what they could get out in the 18 months?—Yes.

Might not that system lead to the prospect of the system being continued for some years, and then leave the tenant in a position to be only able to compensate himself by the 18 months' notice; then it would be very inferior to the whole outlay he had undertaken?—For the draining and such like, before the 18 months he would have to be compensated by the incoming tenant whatever he had done; supposing it is eight years, all that he had done previously he would be recompensed for before the 18 months. I would not swamp all improvements made previously.

Then you are to be understood to say, that you propose that the tenant should be repaid in certain proportions for his outlay in the previous years, but that he should have those 18 months' notice to compensate himself for the less permanent improvements, acts of husbandry, and so on?—Yes, and to look out for a situation for himself. Six months' notice to quit is far too short a time for a tenant to suit himself with another situation, because it requires two or three months often before they can get settled with his present landlord, or get a new one, and the tenant is waiting for the settlement to take his new farm, which often leaves only four months to look out for a new farm, which I think too short.

Would not the 18 months' notice tend rather to deteriorate the farm than to give the tenant means of compensating him?—He would save his expenses.

Would not it be a temptation to increase that saving to the deterioration of the farm?—Yes.

Then would not it be preferable that he should have only to be compensated for his improvements, to a later period than would be included in the 18 months?—It would be better for the land and the incoming tenant.

Would not it be as well for the outgoing tenant?—I think he would not be enough compensated; but for all the minutiae of the expenditure it would be difficult to define which had the benefit of it, the outgoing or incoming tenant; that might make it too complicated.

The further you extend the time back, the greater you would render that difficulty?—Yes, I believe so.

Mr. COLVILLE.] How long do you consider guano remains unexhausted when sown on seeds?—If a tenant were allowed to sell hay, he would recompense himself in two years, in some cases it requires three years before it is recompensed. I have seen it four years.

Speaking of seeds that are mown, how long do you think it requires before it is exhausted. Before the tenant is recompensed, taking it exactly, how long is it before it becomes exhausted?—It is effective for two years.

When it is mown both years?—Only one year.

Graze it the one year and mown the other?—Depastured the second year.

Is not the land in a worse state after that guano is exhausted than before?—I have not had sufficient experience to try that, but with soot I have seen it worse, but with guano I have not seen it.

It is not a permanent fertilizer, but a stimulant?—Yes, a stimulant.

Why then should the incoming tenant pay for that which he deems rather an injury than an advantage?—He has the hay upon a part.

You think the extra growth of hay ought to remunerate him for what he pays?—Yes, I think so.

By what power is the threshing machine worked?—Always by water, where possible; secondly, by steam; and thirdly, by horses.

In cases where they have a steam-engine for the working of the machinery, has not the landlord to pay an extra insurance?—No, I believe not.

It is not the custom of the Northern Insurance Office to demand a larger insurance?—The tenant pays a larger insurance upon the steam-engines.

Does the tenant insure the buildings?—Very often he is compelled to do it in his lease.

It is the common way of letting the buildings that the tenant should insure the buildings?—Yes.

Then any extra cost he has to pay for erecting a steam-engine the tenant suffers from?—The insurance is so small he would be glad to pay the extra insurance. I never heard any objection to that; the advantage is so superior to working it by horses that the tenant would not hesitate to pay 10 per cent. to have a steam-engine erected to his land.

Evidence of Mr. GEORGE TURNER.

CHAIRMAN.] You are an occupier, and also an owner of land, residing at Barton, near Exeter?—I am.

You are a member of the Agricultural Society of England, and a successful breeder of cattle?—Yes.

What is the extent of land you occupy?—Between 800 and 900 acres. Above 600 I rent, and 200 or 300 I farm of my own.

What is the usual time of the year for giving up farms in the county of Devon?—Lady-day; sometimes at Michaelmas; it varies, but it is either Lady-day or Michaelmas.

—In a Lady-day holding, does the tenant have the way-going crop?—No, he has nothing after he quits his farm; he gives up everything when he leaves.

Who puts in the wheat?—The incoming tenant generally. There is a provision made for the incoming tenant to come in and sow so much wheat.

Does the incoming tenant plough up the wheat eddish?—Yes, where there is a lease to that effect, it is generally provided.

You say that sometimes by lease the incoming tenant has a right of entry to put in the wheat crop; how is it if he has no agreement; how is it by custom?—There is no custom to give him a right at all.

Is land generally held by agreement and not by the custom of the country?—It varies so much as to the holdings in Devonshire that you may say there is no general custom in the county with respect to that.

Has the outgoing tenant any claim for improvements that he has made on his farm?—None at all.

For cake purchased for the food of cattle?—No, I believe it is never recognized on that principle in our county, except by special agreement.

In your opinion is the tenure of land in your part of Devonshire such as is not encouraging for the improvement of its cultivation?—I think it is; I think if proper encouragement were given and a better mode of tenure existed, or some legislative enactment was passed, that the land could be vastly improved in the county of Devon.

You hold land under lease?—I rent £700 a year under lease.

You have also compensation for improvements at the end of your term?—I am to have in the new lease; it is a suggestion that was made by myself and some other parties, and the agent is coming into it; he thinks it would be better to bind the tenant to good farming and give him some compensation at the end of the lease.

So that, in fact, you are disinterested in the evidence you give?—I am quite disinterested in the evidence I give; I have no interest beyond the public good; I happen to hold under a long lease, and am to be compensated for any manure I may have at the end of that lease, and the remainder of my farm is my own.

Point out to the committee what you consider to be the defects in the tenure of land in Devonshire?—A great

deal of land in the neighbourhood of Exeter is held on lives.

The committee do not wish to enter upon the question of church leases, but is the land held on lives, to which you refer, under lay landlords?—A great deal is held on lives.

Mr. HENLEY.] Do the occupiers actually hold it under lives?—Not altogether; there is a great deal of land in the county leased for lives. Some years ago I held some land in trust and do at this moment, under a noble lord; he is the owner of the fee-simple; I have a lease for life on it, and some part of this property is held on a single life, and at this moment we cannot carry on my improvements; I cannot say to the tenant, "You do not farm your land well," because he would reply "I may be turned out at the end of any one year if the life drops," and, consequently, a very bad system of cultivation goes on there; we are almost squabbling about fitting up the buildings; some dispute has arisen within the last fortnight whether the buildings shall be put up in a first-rate way by some arrangement, or whether they shall be put up in the old fashion style that the lease binds us to do. With respect to land held for a single life, when the life becomes infirm, or when illness takes place, the tenant in possession ploughs up all the land and sows it with corn; there is no law to prevent it; I have known many instances of that, and the land gets deteriorated because there is no preventing it; "quiet sow, quiet reap." If you can sow your crop, and the day after it is sown the life dies, you can take it off again, and the land goes on in that state; no land can possibly be farmed worse than it is, and there is nothing to prevent it. If compensation could in some way be insured to them when the life dropped, a better cultivation would take place; it is a crying evil in my neighbourhood, that single thing. Then again, a great deal of land is held under lay landlords for short terms, such as seven years.

CHAIRMAN.] Have those short terms the effect of securing the tenant sufficiently?—No; in some farms in the former part of the lease, say for three or four years, the tenant improves the land, and the next three or four years he will be exhausting it again; I have a relation who farmed in that way; I said to him "It strikes me that some of this land could be improved;" he said, "What is the use, I cannot get more than seven years' holding in it; it is to pass into other hands at the death of the life, and I cannot improve it?" I said, "It would be worth more if you could;" he said, "Yes; I could make a couple of hundred a year more of it."

Would it be desirable to give tenants compensation for draining and otherwise improving the soil?—Yes, I think so; it would be one of the first things to be done.

Is there much improvement of that kind required in your part of Devon?—Yes; there is a great want of improvement, and I have found that farmers are quite ready to invest their money if they get security; I have spoken to many of them, and they say, "If I was sure to get it again, and could get a lease, or get compensation in case anything should happen if I should quit my farm, I should be quite ready to invest every shilling I have got in it."

In some parts of Devonshire the farm buildings are of a very moderate character, are they not?—They are very bad indeed.

You have not, generally speaking, a very great number of good farm buildings in Devonshire?—No; some have been erected by some gentlemen lately.

Is that an impediment to the increased produce of the soil?—Yes; they cannot make the best of the land with bad farm buildings; they cannot farm the land to the best advantage under those circumstances.

In some parts of Devonshire catch meadows may be made at moderate expense?—Yes; there are a great

many there already, and more might be done in that way a good deal.

If tenants had a good system of compensation they would be disposed to improve the farms in that way?—Yes, in every way; I see a disposition to do it among the farmers; but there are so many short holdings in Devonshire, and there is such insecurity altogether, that there are not many men who have an inducement to invest their money in that way.

As a practical man yourself, and conversant with the views of a large body of farmers, are you of opinion that they would so avail themselves of this privilege of compensation if the legislature granted it, and that they would increase the employment of the labourers to any extent?—Very much, I should think; indeed I have instances of it near me, where men have had long leases granted, and at the beginning of the lease they have improved the land very much indeed. I have been reclaiming some land lately, having taken a new lease in the farm which I rent, at the expense of £20 an acre.

Mr. NEWDEGATE.] What is the length of the lease?—Fourteen or 16 years.

CHAIRMAN.] With a compensation at the end?—Yes, for manure, and some part of the permanent improvements, such as drainage; my landlord is going to do part of it.

Would anything which increased the employment of labourers be very desirable in Devonshire?—Yes, indeed it would; the better farmer a man is, the more labourers he employs, and the better he pays them; it is generally the bad farmers that pay the worst, and employ the least.

You think that the state of the Devonshire labourer is such as would render it very desirable to find any means of giving him increased employment?—Yes, certainly.

Have you any other observations to make to the committee?—I received a communication this morning from a very practical man who lives near me, which I can produce to the committee if desired; but it merely states those facts corroborating what I have stated. There are many instances of tenants having offended their landlords, who have had six months' notice to quit, and who have received no compensation at all, and they are obliged to quit. I know many instances of that taking place in the county, and I also know instances where bad tenants have been obliged to make compensation to the landlord for the bad farming. I think it quite desirable that the law should give the landlord the power of recovery from the bad tenant, as well as the tenant to recover from the landlord.

Mr. NEWDEGATE.] You have spoken of leases upon lives; are there any fines upon renewal?—It is generally determinable upon the death of the life; perhaps there is nothing but a heriot, or the best beast is taken by the landlord; the man who holds the fee-simple generally steps in, and takes the best beast, and the land is delivered up to him in a very miserable state.

There is the practice of heriots or fines, but not to a great extent?—No, it is not a matter of great consequence; that is the greatest fine imposed.

Then the evil you complain of is the uncertainty of the tenure?—Yes.

In your case you have proceeded upon a system which mitigates the evil of that uncertainty by giving you compensation for improvement?—Yes, that is the thing that is wanted generally.

And that is done by private agreement?—Yes, that is done by private agreement; but we have many cases where that private agreement cannot be entered into, cases where parties cannot let upon lease; it is required to have some legislative enactment to protect tenants. It is not the good landlords who need to be meddled with,

but it is the bad ones, and those who cannot give compensation, who require to be dealt with.

Then it is desirable that the landlord should have the power of giving compensation and curtailing the payment of that compensation upon the property; you mean the difficulty arises from the landlords being tenants for life, and not being able to give security for compensation?—Yes, there does want some general legislative enactment entitling the outgoing tenant to receive remuneration by fair arbitration; the matter then would be quite satisfactory, and there would be no difficulty in it at all.

Then you are an advocate for a law which would entail upon an estate compensation not given under the agreement by the landlord or by any possessor?—Where a private agreement is entered into, the law would be of no use; I should wish to have a law made that would give an improving tenant, whenever he quitted his farm, compensation for what he had not had remuneration for.

In default of an agreement from the landlord?—Yes, in default of an agreement of that sort from the landlord.

Would not it be equally just that the law should let the land?—No, I would not have the law let the land; let every man make the best bargain he can with his farm, only do not let him dispossess the tenant without giving compensation for what is in it.

Is not the rent of the farm in the agreement between the landlord and tenant?—Yes, certainly.

Why should not the rent be put on the same footing as the compensation for improvement?—There is a very wide difference between the rental and the compensation for improvement; one is the landlord's property, the other the farmer's.

What would be the practical difference to the landlord if he had to take a less rent or to pay a higher compensation. Supposing a landlord to let a farm, and the law to step in and to say, "You shall pay compensation to the extent of £500," would not it be the same to the landlord where he was bound to pay that £500, as if the law decided that he should receive less rent?—No, I think there is a wide difference; because if the law says you shall pay your outgoing tenant compensation for what he has not derived a proper remuneration from during the time he has occupied that land, the incoming tenant would gladly take it; the better the condition the land is in, the more money the landlord would let the farm for. I have lived long enough to put farms in a very good condition from being in a very bad one, and I should have been the gainer if I had paid a large sum, and had had the land given up in a better condition.

Would not that almost be saying that the law should relet the land, although at a higher rent?—No; the land is my property; I select my tenant and put a rent that is fair upon it; the law that I want is one to enact that a tenant shall not be dispossessed and have his private property left there for the benefit of another person.

Then you would have the law decide the whole question?—I would have the law merely to say, that at the end of the occupancy proper valuers should be called in to say what that man had done upon the farm, and which he has not had remuneration for; and the incoming tenant or the landlord should be bound to pay over a reasonable and fair sum, which a reasonable, and fair, and honest man should say he was entitled to.

Then if the law does not secure to the landlord an incoming tenant, the landlord would have to pay the compensation?—I never saw a fair landlord that could not get a tenant for his land.

At the same time there is an uncertainty about it?—Not at all.

You do not mean to say that the taking of land at an increased rent is a certainty?—No, not that taking land at an increased rent is a certainty; times may vary, and

a hundred things may alter the position of matters. When I took the farm I now occupy, I took it in a very poor state, inasmuch that the land, though it is called a good farm, did not grow the first three years more than 20 bushels of spring corn per acre. I took it of course at a less rental from being in such a bad state. At the end of my lease my landlord stepped in, and he certainly was pleased to compliment me; but he said, "You must pay a higher rent." "Very well, how much more?" "So and so." I said, "Very well, I shall take it;" and I shall be a better gainer, and be better able to pay a higher rent now the land is in condition, than I should be able to pay a low rent with the land out of condition.

Supposing that you had declined to give an increased rent, and the landlord would have had to pay you a compensation, he would then have to fish for a tenant?—He would not have much fishing for a tenant for a farm that is in good condition.

Then what is the difference between the two principles; you make the landlord directly liable for the improvement, with the prospect of the increased rental, that is, you make him liable to a payment; what is the difference between making a man liable to a payment, and making him liable to a deduction from his rent?—I think, on the one hand, it is but fair and common justice that I shall not be dispossessed of my property, that is, that I shall not be turned out of my farm at six months' notice without receiving some compensation for the good farming I have bestowed upon it; on the other hand, if I were a landlord I should be very sorry to have anybody interfere with the choice of my tenant, or the direction of my rental, that belongs to myself; the one is a public question, and the other is a private one.

Where is the distinction, or how do you establish a distinction, as regards the landlord?—If I understand the question rightly, it is meant to put the question in this way, that the legislature has as great a right to choose the landowner's tenant as the outgoing to get compensation from the incoming tenant. I think there is a monstrous difference; in the one case I should be willing, as a landlord, to pay the outgoing tenant, and in the other case, as an incoming tenant I should be willing to pay the landlord; but in the case of its being my own private property, no man has a right to say, I will choose your tenant, or fix your rental, or separate, as I think, the estate from the owner; on the other hand, too, if you suffer the land to be deteriorated and out of condition altogether, what does it pay for some years? it is just like a horse almost worked to death, it takes a monstrous time to get him fit for work again, and so it is with land out of condition.

Does not the difficulty arise here, that you assume that the capital has been laid out; if notice has been given to the landlord that the capital was to be laid out, would not it then be just, and only then just, that he should be rendered liable for the re-payment of it?—I would give the landlord notice of the improvements wanted to be done.

You wish to see a system established by which, after due notice to the landlord of the outlay of the capital, the tenant shall have the power to regain so much of that capital as is unexhausted in improvements?—Yes, exactly so.

Mr. HENLEY.] This land you have spoken of as being held on lives in Devonshire, is that any considerable portion of the county?—It is a good deal here and there scattered about; I know a case of a man the other day, a farmer in the western part of the county, that held some land under a noble lord; and his brother told me that the life being a lingering one on the farm, his neighbours lent him horses and ploughs to plough up all the land.

Was that land originally on three lives or one life?—Originally on three lives.

It is now under-let to the occupying tenant?—This is under-let, but it is the same with the leases; I let mine to under-tenants.

In those cases where the land is under-let, generally speaking, is the occupying tenant paying a highly increased rent for it?—No, he will not pay the rent that ought to be paid upon it, because of the uncertainty of the tenure, nor can he farm the land in the way it ought to be farmed, from not being entitled to any compensation when the life drops.

Then the committee are to understand that the lessees for lives are under-letting this property, without making any profit upon it?—I am letting some property now for a great deal less money than it would otherwise let for.

The question is, whether the land now held by lessees for lives, and under-let, is under-let by them at a greater or at a less rent than that which they are paying to the head landlord?—They are not paying to a head landlord at all, it is held for a life.

They pay something?—No, they pay no rent at all, they have held it 20 or 30 years.

Then if it had been granted for lives they must have paid a fine at the commencement?—Yes; they put in three lives; it is a very common plan in Devon; a nobleman has the power under the settlements to lease certain portions of his estate for three lives.

Then if this is granted for three lives, a fine having been paid at the commencement, there is no rent taken year by year?—None at all.

In your judgment, at the termination of those holdings who ought to pay the tenant-right?—The person who becomes the possessor of it at the end of the term.

That is to say, the landlord who has been receiving no rent at all for 20 to 30 years from the tenant, you would saddle with the payment of the tenant-right?—I would only saddle him with the part which the incoming tenant would fairly and justly be entitled to pay for. As to buildings, and all that sort of thing, I would only let him pay, having due notice to repair or erect a building at all, only a certain portion.

What certain portion should you think just to be paid by the fee-simple landlord, he having had no voice whatever, nor anything to do with the land during the three lives?—I would give him the same voice as other landlords.

But he has no voice by law?—I would give it to him.

You have stated yourself to be a disinterested witness?—Yes.

If all other parties were in the same position as you are, then you think they would have nothing to complain of?—Of course they would not, if they were in the same position as I am.

Your condition being that of holding under an agreement for 16 years?—Yes, with compensation at the end of the term.

Which was done by agreement between you and the landlord?—Yes.

In Devonshire, if the tenant of a Lady-day holding sows wheat at Michaelmas, on quitting the farm at Lady-day, is he entitled to receive anything for it by the custom of the country?—No, he does not sow it.

If he did sow it, he would be entitled to nothing?—Of course he would not do it.

That is the custom of Devonshire?—Yes, the incoming tenant steps in to sow unless there is a private agreement that the outgoing tenant do it by being paid for it.

Would not the same common law step in, that where a man sows he mows?—No, it is not the custom in Devonshire.

You are quite sure of that?—Yes.

Mr. COLVILLE.] On which side of Exeter do you live?—On the Plymouth side.

What is the ordinary course of farming in your part of Devonshire, not on your own farm?—It varies very much; it would take a great deal of time to describe it. There is a great deal of good farming in the neighbourhood of Exeter, and a very great deal of bad.

Is not the ordinary course of farming this, that they break up land, take as many white crops as they think proper, and let it lie down till the natural fertilities of the soil are restored?—It may be so in some isolated districts in Devonshire.

The manure becomes the property of the landlord?—Yes.

When the tenant leaves his farm?—No, where they are tenants-at-will from year to year, the tenant is subject to six months' notice; and whenever the six months' notice is given, there is an auction, and the tenant sells off everything.

He is allowed to sell the manure as well?—Yes, at least they do it.

According to the custom of Devonshire, are they allowed to sell any part of the produce off?—There is no agricultural custom existing scarcely in the county there; they vary so much it would take a great deal of trouble to define them.

Is not the custom that they are allowed to sell the reed, but not other straw?—By lease.

By agreement also?—Yes, by agreement, that is generally the case; they are not allowed to sell hay or straw, the covenants restrain them; but they sell reed.

Then the custom is, that a tenant when he is going out never sows wheat himself but by agreement; on the custom of the country the incoming tenant may make a breach for wheat?—By agreement; but not by the custom of the country.

Have you any custom as to machinery?—No.

Not as to thrashing machines?—None at all.

There is a great deal of cider made in Devonshire?—Yes.

Is there no custom as to cider presses?—Sometimes they are the property of the tenant and he takes them away; if not the property of the tenant, he leaves them.

Is the cider press considered a trade fixture or an agricultural fixture?—It is considered, I suppose, as a trading fixture, because it is just in this way, if the tenant puts it up, he takes it away; if it is the landlord's property, it remains there.

Then there is that distinction between a threshing machine and a cider press, that the tenant could take the cider press away, but not the threshing machine?—Yes; and if it is his own property, if he put up a threshing machine, he could take it away.

But it is a part of the freehold?—It is not a part of the freehold.

You say that you are a landlord as well as a tenant?—Yes, to a certain extent.

Will you say what form of agreement you give your tenants?—What little property I let was let previous to its coming into my possession, and it was let in the common ordinary course of agreements; there was nothing special about the matter.

You do not give your tenants security, though you say it is desirable that they should have it?—I wish the law to do it; and I am willing to grant a lease that would give security.

Are your lands let on lease or yearly tenancy?—On lease; and I would do it for this reason, that it would be beneficial to everybody, the community would derive one-third more produce.

Then is there any objection to giving a rider to the

present lease, to give security at the determination of it?—No; I am ready to do it.

Have you not a draining company in your neighbourhood?—Yes.

Do they not drain for the tenants where they have security; have they not some such clauses in their rules?—I do not know their rules.

Is it the fact that if the tenants have security, that this draining company will drain for them?—I do not know that they would, without being paid for it.

They would lend them money if they had security for it?—I do not know how that is.

Do you know any farms where security has been given?—Yes; very few.

You do know of some?—Yes.

Is not it the custom in Devonshire to let farms by tender?—Yes.

Do you know in any of those farms where security has been given, and they have been put up to tender, whether they have been let at more or less rent than previously?—I cannot say at the moment; I know where security is about to be given a tenant will take a place with very great avidity.

That is a great test of the advantage of security to the landlord?—I am quite satisfied if security of tenure were given, and compensation were given, the landlord would generally let the land for more money at the expiration of the lease; in the event of short leases, one half of the lease is taken up in improving, and the other half in injuring the land.

You cannot give any case where the landlord has given security, and at the expiration of the tenancy the farm has been put up to tender?—That practice being so new, I cannot speak to that.

Evidence of Mr. JEREMIAH SMITH.

CHAIRMAN.] You reside at Springfield Lodge, Rye, Sussex?—Yes.

You are a landowner and occupier of land?—Yes.

What is the size of your farm?—In occupation, upwards of 6,000 acres, and I own upwards of 1,300 acres; I occupy in the whole upwards of 6,000.

What is the usual time for giving up land for outgoing tenants in the Weald of Sussex?—Michaelmas.

What are the terms of arrangement between the outgoing and incoming tenant?—As to the notice of quitting?

As to the terms of valuing between the outgoing and incoming tenant?—We have a custom existing in our neighbourhood of full and half manures.

By the custom of the country, when is the outgoing tenant entitled to compensation for full manures?—The unexhausted manure on the farm, the manure that has not been used; that is termed full manure; but the manure which has been applied the year before, and from which various crops of different kinds, and of a fair nature have been taken, that is called half manure. The full manure will not have been applied to any crop at all?—No; that manure is exposed to view.

You mean by full manure the dung in the yard?—Yes; everything exposed upon the farm in the shape of manure is termed full manure.

Then is the half manure paid for equally, whether it has been applied to a crop of corn or to a crop of turnips?—No; the parties who are called in to adjust the compensation, value it as between outgoing and incoming tenants.

It is upon a different principle, whether the manure has been applied to green crops or white crops?—Yes; there is a difference whether it is purchased manure or manure made on the farm; those matters are taken into consideration by the valuers, and of course, the

nature of the crop taken from the soil; one crop would draw more largely upon the manure than another, and the gentlemen called in to judge of that, adjust the matter between the two tenants.

Do the valuers value the manure differently according as it has been made?—Of course; if this yard manure is made in a yard used for the fattening of cattle, the valuer will place a different price upon it from what he would do if it was merely a straw-yard in which the cattle had been fed upon straw only.

Can you state what is the difference of value between the worst kind of manure and the best?—I am not in the habit of valuing; I can form my own idea when I go over to take a farm; but I am not in the habit of striking a value. To say I do not know what the value is between the two, I should not say the truth; but that is not a portion of my business.

Would one load of oil-cake-made manure be worth two of mere straw?—Yes, I should say more than that; I should prefer one good load of rotten oil-cake manure to three of common straw manure, and I do not know whether I should not say to four of the other.

Are bones used in your neighbourhood?—Very little.

Is rape cake used?—Yes, and nitrate of soda, rags and guano.

Are they all allowed for?—Yes, according to their relative value as to the length of duration in the soil; for instance, rape cake is considered more lasting than guano, rags again longer than guano, and of course the gentlemen who come in to make the valuation are quite competent to judge what is right and fair between the outgoing and incoming tenant.

Are those valuations made easily without giving rise to much dispute?—There is no dispute at all.

What class of men are the valuers employed by the farmers generally?—Men of the first respectability.

Practical men?—Yes, practical men, men of the first respectability; they are men of character all of them.

They go by some general rule they have found suited to the neighbourhood?—They are practical men, and they of course vary with the times. Guano is of recent introduction, nitrate of soda has not been applied many years, but practical men soon learn the value of them on the different crops; when the gentlemen meet together they consult, and they soon ascertain the relative difference of one from the other, and in that ratio they charge to the outgoing tenant and incoming tenant.

Is chalk used in your neighbourhood?—No, not at all in my district; it is in the county 40 miles further down westward.

Is it compensated for?—I have no doubt of it; it is considered very lasting.

Has draining been found necessary in your neighbourhood?—Yes, and it has been done to a great extent.

Is that compensated for?—Yes, that is a point that every man knows, too, in valuing the giving compensation for draining, more than any other point almost; that I consider to be a matter very desirable.

What is the term of years generally given for draining?—I should say from 10 to 16 years; I should say the permanent draining; the opinion generally goes from 10 to 20, that is a vague opinion. My idea is that compensation ought to be given to 14 years for permanent drainage, one-fourteenth part to be deducted every year.

You have no compensation for building?—None; we consider that buildings erected on the estate become part of the fee of the estate; that is the common law of the land, and we know nothing to the contrary.

In some parts of the wealds of Sussex the buildings are not of the very best quality, are they?—In my district they are; as you get further west they are not so good; ours are generally in a very good condition, but

they are capable of much improvement. My opinion is, that buildings are things which ought most certainly to be encouraged to be erected, and which could be done by proper protection in this way, that if the landlord did not like to take the buildings he should allow the incoming tenant to take them, or the outgoing tenant to remove them.

What materials are they made of?—Brick and tile, and timber, with us.

As a very large occupier of land, should you say that good farm buildings are essential for improved farming by conducting to the thriving of the stock?—We cannot farm without; it is impossible to do so. I can only say that I have one estate which I took some years ago, which was without a stable or oasthouse, and I erected the whole of the buildings which were necessary, and ran the risk of what was to come after. I did that at an expense of £800.

You think, that though you considered it expedient to run that risk, it is a risk which you ought not to be compelled to run?—No, certainly not; I ought not to run the risk. If the landlords sent over their stewards, and were satisfied at the end of the term that the buildings were necessary, there would be no difficulty in adjusting the matter. If the buildings were left to the tenant to erect such as he thinks necessary, and he had the privilege of removing them at the end of the term, or yearly occupancy; if the landlord will not take them, let him offer them to the incoming tenant, and if he will not take them, let him have the privilege of taking them away, and there would be no fear of the tenant erecting unnecessary buildings; now, if he erects a building, he is at the mercy of the landlord.

You have described the system of giving compensation for various manures in your neighbourhood; has it a good effect upon the farming of your neighbourhood?—It has a very considerable effect; on those estates where this kind of understanding has been encouraged, they have been improved much faster than others where landlords have held aloof from the matter; there has been no such improvement; we could not compel our landlords to enforce this compensation where they have no objection to it; it is the custom of the neighbourhood, but there is no law to enforce it. There have been cases where confusion has been created; not very often, but it has been so.

But where the right is admitted, there is no confusion in adjusting it; but where the right is disputed, then that confusion is produced?—Yes, the landlord says, I know nothing but the law of the land, and if you get a tenant who says, "Well, I shall take no more than my landlord will take of me when I leave," there comes a difficulty.

Where the right is admitted by the landlord, and it is a mere matter of settlement between the outgoing and incoming tenant, it is perfectly easy?—Perfectly easy; there is not the slightest difficulty, and there the estate is improved considerably.

Can you speak positively as to the high state of cultivation that prevails in those cases in your district?—All the estates that have upheld this principle improve faster than the others.

And those estates are in a satisfactory state for the landlord and for the tenant?—Yes, and the rents have improved very considerably too; it must fall back into the fee of the land, the buildings, and the employment of manure; it must come to the entire benefit of the estate ultimately.

You can speak positively that not only the farming has been improved and the farmers have done well upon this system, but that the landlords have done well too by receiving an increase of rent?—Yes, most assuredly; in some instances almost double, and the tenant has thriven

too; wherever the tenant does well, the landlord does well; where the landlord is disposed to grind, the tenant does not well, nor the landlord; the more liberally the tenant is treated the more confidence he has; and if there was a law so that there should be do difficulty in quitting, the district would improve much more than it has done, though it has improved so largely.

If you heard that any landlords were apprehensive that their tenants under compensation would put too much manure into their land, and saddle the properties with high and speculative charges, should you consider that apprehension a visionary one, speaking from your experience?—So far as manure is concerned no man can ever dream of such a thing.

You have never heard any landlords complaining of undue and extravagant expenditure of capital on the part of the tenants?—No, I have heard the other side a thousand times.

You have chiefly heard the landlords complain that the tenants have not expended enough?—Yes; where the custom of the country is upheld we find they get a better class of tenants and that greater improvements are made.

Mr. NEWDEGATE.] You have been speaking of customs; do they prevail only in certain districts?—They prevail in our neighbourhood to the extent of 40 miles.

They do not have the force of law?—None whatever, that I know of; that is what we are seeking; it is the want of the force of law that creates the difficulty; we have no law, we have a custom that honourable landlords uphold, but if you get a landlord not disposed to uphold that honourable understanding, the law is dead against you.

Then the custom is not sufficiently acknowledged to have the force of law?—No, not at all; when you go into a court the law is against you.

You spoke of draining, and you proposed to spread the compensation which you think should be given for the draining over fourteen years?—Yes.

What would be the prime cost of the draining, that is, the original outlay for draining?—That would depend upon what materials you use, whether first, second, third, or fourth class of tiles, and what depth you are going to, whether three, four, or five feet.

Would the average cost be about £4 an acre?—It depends upon the thickness you lay them; I have some land I have drained 20 feet apart.

What would be the cost there?—Our cultivation is a little different from many counties; we have a great many hops, and we do it thickly; we look at what it will cost us a rod.

How many years does it take to remunerate you for the draining that you have described in your hop ground?—Fourteen years, deducting one fourteenth part every year, and at the end of the fourteen years it becomes the property of the landlord.

How long does it take to compensate you in the value of the crops?—I say fourteen years; I am ready to give up one fourteenth part every year, and at the end of the term the permanent draining would sink into the hands of the landlord.

The committee have had a great deal of evidence as to draining, and generally the term which will compensate the tenants has been placed at seven years. In the case of a hop garden, that is perhaps the most valuable of all land, if it is worth while draining, do you not conceive that the tenant is paid for draining that land in less than fourteen years?—I apprehend that the terms now spoken of, of seven years, would be where the landlord finds the tiles and the tenant finds labour. At the end of seven years I should be compensated for my labour, but not for my labour and the tiles too.

This draining I speak of would stand as sound at the end of 30 or 40 years as it would at the end of fourteen years, and be nearly of the same service to the soil.

You have mistaken the question; the question was not for how many years the draining would stand good, but in how many crops the tenant would be repaid the capital he laid out in draining?—I say fourteen years.

Mr. HENLEY.] The committee are not to understand that there is any custom, but that it is a private agreement between landlord and tenant, by which those payments take place?—There is no private arrangement in particular; it is a generally understood thing in the neighbourhood that such a custom exists.

Which is not capable of being enforced except by custom?—No.

Will you inform the committee what are the customs that can be enforced; who does the manure belong to upon the farm?—To the tenant.

If a tenant goes away and the farm is not relet, what can the tenant do with that manure?—Nothing at all; he cannot take it off; it must remain then the landlord's property.

Would it remain without being paid for?—If the landlord chose to take it.

Then it is not the tenant's property?—Yes, it is, because the landlord has permitted him to take it and pay for it; he cannot, however, remove it. Again, there is the evil with respect to admitting tenants; the landlord makes his choice of his tenant, when the outgoing tenant is leaving; and it may be that the incoming tenant, at the commencement of the term, when he pays yearly, is not in a position to pay the compensation; I have made my arrangements perhaps with the property of my produce, which I am to receive from this farm, to go and take another; but, perhaps, from the default of the person not paying me, I cannot fulfil my agreement; he goes back in his rent, and the landlord says, "I will have my rent;" and he distrains for the rent and leaves me, in order to obtain my money from the incoming tenant, to follow him in course of law, to recover his incoming and my outgoing amount; that is a very offensive and annoying thing; that happens, however, occasionally, though not very often.

That is a case that has occurred where the landlord has not interfered between the two tenants?—Yes, where the landlord will not acknowledge anything of the kind, where the landlord chooses his own tenant, and he will not interfere with the custom.

Is there any custom between the outgoing and incoming tenant in your neighbourhood at all than can be enforced by law?—None that I am aware of.

What is the custom with regard to acts of husbandry; what is the holding?—Michaelmas.

Is there any act of husbandry with regard to turnips, for instance?—Ours is not a turnip district; we have a custom so far, that we get the ploughings, the sowings of the seed, and the dressings, which are taken in the enumeration of the valuation from the outgoing to the incoming tenant.

By law, if a tenant was to work his fallows, and sow grass seeds, and do various other acts of husbandry upon the farm, and went away at Michaelmas, he would have no claim by law upon the incoming tenant?—I am not a lawyer, but I believe there is no claim by law; but I have very little doubt we should get it given by a jury of the country, and we should show that we have the common understanding; that of course is a very litigious and very expensive process, and it is a position we ought not to be placed in; we only ask for a just right for our property; I contend, and know it from experience, that the landlord's property is benefited by our exertion and expenditure.

If a jury would give this matter upon the custom, though it is not the written law, it has the same effect as law?—Why should we be placed in a position to appeal to a court for common justice?

Go step by step; you were understood to say that there is a custom?—Yes.

Then upon subsequent examination you say that custom is only by a sort of tolerance of the landlord, and now you say it would be enforced by a jury?—In case you get a landlord not disposed to acknowledge the custom, and a corresponding incoming tenant disposed to give all the annoyance he can, your only resource is an appeal to a jury.

Then if a jury would sustain the custom, it shows that that custom has the force of law, and therefore for all practical purposes it is the same as law?—It is so; that is the sense of the country; but by law we cannot carry into effect the sense of the country, and we cannot get our rights without being placed in an improper position, and at great expense.

Do you know whether there have been any cases in which this payment for manure has been enforced in a court of law?—No; it has generally been settled by arbitration.

If a person would not consent to have it arbitrated upon, do you know what the course would be then?—Some two or three years back there were some cases.

Where the parties recovered?—No; for the last ten years there has been nothing of the sort attempted in court; it has been generally referred to arbitration. There was a case in my neighbourhood this last year, in which the incoming tenant objected, and the landlord would not interfere, and the matter stood over three or four months; and it was at last left to a reference, and they adjusted it.

The arbitrator would have only to ascertain the amount?—Pardon me; they ascertained what the amount and value is in the property that the tenant ought honestly to pay.

That would be as to the amount; but whether he had a right to pay anything is another question?—That is the question; I am not a lawyer.

With regard to those cases you spoke of as occurring ten years ago, and which went through a court of law, if something was recovered there, that would establish the custom?—They did recover in those particular cases, as far as it went; but they got only a portion.

That was as to the amount?—Yes, as to the amount.

Do you know what was established by that decision?—No, it was not a matter that I was interested in; I know they took up some 6 or 12 months, and of course there was a great deal of moving about from place to place, and it was some time before the thing was brought to an issue.

If the thing had been recovered by law, that would have established the custom?—Yes; they only established certain points. I cannot say what points have been established. I can only speak of the question that took place in one of the parishes in which I was an owner and occupier last year; the party would have had recourse to law then, but the thing was better understood, and they called in parties to arbitrate to prevent going into court.

Then is it the duty of the arbitrator to say what is the amount or what things are to be paid for?—Those things which are to be paid for, and the amount.

Both one and the other?—Yes, both one and the other.

Both to settle the custom and the amount to be paid under the custom?—Yes.

That was settled by the consent of both parties?—Yes, after a great deal of correspondence and difficulty.

To prevent the going to law?—Yes.

You have told us that you took a farm without buildings upon it, and put up buildings; was it a farm taken under lease?—Yes.

And being destitute of buildings, was it taken at a low rent?—It was taken at the full rent of the period.

Was the farm in a good or bad condition?—In a bad condition; I expended £50 an acre to reclaim some of it.

What was the nature of the reclamation?—Draining and grubbing bogs.

And at the cost of £50 an acre for draining?—Yes, and clearing and grubbing.

What was there upon it to be grubbed?—Wood, and what is generally in bogs.

Timber or underwood?—Brushwood.

What was the value of the brushwood?—Not a farthing.

And £50 an acre was expended in reclaiming that land?—Yes, and rather more.

What is the value of the land now, speaking of the land that you laid out £50 an acre upon in reclaiming; what is the value of that land now to let per acre?—Between £2 and £3.

Fifty shillings, or under fifty shillings?—I can answer the question; it is over 50s. I am the present tenant.

You say it was planted with hops?—Yes, the following year.

Is the planting of hops included in the £50?—No, it had nothing to do with the expense of planting the hops.

What was the land worth before you planted the hops after it was reclaimed to let, per acre; that is, after your expenditure, before you planted any crop upon it, what was it worth to a tenant per acre to rent?—I should say 50s.

What is the nature of the soil?—It is a fine deep loam.

Is it titheable?—Yes.

There is a tithe to be paid in addition to the 50s.?—Yes, there is a tithe of more than £1 an acre.

That would be £3 10s.?—Yes.

What rent did you pay for that land before you began to lay out the £50 upon it?—I took it in common with the farm.

How much an acre; did you value it at anything?—No; it was not worth anything.

It was thrown in with the rest?—Of course it was my business and my occupation. I valued it at nothing; it was worth nothing; in fact, it was an incumbrance to the estate; the brushwood was 13 or 14 years old, and not worth a farthing; I put it all into the first tier of drains. It was charged to the rates and to the common charges of the parish, and of course it was open to a certain degree of tithe, and I put the whole into cultivation. It was a nuisance to me when I took it; there were all those charges upon it in common with the rest.

You say it was liable to certain payment of tithe?—Yes, a very small tithe indeed was put upon it.

If it was only liable to a small tithe; the parson only had a tenth?—That was a matter of agreement.

He is only entitled by law to a tenth?—Yes.

If the parson's tenth was worth something, the remaining nine-tenths was worth something to somebody else?—No, you do not understand me. I say it was liable in common with the rest of the farm; there it was; there was a certain plot of land, and it was all taken into consideration as regards the rates and tithes of the parish; it was worth nothing to me, I know nothing of what they put upon it; there was so much put upon the farm in common.

Your answer was or your statement was, that it would pay something in titles?—It was liable; it could pay nothing, because there was nothing grown upon it.

There was wood upon it?—It was worth nothing, but merely the chopping off; it was impoverished with wet and overrun with grass.

It is worth 50s. an acre per year now, £50 an acre having been expended upon it?—Yes.

In how many years do you expect to be repaid for that?—I have been paid for it years ago.

By planting hops?—By my mode of cultivation, which was planting hops.

How long have you held the land?—Fifteen or 16 years.

Have you had any claim upon the landlord for anything?—No, the draining and everything is sunk into the estate, and the landlord has got the benefit of it; we have agreed upon the marsh land, and the buildings are all sunk into the land, and I am paying an increased rent, and I have given up all my buildings, and I did it only from the encouragement of cultivation, because my hands should not be tied; that farm produces three times what it did 15 years ago, and I am employing six times the number of hands. I pay an increased rent, and I have been well remunerated.

Is there much land capable of being made worth 50s. an acre now lying waste in your neighbourhood?—No; ours is a very splendid district; there has been a great deal of land reclaimed that has been worth little or nothing; it has become much improved.

Is there much land in the neighbourhood that you are acquainted with, upon which it could be necessary under any circumstances to lay out a greater amount than £50 an acre?—No, that is an extreme case.

That being so, you having as a good tenant been willing to lay out that money upon a 16 years' lease, have been repaid many years ago?—Yes, several years, on that particular outlay on that particular spot.

If it has been so satisfactory to you upon that mode of private agreement, why could not it be extended to other parties?—It is the only thing wished for, that there should be a protection given, so that the tenants could be satisfied that they would be remunerated when they left the farm; if they did not have a lease, which is a further stimulus, though not a sufficient stimulus, then I have no doubt large improvements would go on.

You were satisfied to lay out this extreme expenditure upon a lease?—Yes, I could see my way clear that it would repay me for what I have laid out; it was a speculation I took up, and it answered my purpose.

Being an extreme case, why should not other parties be as well capable of guarding themselves in outlaying their capital as you have been in outlaying yours?—The nature of our occupation is by the year generally.

If parties choose to take leases, and the landlords choose to grant leases, the tenant could be protected, and the landlord could give him the protection necessary?—The landlords in our district are not disposed to give leases; this is the only occupation that I am now alluding to.

The reason is, that the landlords are not willing to grant the leases; not that it would not secure the tenant if they chose to do it?—It would not secure the tenant unless they made a special agreement.

If they chose to make a special agreement, he could do it?—Of course he could; but as the law stands, I may say very few men would be mad enough to go to the expense of laying out their capital.

Can you point out to the committee any advantage, and if any, what advantage there is that would exist by legislation, over private agreements?—I am quite convinced in my own mind that if the law of the land only

gave a just and fair remuneration from the outgoing to the incoming tenant, to be adjusted by respectable people in the district, that the under-draining and the general improvement of the county; so far as additional manure and various other matters of that kind are concerned, a very large quantity of labourers would be employed upon the property, and larger produce would be taken from the soil; there would be a very great improvement going on; no man can tell the extent it would go to. I admit that where we are living upon estates, and where the farms are held with confidence, and where there is a good understanding between the parties, there the improvements are going on, and the produce does increase; if it became the law of the land, the improvements would go on at a very rapid rate.

Can you point out to the Committee any advantage, and if any, what advantage there is that would exist by legislation over private agreements?—I consider that legislation then does away with all confidence as to any particular acts of A. and B. It is the common law of the land, and every man has the law to look to; if he knows he has protection in laying out his property, it becomes an A B C thing.

You would have no more protection then than there is now, where an agreement is made?—There are no agreements; our general letting is a yearly occupancy; there are no special agreements.

If there were special agreements the tenant would be as well protected as by law?—No, I should say not.

Why not?—Because you get one landlord disposed perhaps to grant them and to go into these agreements, and another will not, hence there comes a stopper to improvements; but if it was the law of the land, the general improvements would go on.

That only applies to cases where there is no agreement; my question to you is, where there is an agreement why could not the tenant be as well protected?—You cannot get all landlords to grant an agreement; I want the land to be going on improving simultaneously.

In your opinion should the law supersede private agreements?—The way I should answer that question is this: if the law of the land was that a man should be compensated for what there is upon his property, which shall be decided to be an improvement, and shall be beneficial to the estate, by impartial people, then it is much better for the common law to admit that it does away with any difficulty of making any private arrangement whatever, and then there can be no difficulty if I throw myself into the hands of an indifferent person; I can have no advantage nor have a right to take advantage of my landlord, nor can he take advantage of me, if he throws himself into another man's hands; that is the fairest way; and the opener it is left the more generously and liberally people will be treated.

Those dilapidations on the farm are to be a set-off against the improvements?—Yes; they ought to be fairly taken into consideration, and no honest tenant would object to that. That ought to come in in the question in regard to the buildings. Of course the question of dilapidations would come as an off-set in the case of the buildings; any permanent buildings a tenant places up, the dilapidations would be a deduction against them; in the same way it would apply in striking the valuation for crops and manure most assuredly; no tenant should be allowed to outrun a farm unfairly and unjustly.

Should the amount be ascertained by the capital expended by the outgoing tenant, or the advantage to the incoming tenant; that is, should the principle of payment be the capital expended by the outgoing tenant, or the advantage to be derived by the incoming tenant?

—You cannot tax the incoming tenant for what there is not in or upon the soil, but what there is before the eyes of the valuers they will put their price upon, and then in striking value they will consider what the outgoing tenant has taken the crop from; they can only judge by the expenditure the outgoing tenant has been put to, and then they will make their deductions and draw the balance of what the incoming tenant is to pay.

Should the incoming tenant pay for any capital expended upon the land from which he would derive no benefit?—Certainly not; the incoming tenant should not be taxed for anything the outgoing tenant has paid, from which he, the incoming tenant, would derive no benefit.

Then the principle would be the value to the incoming tenant, and not the amount of capital expended by the outgoing tenant?—He would have to pay nothing for that which he did not receive a benefit from, but which the outgoing tenant had derived the benefit from. As to the half manure, he would pay what was shown to be right, according to how much of that manure still remained in the land unexhausted, and according to the idea of the valuers, who would say what they thought to be right and fair for the incoming tenant to pay; that is, his proportion where the manure was capable of producing another good crop; he ought to pay for it.

You say that drainage ought not to be considered exhausted in less than 14 years?—Our permanent draining would stand 30 or 40 years.

You have stated that the tenant who drains land should not be entitled to receive payment after 14 years?—No; I said if the tenant finds the tiles, and does all the labour, and parts with all his money, he should take off one-fourteenth part each year, and at the end of 14 years it should become the landlord's.

After 14 years he would be entitled to receive nothing?—No.

Upon what principle do you come to that conclusion?—Because the tenant would have been fairly compensated.

How do you calculate the tenant's compensation?—I am sure I do not know, except by experience.

You say you have arrived at that conclusion; you must have had some ground of calculation?—My experience has told me that at the end of 14 years the tenant would be compensated for his outlay.

Do you calculate it by a certain per-centage upon the capital, or a sort of sinking fund to repay the capital?—If you place a tenant in possession for 14 years he will get crops in those 14 years which will compensate him.

If in the judgment of the valuer the improvement of the crops in seven years gave the tenant a fair trading interest upon his capital (and a sinking fund to replace his capital), would not his interest be at an end?—If the question is left open, of course; the mode of draining varies very much; I am speaking of the most permanent draining we have in the district; we have other draining, that at the end of seven years would be a compensation; and when the valuers go over the estates, of course they are very minute and careful in ascertaining in what mode the drainage has been done, and then, from the expenditure and nature of the draining, they can come to a fair conclusion of what the incoming tenant or landlord ought to pay.

In no case does it run longer than 14 years?—No, I am speaking of the best and most costly drainage.

You have stated that the incoming tenant ought to pay for everything he derived an advantage from?—Certainly.

Permanent drainage, executed in the best manner, is

of considerable advantage beyond the 14 years?—Yes, it would be an advantage for 30 years.

Why is not the incoming tenant, upon that principle, to pay for it?—Because the tenant would be compensated in the 14 years, and therefore it would not be right or just for a tenant to ask the owner of an estate, or to expect anything beyond the time he is compensated.

Supposing the outgoing tenant to get his money back, he has no claim upon anybody after that period, be it seven or fourteen years?—No.

That would be the principle on which you think the valuers ought to act?—Yes, and I think they do act upon it.

That would be rather in contradiction to the principle spoken of before, the benefit to the incoming tenant?—Not at all, I think.

You were understood to say, you thought the principle of valuation was the benefit to be derived by the incoming tenant?—It depends upon the sort of draining. With regard to 14 years, I said, I think, at the end of seven the tenant would have sunk half the draining, and the incoming tenant would pay them for the other half of it; at the end of the second seven years he would have reaped as much benefit from it as I should have done, and at the third seven years he would have reaped a much greater benefit; the benefit does not cease at the end of the 14 years because the deduction ceases then.

Then the man who comes in at the end of the 14 years reaps a benefit and pays nothing for it?—Yes, and pays nothing for it.

The incoming tenant reaps a benefit and pays nothing?—Yes. The landlord would send his steward over to look at the estate, and see the condition of it. Suppose I have had a 14 years' lease, and my capital is out at the end of 14 years, the steward would then come over and look at the estate.

And the landlord would then get more rent?—Yes, and very fairly too. I do not object to that, nor to the outlay after we have had a fair and just return for our capital.

If you had a fair return for the capital you have expended, it is perfectly reasonable that then the landowner should reap the benefit?—Yes, it is the interest of the landlord and the tenant, and if they do not go on hand in hand together they can neither of them thrive.

And you cannot give any certain knowledge of the custom except as you have told us?—Nothing beyond that we have no difficulty with landlords well disposed to the thing. I could name an instance in one of the parishes where the landlord did not choose to interfere because he did not understand the nature of it; he had not a steward; and he would not interfere; he was a very good gentleman, but he did not know anything of it; the incoming tenant was one of those rather twisty ones, and it caused difficulty.

You complain that in some cases you have known tenants permitted by the landlords to enter farms who could not pay or would not pay the valuation?—There are such cases, but they are very rare; I look upon the hardship of that.

How would you propose to remedy that?—I would propose that the tenant should be allowed to hold over until the incoming tenant has paid, or the landlord has interfered and compelled the incoming tenant to pay. If I held over a day, I presume I should be liable to be seized for my rent, and then there would be two tenants, and the incoming tenant come and takes possession, and says I will pay you to-morrow or next week, and all those kind of things. I contend that

the outgoing tenant should have the privilege of holding over until he is reimbursed all the valuation.

If your view was adopted, that the outgoing tenant should have the privilege of holding over, who is to cultivate the farm?—Then it would become the interest of the incoming tenant and the landlord to interfere; the parties would be all interested, and the incoming tenant and the landlord more particularly; that would soon bring about an adjustment.

If the outgoing tenant is to hold on, do you mean that he is to hold on and prevent the parties cultivating the farm?—Yes, until the matter is adjusted.

But not to cultivate it himself?—No, if the farm is let to a new tenant he cannot cultivate, he could only hold possession till he got his demand paid him which he is entitled to, and the landlord would feel it is interest to see that the incoming tenant does settle with the outgoing tenant.

If he holds possession, of course the other man could do nothing with the land?—Certainly not.

That is what you mean?—Yes; and keep him out entirely till it was paid.

It would be a complete alteration of the holding of the land?—It would give a right to the tenant to enforce his claim, or to hold until he got his right claim, and until that claim was fairly adjusted, give him the right of holding possession of the property, because now the landlord may be quietly looking on, and the incoming tenant giving the outgoing tenant all the annoyance he could. If I had the power to hold over, it would be the interest of the landlord to see that my accounts were adjusted and settled.

You cannot make the valuation till the completion of the tenancy?—No, not until the 11th of October. Generally about Michaelmas time there are a great many changes, and of course the valuers fix their times, the parties are engaged in the district, and they may come a day or two before, or it is arranged that they shall come a day or two after; that is made a matter of mutual arrangement between the parties; we do not get to this difficulty till the inventory of the stock is taken, and the day of payment comes; then comes the difficulty.

Would you give the outgoing tenant the power of holding on till the valuers had agreed what was to be paid, and in fact till the money was paid?—Yes; and then the landlord would see to the incoming tenant, or direct his steward to see the matter adjusted, that the farm may not stand still.

If the landlord has the power to recover the rent of the tenant, what consequence is it to him whether the farm is cultivated or not?—If the farm remains uncultivated he may distrain, unless there is nothing left to distrain upon.

Then the thing would be at an end?—Yes; it would not be very convenient to me as a landlord; that of course is a state of things that could not exist.

Your view is, that the outgoing tenant should be allowed to hold on, not to cultivate the farm till he got his money?—Yes, it is so.

That would be your opinion?—Yes; and I am quite satisfied that it would work well for the landowner as well as the tenant, because the landlord would take care that the incoming tenants were parties that could pay, and not wishing to take up the land to give any annoyance; that I am quite convinced of.

Which you think would be likely to take place under other circumstances?—No doubt about it at all; it would keep out a class of people that are an annoyance to society; it would shut out dishonest men, or men who were disposed to quibble.

Mr. T. EGERTON.] Who are the valuers chiefly employed, you speak of them as persons well informed on

the subject of manure; are they in your part of the country farmers themselves?—Yes, to a great extent, and men of standing, and character, and property. I think with the class of gentlemen I am alluding to we have not a man that is not of the highest respectability as a yeoman.

They are paid for it?—Yes.

When you entered upon the farm you have spoken of, had you payments to make to the outgoing tenant?—Yes, upon all my occupations; I have not a single foot that I did not pay for, and I am asking no more than I have paid for my land.

What did it amount to per acre?—It depends upon the amount of hops.

In the case which you have stated of the farm which you took, what did it cost you?—That was 15 or 16 years ago; I could not say at all; I can say one thing, that it would come to a great deal more now, ten times the amount.

CHAIRMAN.] Have you any doubt that it is cheaper for a tenant to pay a reasonable compensation for improvements than to take to a farm that is starved to death, and bring it round himself?—If any tenant takes a farm out of condition, it would take him three or four or five years to bring it round to a paying condition at all with us; in the hop district it would take even longer. I am convinced that it is the interest of the tenant to pay a fair compensation for what is in the soil, to be adjusted by responsible gentlemen; and it is the greatest interest to the landowners themselves, who are the most interested, and their estates would improve, and nothing could prevent it.

You speak from the experience of your neighbourhood, that the estates have been improved under this system, and the landlords have received increased rent?—Yes, the production is increased wonderfully, and the labour also to a large extent; and the rent has increased in the same ratio.

Mr. NEWDEGATE.] You misunderstand a former question which was put to you when you said the compensation for draining was for 14 years; you did not allude to such an instance as this hop ground which you reclaimed; you said you reclaimed it 14 years ago, and had long since been compensated for that improvement; therefore you were compensated in less time than the 14 years?—The very particular spot you allude to I drained in three tiers of draining, at great cost.

Then is that expense included?—That of course is an uncommon thing; that is an unusual thing, and has nothing to do with the common rate of farming. It was bog land, and I laid three different tiers of drains; the last tier I laid at the common depth of two feet six inches, and will remain for ever, or at least it may do.

Then you were compensated for that within the period of 14 years?—Yes, because you must understand, that was for the cultivation of hops; and being for hops expressly, it made me a return, it happening to be a fortunate spot, quicker than in the ordinary time; it is not an ordinary case of draining at all. I merely put that as a case to show that there are gentlemen in our district, if they could have a law giving them a certainty of being fairly dealt with, who are disposed to lay out even £50 an acre in reclaiming the ground.

Your idea of what is desirable, is that some general enactment should supersede all private agreements?—My opinion is, that there ought to be some general enactment by which parties could be governed, without going to ask Mr. A. or B. whether he would do this or that; there should be a general law of the land to say what is right to be done, and as the tenant pays for those things to give him what he pays

for, and to say what he has to pay for when he leaves; I go to Mr. A., he may say, "Go on;" but Mr. B. may say, "If you do not like it leave it."

You wish a general law to regulate this matter, totally apart from and independent of all agreements?—Yes, I am satisfied that as soon as it has passed into a law, every landlord, when he sees the working of it, will introduce it generally.

Mr. T. EGERTON.] In that, do you mean with or without notice, in respect to those improvements; that a farmer should be bound to give notice or not?—As far as the permanent improvement of buildings, and permanent draining, and the employment of manure goes, to give notice to the landlord; but in the event of the landlord's sending his steward and saying "I will not allow it," then the tenant ought to be fairly remunerated.

That is in fact without notice?—Yes.

Then your answer comes to this, that it should be done without notice?—Yes, I should say so.

Mr. HENLEY.] Were you to be understood that you drained one piece of land three times?—Yes, three tiers deep.

Was it done at one and the same time?—As quick as we could drain the lower water and fill the land up; it was at three different depths; the first was as deep as this room.

Mr. T. EGERTON.] Was it with pipes?—With tiles. With soles?—Yes, with soles.

CHAIRMAN.] That piece of land which has been dwelt upon so much, was an extraordinary good piece of land; it was deep loam though in such a bad state?—Yes, it was a fine piece of land, there was no end to it; it was of the finest quality, and from seeing the state of the soil I was quite convinced that there would be no end to its productiveness, and so it has proved.

The Evidence of Mr. GEORGE HARRIETT.

CHAIRMAN.] You reside at Basingstoke, in Hampshire?—I do, in its immediate vicinity, at North Waltham.

What is your profession?—I occupy a small portion of land of my own. I attend only to agricultural pursuits.

What is the usual time of giving up farms in Hampshire?—At Michaelmas.

What does the incoming tenant pay the outgoing tenant for?—Not a sixpenny piece. The custom is generally that when a lease is nearly expired, say this next Michaelmas, the new tenant would have access some time before Lady-day; he would come on to prepare his turnip crop; he would prepare for that crop, and have about June or July a certain portion of land to enter upon to prepare his wheat season; there is nothing else he would be permitted to do until after harvest; he would first come to prepare his fallow for the ensuing year, and for the wheats a short time before Michaelmas.

Does the dung belong to the landlord or the outgoing tenant?—To the landlord; in fact there is not a single thing the outgoing tenant can claim; he would feed the stock next year on the hay and straw grown the last year of his tenancy, but he cannot dispose of it; he may keep the incoming tenant out, and say, I will have the yards and fodder myself, and consume the hay; the incoming tenant has no claim to one ton of hay unless he purchases it by agreement; he can never enforce it; in fact if there is a squabble between the two, the incoming tenant is in an awkward position.

The outgoing tenant, if he chooses, may spend the hay; he cannot sell it?—He spends the hay. The custom is so vague, that I know an extensive farm where

there are 200 tons of hay that the outgoing tenant does sell, and the incoming tenant must buy hay; there is a great portion of hay belonging to the old tenant still to sell; he left at Michaelmas twelvemonth; it is a large farm of a gentleman lately dead.

Would it be desirable to give compensation to the outgoing farmer for various heads of improvement?—I do not think there is a question about it, as regards the benefit to the outgoing tenant and the incoming tenant, and more particularly to the landlord, and decidedly to the public at large, for this reason, as soon as agriculture could be brought into the same position as almost every other business is, there is a great desire on the part of the tenantry to farm up to the last moment as well as they have hitherto done, if they could but be assured that the outgoing tenant would be paid for unexhausted improvements; knowing that they could not then withdraw it themselves, and that the outgoing tenant would be paid for it, the effect of that would be that they would farm well to the very last moment.

Is chalking beneficial in any part of your neighbourhood?—I consider it on a great portion of our land superior in its ultimate effect to dung; many of our sour clays are more benefited in the tillages; it is only to pay for the chalk, and it is a great advantage in the ploughings. In fact, I have heard carters say they could find it out where there has been a list of land not chalked; if they were ploughing in the dark they would know when they came into the track; it pulverizes and separates the tenacious soil, and it works cleaner in every way and better.

Basingstoke is near a very wide district of chalk?—A great deal of it is all chalk; we have chalk even where we have a great depth of land. I have sunk several wells, and in gravelly bottoms, below which there is chalk; and in clay the same.

Is there a large proportion of this wide district of Hampshire that would be improved if the surface were dressed with chalk?—A great portion of the clays are materially benefited by it; there is also a gravel which is of that sort that it will run together and get hard and callous, on which we find the chalk valuable; where the land is in its nature chalky, of course the chalking is not so beneficial.

Is it your opinion that if the Hampshire farmers had compensation for chalking their land, they would be likely to do so?—To a great extent I have no doubt they would; generally speaking I should say so.

Would this lead to a great increase of employment for the labourers?—Very much so; I have frequently chalked expressly for the labourers; you can get it done at 25s. an acre; I have had it done at 20s.

Does not it generally cost between £2 and £3?—No, from 25s. to 30s.; it has not exceeded that in our neighbourhood for years; we frequently get the chalk at two feet depth.

On many parts of the range you have to go to the depth of 30 or 40 feet, have you not?—No, not one instance where chalking is carried on; it is not in one instance in 100; I never knew but one, and the party said it would not pay, they must go so far down for it, and they opened another place for it.

You are not acquainted with those parts of Hampshire where they sink a well 30 or 40 feet deep to get to this chalk; nor whether that does cost 56s. an acre?—No; when I first went into the county £2 was given; it will pay to put on any of your labourers to chalk land.

There is not much drainage required in your neighbourhood?—None, not in the immediate neighbourhood; there is in the Woodlands, where the Duke of Wellington lives; in that district he and Mr. Chute are draining extensively.

Is there a considerable extent of land there that would

be benefited by draining?—Yes, the whole district called Woodlands, lying between Reading and Basingstoke, is very extensive, very heavy strong wet land.

In such a year as this is the wheat suffering much for want of draining?—Yes, I have heard persons say they are suffering very much where the land is not drained.

To what extent an acre should you say?—I cannot say; I have heard as a general observation, that the Woodland wheats were looking bad.

And there you think if the tenants had compensation for improvements they would be likely to employ the labourers in draining?—Yes, and no doubt Mr. Chute and his Grace are meeting their tenants in that way.

Some of the tenants you think are anxious to drain?—Yes.

Are you acquainted with the south of Hampshire?—Not much.

Have you any other remark to make to the committee?—Only as regards the feelings of the tenantry generally. Holding the situation of chairman of the Basingstoke Agricultural Protection Society, it is frequently mooted as matter of conversation, and the feeling most assuredly is, with the largest holders of land, that the protection of a lease is required, with a covenant which would entitle them to compensation at the end of the term for all improvements that the incoming tenant would be benefited by; there is nothing more simple that the insertion of such a covenant, as the incoming tenant would receive the advantage of the unexhausted improvements.

You mean that if a tenant had laid out his money foolishly, that then the incoming tenant should not be called upon to pay for that?—Most assuredly he should not.

With the means you have of knowing the feelings of the Hampshire farmers, are you prepared to state to the committee that they wish for a recognition of tenant-right, and the protection which tenant-right would give to their capital?—Most completely so; in fact there have been lately some exchanges of land that show the want of such a principle. There is one instance I know, where a farm has been held upon three different terms, and been in the family thirty years, and the landlord dying at an advanced age, the property has come to another branch of the family, and the tenant not doubting that he should have a renewal of his lease upon as equitable terms as under his old landlord, farmed high to the last; he is now asked by the new landlord to give a very exorbitant advance (having been, he and his father, upon it 30 years); he said, "No, I cannot afford to give £200 increased rent;" he offered £100: but whether he is right or not is a matter of indifference to the principle; he is now almost in the position of a six-months' tenancy, and he is not able to avail himself of that which we know is customary for tenants, that is, to take as much out of the land the last two years as he can fairly and legally, to compensate himself for that outlay which he would not receive in any other shape; consequently he is placed in a position to say, "I must do what I can this year." That only shows the state that tenants are in when they are compelled to do that in order to protect themselves, by means that are injurious to themselves, the landlord, to the land, to the incoming tenant, and to the public at large.

Are you of opinion that the body of Hampshire farmers are not only desirous of this protection being given to them by the Legislature, but that if they obtained this protection for their capital, they would make a greater outlay of money, and would thereby benefit the condition of the agricultural labourer?—I will state an instance as to this particularly: I am farming my own land. I have said to others, "Why not do so and so? I have doubled my sheep; where I formerly carried one I have

two now, and I have increased my stock, and I am a seller of hay largely, and I have such and such increase in my corn crops." "Aye, but you are holding your own land; you receive all the benefit. I must be mad to do it as a tenant; fifty things may arise; I am a tenant-at-will, or unless it was at a very early part of my lease I could not do it." Only within this week a person who has done well as a tenant and bought property, said, "You and I can do this upon our own holdings, but I cannot do it upon that which I am a tenant of, for this very year I have received notice to quit upon a farm that I expected to have held for many years to come."

You say you have increased the productiveness of your own land; what means have you adopted for that?—I formerly farmed on the four-field system; about seven years ago I was induced to try the six-field system, and since that time, by my keeping more stock on oil-cake, &c., there has been a greater productiveness of the soil? On giving you the particulars you will see what it is: a good fallow for turnips, then barley, grass, the third year oats, on once ploughing and pressing, tares, rape, or mustard, or turnips as a preparation for wheat.

Do you use artificial manure?—Yes, bones and guano, and salt.

Do you think that the productiveness of the Hampshire hills generally would be increased by the use of bones?—Materially so; and in this way, supposing you do not use it as a permanent dressing; any dressing that will promote the growth and increase in a turnip crop, for instance, we are able to bring this poor land, without the wear and tear of the dung cart, into good land by giving our sheep corn or oil-cake with the improved turnips.

The turnips are not very good upon the Hampshire hills?—Not where they are broadcast, but where there are any artificial manures drilled in as I have drilled for some time; I have this year not only enough to keep my extra stock, but I was able to take 300 ewes into keep this spring, and if it had been a good turnip year I should have sold £200 worth of hay.

You have doubled your sheep?—Yes; I do not believe I shall this year feed one acre of grass off, but I shall have early oats, trefoil, early tares, and winter tares following. We have a very early winter tare, and then the common winter tare, and the summer tare; I shall not require with my stock of sheep one foot of grass.

And you think many of the Hampshire farmers, if they had protection for their capital, would be able to increase their stock in something like the same proportion?—I know it to be done, even by tenants, under the present system; where a few years ago such a thing as a fattening beast was not dreamed of, there they are fattening now; and in the adjoining farm to me the young man who has taken it has been fattening oxen and sheep, which he has sold off, and keeping the exact amount of stock, even larger, in fact, than it used to do as a breeding farm; this is all extraneous, both beasts and fat sheep; I never knew one to be fatted on the farm formerly; he fats some 200 or 300 head beyond the stock that for years has been carried on that farm; the oil-cakes used has increased and very much improved the manure.

Are you of opinion that in order to insure those improvements being made, the wish of the Hampshire farmers for protection, for reimbursing them their capital, ought to be complied with?—I have broached the subject for months, and have never had a dissentient voice; they say, only give us the advantage of a lease if it can be had, and where leases are not granted, a notice of two years on the part of the landlord or tenant, with a compensation clause in both cases, and we should be satisfied.

Mr. NEWDEGATE.] Is the necessity for this felt principally in the absence of proper agreements, or in the difficulty of recovering the due of the tenant, under an agreement?—I am not aware, and I do not believe there is any agreement within 10 or 15 miles of me that gives compensation; it is done too much through an agent, who says "There is a lease." I have a lease in my pocket. I wrote into Norfolk to know what is doing there. A tenant may point out some trifling thing he wished to be altered; the agents would not listen to it; they say, "If we do it to you, we must do it to all."

Of course it is entirely at the option of the tenant whether he takes the land or not?—Yes, of course.

Do you know that the system which has prevailed beneficially in Lincolnshire, originating in that way, has extended to a custom?—I have heard of it.

Do you know that?—No; I have heard that it has almost become sufficiently permanent as a custom in a limited locality.

Would not it meet the objections of the Hampshire tenantry if agreements prevailed, and facilities to recover under them were afforded, that is, if it were the general custom to give agreements, as it is in Lincolnshire, and increased facilities were given by the legislature for recovering under them, would that meet the wishes of the Hampshire farmers?—Yes, most assuredly, either in leases which would have a clause to give compensation for that which is actually beneficial to the land would suffice; or where gentlemen are not disposed to give leases, but prefer tenants at will, I have heard many tenants, men holding 2,000 or 3,000 acres of land, say "In the absence of a lease, let us have a two years' notice; not to be thrown on our beam ends at the caprice or at the death of the landlord."

Then what they desire is this, that they should have the power of recovering against the property?—Yes, against the property, or rather of the incoming tenant, for, as I have before said, it would not fall upon the landlord.

And increased facility for recovery by law?—Quite so.

Then supposing those points granted, would they desire a general law by which compensation should be settled independently of agreement and dilapidations, settled and recovered also independently of all other agreements?—Most assuredly they would, upon this broad principle, that it would be beneficial for all parties; it would do away with the prospect of litigation if you went on one general broad principle, even if you chose to let the present custom of the counties remain as to the mode of leaving the farms; if it were understood that covenants were to be introduced into the agreements, that the incoming tenant should pay for the actual unexhausted improvements upon the farm upon a valuation, as Mr. Smith has said is done in Sussex, by accredited persons, practical men should value what is actually expended upon the farm, and that that amount should be paid, so that simply that which is beneficial to the incoming tenant should be paid, not the capital that has been sunk, and capriciously laid out, without benefit to the landlord or tenant, that would be satisfactory to all parties.

The question is whether they would wish the same principle extended to dilapidations?—Most assuredly; in common honesty I cannot ask the legislature to give me a one-sided measure.

Then your view, at all events, is that the system of letting land, so far as the conditions for compensation and improvement are concerned, should not be a matter of private agreement, but that it should be arranged by law?—In so far as I mentioned before, that which is beneficial to the incoming tenant should be secured to the outgoing tenant; the landlord should be

secured against loss by neglect or dilapidations, and there should be one general law in the case; that would not affect the particular mode that may obtain either in Sussex or Norfolk, or Yorkshire, or elsewhere; but there should be one simple enactment, by which both the landlord and the tenant would be protected.

You know that the most extensive improvements have obtained in Lincolnshire without it?—Yes.

Then is there anything peculiar in landed property, which should render it just to subject its tenure to such a system as this, that would not equally apply to other property?—It is almost invariably applied to other property; in the present day there is scarcely any trade or manufacture where there has not been some improvement; if I take any manufacture and I improve it materially, and am making a greater profit by it, the next comer would gladly pay me for it; he would not like to have the improvements thrown back; if I introduce any improved mode of manufacture, or any cheaper mode of producing a commodity, the next comer says, "I will pay for it."

That is through a system of good-will?—Yes; it is in fact the *quid pro quo*. Here are two manufactories; here is one carried on under the old system, and I find I cannot make so great a return by that as by the new one, and they are both offered me, and I shall give, and gladly too, more for that which will give me greater profit.

That system is one which affects only the out-going and in-coming tenant, but in no way relates to the owner of a shop?—No, only so far as it falls back into the landlord's hands.

That is a system of what is termed "good-will" in trade?—Good-will goes very much to this; it is for the extent of business I am doing, and not the improved mode of manufacture.

The improved mode is included?—Partially so.

And this good-will affects only the out-going and in-coming tenant?—I beg pardon, but observe, I consider that the landlord is the person most benefited.

Speaking of a manufacturer, take this case: a person holds certain ground on a building lease for a silk mill; if the tenant of the silk mill has the power to relet, that is, to let his lease, which he generally has, then it is a matter of good-will; and it comes to an arrangement between him and whomsoever succeeds him; but the owner of that property is in no way affected by the transaction?—No; nor will the Duke of Bedford be benefited by those immense stacks of buildings in the various squares of London until the period of the ground rent is out, and so would the landlord ultimately of the mill.

And the principle of good-will applies only between the out-going and in-coming tenant; that is, between the two individuals, and does not affect the landlord?—Until the expiration of the building terms that are undertaken for the erections, then it falls back an improved property into the landlord's hands.

Whatever falls under the good-will does not affect him?—Not during that period.

At the termination of the lease to this person, supposing the land has been let upon a building lease, the building becomes the property of the landlord?—That is the case.

Why would you make the exception in the case of landed property, as between landed property and house property; the proposal you make is this, to apply the principle of good-will to the third person, which is the landlord, and make it by law binding upon him?—No.

Yes you do?—That would make it binding upon the land, which land is taken by the in-coming tenant, who pays it, and not the landlord; the landlord derives all the benefit, without paying one farthing for it.

When you say the estate, it is the landlord?—It is between the out-going and in-coming parties; because if the land has been benefited to yield a better income to the in-coming tenant, the landlord would get that additional rent; the landlord is a gainer without being a loser by any chance whatever.

Why would you make the landlord liable for this compensation under custom, or his estate, which is the same thing in the case of agricultural property, when you do not apply the same principle to trade?—For this reason: the landlord and the tenant can be now the only contracting parties; we can know nothing of the tenant at the expiration of the ten or fifteen years; consequently you must recollect the in-coming tenant repays the out-going tenant, and the landlord receives the benefit of the additional rent, he not paying one farthing to it.

Then you place the landlord in the position of the in-coming tenant?—Yes; and if a single instance could be given where the landlord is in any case injured, and he is made to pay that which he would not receive back from the in-coming tenant, then the argument would hold good; if the landlord holds the land himself he is the in-coming tenant.

What is the reason, in justice, for placing the owners of landed property in a different position from the owners of building property?—If I improve a building property while I hold it, by the extent of the buildings, or by the facility of manufacturing articles, every day after I have erected it I am reaping the benefit of it; and directly I dispose of it, I say, "Here is the property; you can turn round so many pounds monthly, and by the improvement of the machinery you will reap a profit, and I expect therefore to be paid for it." But the moment it falls into the hands of the landlord he reaps the advantage of it.

How do you establish the difference between the two properties, because the termination of the tenancy in both cases is the same to all parties; if you intend to apply a different law to the landowner, making him liable to a custom equivalent to a good-will in trade, where you do not apply it in trade?—I merely in the one case leave a naked improvement, which if left by itself is useless; but I have poured into your land an enrichment, which if you left it in an uncultivated state, and turned stock upon it, would make your grasses, even your couch grass improved; it would be improved by my improved manure, and you could carry stock upon it that you could not have done before, and therefore virtually it becomes in any state benefited, but I have put 3s., 4s., or 5s. an acre of improvement, in the land, which can be made profitable to both parties; therefore I have actually improved your soil and made you a better property.

What is the difference between having improved the soil and having built a factory upon it?—When a landlord lets me a certain portion of land in the metropolis, for which for 60 years I guarantee him £4 a year ground rent, I build a house, and make it worth £70 or £100 a year, and when it comes into the landlord's hands he gets the advantage; but during the 60 years he has received only £4 on the land; he has the full rental.

If the landlord lets by lease, the rental is so adjusted as to give an adequate profit to the tenant during the holding?—I take the land upon the ground rent, and knowing that if I give £4 a year when I have laid out my £1,000, I get a return. I pay only £4 until the expiration of the term, then the landowner comes into it; but if I take a farm at a fair yearly rent of 20s. an acre, and at the end of that period I make it worth 23s. or 24s., the landlord is benefited, and if I have left anything upon the property that I cannot take off,

and the next coming tenant reaps the benefit of it, he ought to pay me for it.

The rent in the case of a lease is fixed, and you look to compensate yourself in the term of years, whether it be land or house property; supposing you have compensated yourself, what further right have you?—The point is, that I have not compensated myself; it amounts to this: I say, "If I am not to be compensated for the next two years' outlay, I shall stop my hands, I will not improve." I have at this moment fifteen or sixteen men hoeing wheat; but if I was at the expiration of my lease I should strike my men off, I should not be benefited by the cleanness of the land. I shall grow as good a crop; and if it be a very dry season, perhaps I shall be better off than by putting on those men; and if I put on extra dressings, of which the next tenant is to reap the benefit, I ought to be paid for them.

Supposing you expected to give up the lease, you would not expend that capital?—No: if the valuer says, "You have been taking out all that you are entitled to, and we cannot give you any valuation," we must submit to it.

You would not be injured?—No, but the landlord would.

The tenant would not be injured?—I should in that case save myself as well as I could, but not fully. The great object I conceive is to improve the land, and the public would be materially benefited by a better cultivation.

Then the object is not a matter of justice in the case of a lease, because the tenant can compensate himself by withdrawing his improved cultivation?—He can in a lease, to a great extent, but not always so, as I have shown by the instance I have cited.

In a lease granted by the landlord who is in possession of the fee simple, then the question in that case is not a question of justice but a question of the advantage of continuing an improved system of cultivation?—It is a question of both to a great extent, because though I endeavour to repay myself all I can, I cannot to the full extent; I can grow something more; but if I am to be compensated for laying out that expense, I will not do it to throw more into the pocket of the incoming tenant than into my own.

The case put is this: You take a farm that is to be let on a twenty years' lease; having taken it, you improve it, and you pay yourself for your improvements, knowing that you are to give up at the end of the twenty years: when you give it up at the end of the twenty years, how are you injured?—If I gave it up at the end of the twenty years, I should certainly for the last two or three years of my term endeavour, though I may not wholly repay myself, to take all I could out of it, without materially injuring the property or the incoming tenant.

You are asked whether in that case you would have any claim in justice beyond that which is secured to you?—I should if I left anything unexhausted.

You have specified that you do not?—I take all I can out; but I cannot take it as far as I ought.

Why do you not?—If I began two or three years before this, I should have deteriorated the land, and be a loser also.

Then the substance of your evidence is, that taking a lease for 20 years certain would be nothing more than an improvident engagement?—If the object of my examination is to show that leases are or are not beneficial, my own impression is, that whether you take it subject to a lease or an agreement of two years, that in both cases it would be beneficial to the out-going tenant, the landlord, and the incoming tenant to

insert a clause for compensation for unexhausted improvements.

But would it not be a matter of justice, if you took it with the certainty of leaving a compensated interest in the farm?—It appears to me that all parties would be justly dealt with if you pay me for that which I do not get benefit from.

The question is this, if you take a farm for 20 years certain, with a certainty of leaving, do you not adapt your arrangement to that tenure if you compensate yourself?—Then I have no claim upon you, I grant.

You have no claim upon anybody?—As far as that goes, I grant that; as an individual, arranging between myself and the landlord or the incoming tenant, I do the best I can to secure myself: as far as that goes I am willing to admit it. Permit me to add to the above one very important matter I have omitted to impress upon the committee. Much has of late been said to induce farmers to embark more capital to enable them to grow more bread corn &c. I am not prepared to say how many thousand acres are annually injured in their productive value by the present system of outgoing tenants withdrawing all they can out of the soil for the last three years of their tenure, but it must be very great; the public have a right to complain that such loss does occur, and should the landlords object to an equitable arrangement between the outgoing and incoming tenants, the onus will lie entirely with them. The landlords have it now in their power, by consenting to legislate upon this question, to contradict the assertion made by the late Anti-corn-law League, "That they were opposed to the interests of their tenants, and were determined to hold them in a state of feudal thralldom." I assure you that the great body of tenants here entertain an opinion that their landlords are disposed to meet the question upon equitable and reciprocal principles.

May 11th, 1848.

MEMBERS PRESENT.

The Earl of Arundel and Surrey	Mr. Henley
Mr. Burroughes	Mr. Moody.
Mr. Colville	Mr. Pusey
Mr. Tatton Egerton	Mr. Sotherton
	Mr. Stafford

PHILIP PUSEY, Esq., IN THE CHAIR.

Evidence of Mr. THOMAS CHANDLER.

CHAIRMAN.] You are a practical farmer residing at Stockton, near Warminster, in Wiltshire?—Yes.

What extent of land do you occupy?—1,000 acres.

Of what kind?—Some vale; the greater part of it hill, and some down land; they are three descriptions of soil, quite.

What is the time of year the tenancy ceases in your part of the country?—Generally at Michaelmas; the pasture lands at Lady-day; there are two leases, the pasture lands are taken at Lady-day, and the arable farms at Michaelmas.

Taking arable lands first, what payments are made by the incoming to the outgoing tenants?—The tillages; if the landlord makes the agreement that he is to do the tillages he is paid for it, such as ploughing for turnips, and anything of that kind; that is oftener done, however, by the incoming tenant.

By the custom of the country has the incoming tenant the right of entry to prepare the land for the crops before Michaelmas?—Yes, a certain quantity of turnip land.

The incoming tenant, by the custom, has the right of preparing and putting in the turnip crop?—Yes.

And has he the right to come in and plough for wheat?—Yes, in June, generally, to prepare for wheat on the old ley.

To plough the fallows?—Raftering and preparing the wheat.

To whom does the manure belong, by the custom of the country?—To the coming-on tenant.

Unless by special agreement the tenant has the right to make those preparations of the land, it appears there would be little or nothing to be paid by the incoming tenant to the outgoing one?—Very little in that case, unless there was an agreement between the two parties to that effect.

Is anything paid by the incoming tenant for improvements?—Not that I am aware of.

Not of any kind?—No.

You say the dung belongs to the incoming tenant; if the outgoing tenant had kept a number of beasts fatted upon oil-cake, would he have no compensation for that?—No.

Nor if he has used bones?—No.

You were last year chairman of the North and South Wilts Agricultural Improvement Society?—Yes.

Is that a society consisting of practical farmers?—Entirely.

Is it the general opinion of that society that a change of the law of tenant-right is desirable?—Quite so.

Supposing the legislature were to give compensation to tenants for improvements, is there much improvement which in your opinion could be made?—Yes, there would be, I think, certainly; it is generally the custom, at least it must be so, that there is a certain preparation for leaving before quitting the farm.

Do you generally hold the land under lease, or from year to year?—In both ways, but principally from year to year.

What is the usual tenure of land in Wiltshire?—It is seldom more than eight years; there are a few instances; there is one in the neighbourhood 21 years.

Mr. MOODY.] Is the holding by lease generally, or from year to year?—It is on lease, except the Marquis of Aylesbury, and he owns a large portion of Wiltshire.

CHAIRMAN.] Is the committee to understand you that those leases for eight years do not secure the land being returned to the landlord in a highly productive state?—Not in so high a state as it would be if the terms were for longer.

Do the tenants feel it necessary for their own interests towards the end of a lease, if they have no expectation of going on, to diminish their outlay?—Yes, they certainly do; because more is laid down to grass; most leases confine you to a certain quantity of new and old field, such as grass mown once and fed two years ley, which of course requires less employment of labour to do it; we do not always comply with the lease throughout; it is then with turnips twice following, instead of so much grass laid down.

If anything were paid as compensation for the use of bones by the incoming tenant, would the farmer use them more largely and carry heavier crops?—They would the last year, because they would be making their stock the better to sell on going out of the farm.

Is there much improvement that might be made by chalking the land in your neighbourhood?—That is very commonly done; it has nearly all been chalked.

With regard to the grass land, what compensation does the tenant receive there?—For permanent pastures nothing at all.

Does any of it require draining?—Not in our neigh-

bourhood; in the neighbourhood of Devizes it does; I am in a drier part of the country.

Would it be an improvement to the cultivation of the land if oil-cake were used?—No doubt of it.

To induce the tenant to do that it would be necessary that he should have some compensation for the improved quality of the manure when he leaves?—Yes, certainly.

Is there any other point which you wish to state to the committee?—I think as a tenant I would rather take a farm from another tenant going out under that system of management where he feeds high; I would rather pay him a compensation and take after him, than take it in a state where the land has been farmed badly, even at a less rent.

Even at a better rent?—I would rather pay him for the improvements on the whole of a heavy farm, after a man who has been farming high, and pay him in the same proportion as I should expect to receive on going out.

It would be not only to the interest of the landlord to give this compensation, as he would get his farm in a better condition, but you as a tenant would actually rather pay a heavy sum than come in gratis?—Yes, that is the feeling of our club upon it.

And you think you would save money in the end by it?—I am quite sure of it.

You think it a very expensive thing to bring a farm out of heart into condition?—Yes, very much so.

Before you can thoroughly do that you have several very inferior crops?—I have proved that from my own experience; I occupy 200 acres of poor land, which was only a rabbit warren; I laid out a great deal of money upon it; it produces wheat and does very well.

How did you bring that land into condition?—I chalked it first, and the landlord paid half, and fed a good deal with corn and cake, and since then we have limed; that I do at my own expense entirely.

Do you give a heavy coat of lime or a light one?—One heavy one.

How much does it cost?—£3 an acre; it depends upon the distance we have to carry it; the lime itself would cost about £2.

Then you consider it would be fair that the incoming tenant should pay the outgoing tenant for lime?—Yes; it depends upon the time it was put in, in proportion to the time the outgoing tenant has had the benefit of it.

What should you consider a fair time for lime applied?—This is the scale of remuneration for liming or chalking.

Mr. MOODY.] That is the scale you propose?—Yes, this is as proposed by the club; it would not be quite so long as chalking; the chalking would be more permanent: "Chalking, marling and claying; where no crop of corn has been subsequently taken, the landlord or incoming tenant to pay the whole expense of outlay; where one crop of corn taken, four-fifths; two crops of corn, three-fifths; three crops, two-fifths; four crops, one-fifth."

Mr. HENLEY.] It goes over five years?—Yes, and then ceases.

How much lime do you put?—Forty quarters per acre. I take it that the chalking is more permanent than the lime.

How many years do you allow for lime?—A year less; four years.

Is that your opinion as well as the opinion of the club?—It is my opinion more than a club opinion.

CHAIRMAN.] Will you state any other items for which you think compensation should be made; and what time?—"Bones, guano, chemical manures, and bought dung; where no corn crop taken, the whole

expense including carriage; one corn crop, half the cost and carriage; two crops, nothing. Oil-cake or corn fed on the land, and no crop taken therefrom, two-thirds of outlay, and if one corn crop taken, one-third."

Mr. HENLEY.] You put guano and bones on the same footing?—Yes, we do.

Is that bones with sulphuric acid or raw bones?—It would be about the same thing.

In your judgment you would class them all alike?—Yes.

Mr. T. EGERTON.] Do you mean bones dissolved or put in dry?—If raw, there would be more left for the benefit of the incoming tenant; it would take longer to take the benefit from the land; one is dissolved bones, the other dry bones.

You put bones and guano under one head?—Yes, dissolved bones.

Mr. SOTHERON.] Do you now give us the opinion of the club as to sulphuric acid?—No; that is my own opinion.

Then you would make it a different class?—Between bones dissolved in sulphuric acid and dry bones.

Mr. HENLEY.] In your opinion, should there be any, and if any, what difference between bones and guano?—Dissolved bones and guano; I think none at all.

Between raw bones and guano what different would you make?—A larger quantity would be required; I should think one-third difference.

The custom that you have spoken of as existing, of the incoming tenant entering upon the land to do the acts of husbandry, is that the custom under which most of the new tenants have entered?—Yes.

They have paid nothing, but have done the works themselves on entering?—Yes, that is it.

You say that the deterioration of the land for which the tenant-right is principally necessary, is on land held by lease?—That is on part of it, but it applies quite as much without a lease, because it is always on the same system; a person cannot vary.

Under a lease a man cultivates high for a part of the time, and then towards the end he does not cultivate so well?—Yes.

That is the result in your opinion?—Yes; with yearly tenants it must be always under one system.

Therefore there is not so much change in the mode of cultivation under a yearly tenancy as under a lease?—There is not so much change; he is always under a bad system.

Is it the custom in Wiltshire for farmers to quit the farms at the termination of the lease?—They go on again generally.

Of course if the high cultivation was kept up to the end of the term, the farm would be worth more rent?—Yes, I should think it would, most likely.

That might be an inducement to a man to lower the rate of his cultivation if he meant to continue, that he might not have to pay an increased rent for the next lease?—That could not be the case; he could not make it answer to reduce it; with the land under a high cultivation, he could pay better than with land in a low cultivation.

Taking the sum you have stated, on a farm of 500 acres of tillage land, what claim would the outgoing tenant be entitled to make upon the incoming tenant; you have stated a man ought to be paid for oil-cake, bones and guano?—Yes.

How much on a tillage of 500 acres, in your judgment, would a man have to pay coming on to the outgoing tenant, supposing a change took place?—That would depend upon what rate he had been using of cake and corn.

Take a high rate of cultivation, put the land in the

best state of cultivation?—I am not able to say at once, without going into calculation, but as a rough opinion, I should say £400 or £500.

You have come here partly representing a club and partly stating your own opinion, to tell this committee that you have come to certain defined opinions; will you inform the committee upon what grounds of consideration you have formed those defined opinions?—The remarks we have made as to the different payments to be made for chalking, and different circumstances in husbandry, manurings, and different things.

Then it must have been an element of that calculation, how much cost upon the farm, how much money it would come to per acre?—We have generally not confined it to any quantity.

You, as a practical farmer, would know about the quantity of those different things that would be used in high farming?—Yes, I could make it out: it is awkward to speak off-hand, without calculating it in figures, but I think it would be about that.

That would be about £500 upon 500 acres?—Yes, about £500 upon 500 acres for all arable land.

Supposing this farm to have been entered into 14 years ago without any advantages of that kind, and this style of husbandry continued for 14 years, what, in your judgment, would be the improved value of that farm to rent; that is supposing you entered upon a farm and paid 20s. an acre for it 14 years ago, and carried it on in a very high state of farming for the 14 years up to the end of the term, what would that farm in your judgment then be worth to the incoming tenant to rent?—Half as much again.

That would be 30s. an acre?—Yes, 30s. an acre.

Then you say that in your judgment upon that farm you think from £100 to £500 would be the amount of capital that the outgoing tenant would in justice be entitled to receive?—Yes, I think it would be something near that.

Then, would it be a greater inducement to a man intending to continue his farm to discontinue his cultivation for fear of losing the £500, or to discontinue it to avoid paying half as much rent again for the next 14 years?—I do not know, I should think not; if he had anything about him he wanted to keep, if he found it answer, he would continue it.

He would have to pay £750 instead of £500 a year for it?—Yes.

Would not most men be apt to let the cultivation go down, that they might not have to pay £250 per year more rent?—He could not let it go down so much; there would be more applications for the farm.

You think he could not let the cultivation go down so much as that?—No.

Have you turned your attention to that?—Yes, I can speak from experience.

Then, if any other parties equally competent to form an opinion, have formed an opinion quite the reverse, still you would maintain that opinion?—Yes, that is my opinion; certainly, there would be more applications for the farm.

And you think the tenant could not run it down?—not to the same extent.

Have you given much consideration to the subject of classing bones and guano in the same scale?—Perhaps not to give a decided opinion upon it; but merely common conversation of the club at one or two meetings.

And not having given much consideration, you come prepared to recommend your view?—Yes, I should think that was about the proportion of it; we fancy so at least. The object is to raise a crop of green food, and by proper management converting it into manure for the next corn crop.

Do you speak from theory, or from having used the manure yourself?—Having used it to a large extent.

Having used it to a large extent, your judgment is, that they are equal?—I am speaking wrong. I do not use much guano myself. I have never made it succeed on my land; others of the club have made guano succeed where bones do not; on my own land bones having succeeded well, I have kept mostly to bones. The opinion is, that where guano does well on one farm and bones on another, it is about the same cost and the same result.

You have taken your own judgment as to bones, and that of other farmers as to guano?—Yes.

Do you know whether any parties that you can speak to have tried both, and put them upon an equal footing?—Not at this moment.

The permanent benefit to the incoming tenant, that is the question?—I do not know that I can speak to that; since bones have been dissolved, I do not think that the incoming tenant has as much good from the bones as formerly.

You are asked this question particularly because different opinions have been expressed by other witnesses upon the subject; have you given it much consideration or not?—I was going to state it this way, that since the introduction of dissolved bones a less quantity is used for the purpose of producing a green crop, but it does not last so long afterwards in the benefit to the land. I think dissolved bones and guano can be put nearly at an equal value; in the raw bones, a great portion of the bones are not consumed in the present crop of turnips, there is more left to come on.

You mean that from raw bones would be more left than from dissolved bones?—Yes, the dissolved bones and guano come very near together.

What would be your opinion as to the raw bones and guano?—That depends upon what the soil is; on white clay soils I should not pay much for bones, because there is very little benefit on such soils, but where it is suitable for bones I would pay more for raw bones than for dissolved bones.

You have said that one of the inconveniences that you are subject to in preventing high tillage is the condition to lay a certain portion of the land down, towards the termination of the lease?—Yes.

In your opinion ought it to be prevented by law?—Yes, I think it might be; if compensation were made it would be better to have two turnip crops; it would be better for the incoming tenant to pay the tillages, than have the usual method of the old ley.

The compensation to whom?—To the going-off tenant; the coming-on tenant would pay for those parts of the tillages done for the coming-in tenant's wheat crop; but he having no old field, would have two turnip crops.

What is the reason that the covenant to lay a certain portion of land down, is introduced into the Wiltshire leases?—The old system of tenantry in a great measure; when it was in common then it used to be wheat, barley, and grass, and very little alteration has taken place in the system since then; the leases have not been altered to meet the improved system of husbandry.

It is competent to the landowner and tenant to alter them if they please?—Yes, but it has not been done from not being properly attended to on the part of the tenant.

There may be a difference of opinion?—Yes, many landlords are in favour of having those old practices; that is the case with my own; he finds fault with my system, which is not to keep down old grass.

In your opinion that ought to be altered by law?—

Yes, I think so, or by lease; by special agreement it might be done.

By special agreement it can be done now if the parties choose to agree?—Yes.

If then there is to be any alteration, it must be by law?—Yes, for the exemption to be on the other side, and to make that the law, and the landlord to make the exemption.

Do you think that the landlords and tenants ought to have power to exempt themselves if they please?—It would be doing away with the benefit of the law if a person were to say he would not have it, it would nullify the act.

That would deprive the landlord of this power of exempting from having the ground broken up?—Yes.

Ought that to be done?—A person has a right to do what he likes with his own; it seems fair, and by-and-by the landlord will see that it is to his advantage to do it.

He will then do it?—Yes, perhaps so.

Men generally do act upon what is most to their advantage?—Yes.

There may be differences of opinion?—That is the fact, I believe.

When it is clearly made out that it is to a party's advantage, he is apt to do it, is he not?—In most cases.

Has there been much improvement in your recollection in the cultivation of Wiltshire?—Very great improvement, no doubt of it.

Under what circumstances has that great improvement taken place?—In a great measure the down land has been exceedingly improved, and so has the other, from artificial manure; and there is a great inclination to feed stock or corn, which is done now to a much greater extent than formerly.

It has been progressive for the last 25 or 30 years?—More so within 10 or 15 years.

That has gone on under the existing order of things?—Yes.

The increased value of stock has pointed out to parties that they can make great profit by introducing that sort of husbandry?—They manure the land higher, and produce greater crops of corn.

And that has extended itself very rapidly?—Yes, very rapidly lately.

And that without any protection except what the tenant and landlord can make by private agreement?—It has gone on so progressively from the first, there was never a period for stoppages to make a talk of it; now people begin to find that more can be done than has been done where there has been compensation.

Having done so much without compensation, to the great gain, generally speaking, of those who have carried it out as well as the public, why should not they continue that system?—It is a very expensive operation, and men would require a great deal of capital; and being so short a time as eight years, there is no time to keep one regular system; we are obliged to alter the system so often; a man is obliged to cultivate according to his lease.

Is there anything to prevent parties taking leases for longer than eight years?—Two years' notice and compensation would answer as well as the lease.

Is there any difficulty in parties taking leases for a longer period than eight years?—Yes, the landed proprietors will not grant them.

That is because they do not choose to do so?—Yes, I wanted a 21 years' lease myself.

In your judgment ought landed proprietors to be compelled to grant leases for a longer term than eight years?—I do not approve of compulsion.

You do not go to that length?—No.

Mr. T. EGERTON.]—What price do you pay for your

bones?—Half-inch bones 18s. a quarter, and £1 for the dust.

Mr. HENLEY.]—A quarter of eight bushels?—Yes.

Mr. T. EGERTON.]—Referring to your answer with respect to the 20s. an acre, into how many rents do you divide your farm; that is, in taking the farm, do you not take the value of the farm and divide it into so many rents, the rent of the farm forming one certain proportion of it only?—As I understand the question, it means before the profit is taken; in that case, it is generally three, we consider.

Mr. SOTHERON.]—Three exclusive of profit, that is?—Yes.

Mr. T. EGERTON.]—What proportion does the profit bear?—It depends so much upon the season; in some years it is a good deal worse than profit.

In a highly cultivated state of farming, does it bear a much higher ratio than in a low state of cultivation?—In my opinion it would; there would be much more employment of labour.

The question refers to the difference which goes into the farmer's own pocket in highly cultivated farms and in lowly cultivated farms?—There is a considerable difference, of course.

Would it not be to the farmer's interest, even towards the end of the term, with probably an increased rent to pay, to keep up the increased cultivation, in order to get his own profit?—No doubt of it.

Mr. SOTHERON.]—The shorter the lease the more you think it is necessary to have some arrangement for compensation?—Yes.

Is the usual tenure in your neighbourhood an eight years' lease?—Yes.

Therefore in the course of eight years, supposing the tenant to lay out a great deal of money, your opinion is that he has not the means of recovering a fair return for the money so laid out?—No.

If instead of eight years it were 21 years, the argument would be much less forcible?—Yes.

At the end even of 21 years are you of opinion that, under any circumstances, it is just that the outgoing tenant should receive, in some shape or other, a compensation for whatever he has put on his farm, which he has not already had the benefit of?—Yes.

Are the Committee to understand your opinion to be that any law that should deal with this matter should be compulsory upon landlords, to compel them to make any arrangements with others but such as they choose to make in their own farms?—It would be making the law of no effect without it; but of course people like to do what they please with their own.

You were understood to say just now, that though you wished to see it given, still that it should be upon the principle that every man may do what he pleases with his own; you do not wish to see it given compulsory, that the landlord should not, if he chose, to include a clause in his lease, to say that it should not operate upon his property?—I should wish to do so.

As to those gentlemen who form your club, what is their opinion?—They are all of about the same opinion as myself; that we as landlords should not like to be compelled to do things against our own inclinations.

You say that the cultivation of Wiltshire has improved very much lately?—Yes.

And you think that it is a benefit to the landlord as well as the tenant?—Yes, and the community.

That which you would suggest would be a still greater improvement to the property, to the landlord, and tenant?—Yes.

You think that it would create a better class of farmers, and the estates would be generally improved?—Yes, and the farms will be smaller; we shall employ the same capital on less land.

That is what you suggest, as what you think would be to the benefit of both parties. Is not the probability that the landlord, even if he had the power by special clause in his lease to exempt his farm from the operation of such a law, if it were found to be practically for the benefit of the landlord as well as the tenant not to exercise that power of preventing such a law from operating upon his farm, he would not exercise it?—No doubt that would be the case.

Mr. STAFFORD.]—Do you think that agricultural improvement has been retrograding in Wiltshire during the last few years?—No.

It is still going on in the same proportion as it has been going on in the last ten years?—Yes, it is still going on.

Quite as rapidly?—Yes; but it would go on faster if longer leases or better tenure were given.

You have seen no sign of its stopping at present?—I cannot say that I have seen any.

Evidence of Mr. HENRY BLANDFORD.

CHAIRMAN.] You reside in North Wiltshire, in the parish of Poulshot, in the neighbourhood of Devizes?—Yes.

Are you a practical farmer?—Yes.

What extent of land do you occupy?—My rental is under £500 a year; my land not 200 acres. I rent heavy, wet land.

What is the time of entry in your part of Wiltshire?—Lady-day.

Has the in-coming tenant the away-going crop?—The in-coming tenant takes possession of the farm on the 25th of March, by paying for all tillages. We have but a small proportion of arable land in our neighbourhood; it is generally grazing and dairy land. The tillages are paid for and the labour of manuring. The same line of argument does not hold good with myself as with Mr. Chandler; many farmers in my neighbourhood have not more than ten or a dozen acres of arable, and we get no return for the outlay of our capital upon our pasture land.

Is there much land in North Wiltshire that requires draining?—Yes, a great quantity of the land in the lower section of North Wiltshire.

If that land were drained, could much of it be brought under the plough with advantage?—There is a difference of opinion. I am not sufficiently acquainted with it to give a decided opinion.

You have no doubt it requires draining?—Yes, it requires draining, and I should break it up if I had the opportunity, if it were thoroughly drained. I cannot say a great many men in the neighbourhood would break it up; they would consider they had advantages for feeding which would compensate them in grass.

At present the out-going tenants would have no compensation if they drained the land themselves?—No, none whatever.

If they had compensation, would they be likely to drain their land?—I have no doubt they would very largely.

Would that give a great deal of employment to the labourers in the winter?—Yes, draining must. At present the expense of pipe draining in material is not more than 24s. an acre, and the rest goes for labour. You pay 64 to 70 per cent. for labour in draining.

Is your knowledge of North Wiltshire such as would enable you to say anything would be desirable that would increase the employment for the agricultural labourers in winter?—Yes, we want labour, more particularly during the winter months.

On all the grass land district in your neighbourhood there is a difficulty in finding employment in the

winter months for the labourers?—Yes, we have men thrown out of employment; in fact, we have to keep the men, who emigrate into the corn-growing neighbourhoods in the summer. They can afford to give them a longer job, and they go out of our neighbourhood and get 40 or 50 acres of corn to cut, instead of having 10 or 12 only with us; then they come back and throw themselves upon our parishes for employment during the winter months.

You say there is a difference of opinion as to the breaking up of grass land; some of the farmers would be disposed to break it up?—Yes, the largest section of the more energetic men would do so; there are men that have done tolerably well grazing and dairying, and they have not the capacity for any other system of farming.

Therefore, in your opinion, there would not only be an increase of employment to the labourers in the execution of the drainage, but also an increased improvement in the cultivation of such parts of the grass land as it should be found expedient to break up?—Most assuredly; there is very little labour growing out of grass land during the winter months, merely tending the cattle; it takes two acres of land to support a beast, two to two and a half, and one man can look after 20 beasts in the winter months on ordinary pasture land, merely giving them the hay; if those two acres, or two and a half, were broken up, there would be the thrashing out the corn, the carrying out the manure, and cutting the chaff for the cattle, that would increase wonderfully the labour necessary on two acres and a half of land.

And taking the whole together, this would be a great advantage to the labourers of that district of North Wiltshire?—Yes; of course labour must be of the greatest advantage to the labourers during the winter months, when labour is short.

Is there any other remark you wish to make to the Committee?—No; no more than that we are very desirous of having tenant-right, believing that it would lead to a more regular expenditure of capital in agricultural matters; it does not seem reasonable that a man should be laying out his money in improving land towards the latter end of his lease, without he was secure of getting a return of it. In many cases people give up their estates when the rents are raised, rather than pay the increased rents; they have lately in our neighbourhood, although the land is worth the rental; I have known one or two cases myself where men have given up their estates, convinced at the same time that they were worth the increased rent, but they did not like paying the interest upon their own money; it is a foolish feeling, but that has been the effect of it in a large portion of land in our neighbourhood; almost all the tenants of one gentleman changed in the last few years, in consequence of the higher valuation of their farms, from the improvement in the style of agriculture which they had pursued.

Mr. HENLEY.] You have said that there is a great deal of land in your district that wants draining?—Yes, a great deal.

Has there been any draining done in any part of that district?—Yes, large quantities have been done.

Taking the district of which you speak, is the larger proportion of it drained or undrained?—Much the larger proportion is undrained.

What, in your judgment, is the cost per acre of draining the pasture land of that neighbourhood with tiles?—It is a very retentive clay soil in our neighbourhood, requiring draining at about 30 feet apart, and the cost in tiles would vary, it used to cost us 40s., but it is not more than 24s. now for inch bore tiles.

And the labour per acre?—The labour per acre de-

pends upon circumstances; we generally give 5s. a score, that is for 20 poles. Of course the labour is calculated as the tiles are, according to the nature of the soil; and how far apart the drains may be placed.

What is the average width at which you place the drains in North Wiltshire; do you put them in the furrows?—Generally so, because the furrows have been regulated by the nature of the soil, and we put the drains the same way.

Speaking generally, about what is the cost of draining pasture land per acre?—We have so many descriptions of soil, you cannot generalize them. Speaking of the parish in which I live even, one part of it is a sandy soil, and the other is a stiff clay; a drain once in a chain would do for one, and once in fifteen feet would not do for the other.

Upon the clay what would it be where it is 15 feet?—It would cost about 34s. for the labour, and 24s. for the pipes.

That would be something like £3?—Yes.

In your judgment, over how many years ought that expenditure to be thrown?—I think the result ought to serve us as a guide. In some instances I have known drains silt up and roots to get into them in a few years; others I have known to remain as good as when first made for 12 or 14 years.

Supposing the tenant to have outlaid £3 an acre in draining his farm, if then he should receive notice to quit as soon as it were done over, how many years ought he to have a claim upon the incoming tenant?—My judgment in that matter differs from others; I think if the draining were efficient in every respect he ought to be paid the whole outlay; on the contrary, if it was not worth anything, he ought not to be paid anything.

He ought to be paid his outlay if he went out the same year?—Yes, if the work were well done.

Supposing he goes out 5 years after it is done, ought he to be paid the whole outlay then, if the drainage is perfect?—Yes, it appears so to me.

If he remains 10 years should he still be paid the whole outlay?—The landlord has equally as much benefit as the tenant, and therefore he ought to pay for it, because I think if it does not do any good, the landlord ought not to pay anything, and therefore if it does good to the full extent, and the landlord reaps the benefit, he ought to pay the outgoing tenant; that is the principle upon which I should value the tenant's claim.

Then you do not look upon the expenditure of capital by a farmer upon the ordinary calculation of trading capital?—Yes.

The ordinary calculation of trading capital is, that a man should get interest for his money, a sinking fund to repay him his capital back again, and a profit upon the money expended, is not that the ordinary trading calculation?—The general principle would be that, but tradesmen make speculations that do not have those results, and they make other speculations that are more beneficial than they anticipate.

If drainage is not to be dealt with upon those general principles, why is it not to be so dealt with?—I say you ought to pay for the amount of benefit you expect to receive from the land. I guard you against paying for anything which is not a benefit to the landlord. I have seen very much injudicious outlay. I would guard the landlord where there was no benefit to him, and make him pay for the benefit that he did derive, and the full of it.

Even if the tenant had expended his capital, and enjoyed the occupation of the land time enough to derive the whole benefit and interest of his money?—Yes.

That is your deliberate judgment?—Yes, upon the same principle that if I bought a horse and used it 10 years, and then it was worth as much money in the market as it was when I bought it, I see no reason why I should not take the whole of the value of that horse, notwithstanding I had used it for those 10 years. You are to pay for what you have.

That being the principle with regard to drainage, now go to the question of manures, and take the case of a farm held for 21 years; the whole of the manure expended during that time is still enriching the land, is not it?—I do not comprehend that.

If a farm is cultivated 21 years by the application of strong manures, and is in a high state of farming, it is going on in a progressive state of increase, is not it?—That does not follow as a necessary consequence: if I put on a great quantity of artificial manure, and grow large crops, and sell them, this does not improve the soil.

The question refers to the use of artificial manure?—If I sell large quantities I do not leave the land necessarily better; it depends upon the system adopted. If I grow green crops in a larger proportion than I grown corn for sale, I improve the land; on the contrary, if I put stimulants for getting large crops, and sell those crops, I may exhaust the soil and farm highly at the same time.

Taking it as you have subdivided it into applying artificial manure for green crops, then the farm would be in a progressive state of improvement?—Yes; if you put on more than you sell, you improve the land.

Then is it your judgment that manure that had been expended 20 years back should be taken into consideration, reckoning the tenant-right from the expiry of the term? I know the general way in which the statement is put. Suppose I took a farm at £1 an acre, and held it 20 years, and I make it worth £2 an acre, I claim for myself the full advantage of that, either from the landlord or the incoming tenant. I do no act of injustice to you, and I only benefit myself fairly. Just upon the same principle with draining; I do not maintain the same sentiments with other farmers upon that; I think if I improve the farm by laying out my capital judiciously, and the land is to receive a permanent advantage, I ought to receive the advantage that is fairly to come to me at the expiration of my tenancy.

Then you advocate this principle: if you take a farm worth 20s. an acre, and hold it twenty years, and make it worth 40s. an acre, that that 20s. an acre additional rent being worth in the market thirty years' purchase, you would, according to your judgment, be entitled to receive £6,000?—If the valuation brought it to that, I do not see anything unreasonable in it.

Notwithstanding during the twenty years you had received a fair interest for your money, and a sinking fund to get your capital back again, and reasonable trading profits?—Is not that an extreme case put to lead me into an awkward position? Suppose I do not get that, it does not follow that I am to be remunerated. I may cultivate highly, looking direct to the end of the lease, when I am to be remunerated. I believe generally that farmers get nothing for a long series of years when they farm highly: the benefit is derived towards the latter end of the holding.

Your judgment is, that whatever improvement the land may have received ought to be paid for by the landlord or incoming tenant, without reference to the benefit the tenant might have received during the occupation?—Yes; it appears to me that you are not to be guided by the past advantages which the tenant has derived in calculating the amount of his compensation, but by the improved state of the land.

Your judgment is, that whatever improvement the land may have received ought to be paid for by the landlord or incoming tenant, without reference to the benefit that the tenant may have received during the occupation?—I claim for such benefit as the landlord is to derive from it afterwards, not what I might have derived before; if I have improved the land and made it worth more money, I ought to receive compensation; I do not ask for more than a regular series of years for manure, in proportion to the probable durability.

What do you call a regular series of years?—Five or six years for chalking: I have experienced the advantage of marling that had been done twenty years before I took possession of the land.

Chalking would go five or six years, and marling twenty years?—Of course it would be in proportion to the slowness of the operation that the length of time would be during which you would derive benefit from it.

How much would you say for marling?—If it were to stand for twenty years, I should be paid accordingly.

The question is, what is your opinion?—My opinion is, that I should be paid for all the unexhausted benefit; and I do believe that the effect of marling is to be ascertained for twenty years.

Then, in your judgment, should marling be paid one-twentieth part of the expense each of the twenty years, or in what proportion?—I think it would operate more strongly in the earlier stages of the twenty years; but it does decidedly operate upon land for twenty years.

In what proportions do you think it ought to be paid for?—I have not entered into that subject sufficiently to make a definite arrangement; a great number of experiments would be necessary to ascertain that.

If you are to be paid, there must be some definite judgment and knowledge; it must not be left to experiments to decide what people are to pay on going out?—It would not be very likely that it would be left to me to define it; it would be my opinion and others' together. I merely state as a broad fact, that marling operates upon land for twenty years; some other men might state something different, giving you an opportunity of deciding. I am not in a position to say what would be the relative proportions of the different years.

What would be the relative proportion of chalking?—I think chalking operates tolerably fairly for five or six years.

Ought it to be thrown in equal proportions over the five or six years?—I think it ought.

What other manure have you had experience in?—I use guano on my clay.

How long does guano extend, in your judgment?—If you grow turnips with guano, and feed them on the land, and then grow a crop of corn, and feed that on the land, it is all there. It depends upon the style of farming: we ought to be remunerated according to our style of farming. If I sold everything I produced by my manure, I should have nothing to extract from my landlord; I should have received the benefit. Whereas that is not so if I feed the corn that I grow; and I do feed every portion of corn that I grow, except wheat; I have never sold anything but wheat in my life. I graze oxen with my beans, and with the barley my pigs. I sell nothing but wheat.

Have you any opinion, and if any, what opinion, about the length of time that guano ought to be paid for by the incoming tenant?—It mainly depends upon the system pursued by the tenant.

Supposing it applied to the turnip crop?—Supposing it applied to the turnip crop, then the coming-on tenant ought to take possession of the turnip crop. Is that what I am to understand the question to mean?

Supposing guano applied to the turnip crop; a corn crop, barley, or oats would follow; and then, if there

were a change of tenancy, what should the incoming tenant pay you, in your judgment?—If I had had a crop of oats afterwards, and sold those oats, I ought not to be paid for more than one crop; I should then have had the advantage twice; it would last in the land for three years.

The question of selling the oats, or barley, or beans, would have nothing to do with it; if you consume the barley, oats, or beans upon your farm, they would be a separate item of payment as artificial food?—Yes; then my claim would be for one crop, or one-third.

Go step by step: in the case put to you, what, in your judgment, should be paid by the incoming tenant for the cost expended in guano as manure?—In answer to that, I feel bound to say again that it entirely depends upon the system of farming.

Take the system of a crop of turnips, and barley, or oats, and then change of tenancy taking place, what should the incoming tenant pay?—I could claim only a third. I want to know whether I am to be charged for manure in coming on a farm, and whether I am to be paid for my manure again? One thing grows out of another.

It is a separate question entirely. You are asked this: In your judgment, you say, you would be entitled to receive one-third?—That is my claim, in consequence of having left a larger quantity of straw to convert into manure.

That, in fact, would be throwing the benefit of the guano over three years?—Yes.

Going back to the point about the improved value of the farm at the expiration of the term, because, from the answers you have given, it seems as if there had been a wrong impression upon the subject?—I am afraid I did not properly explain myself.

You have said that, in your judgment, a farm may be increased from 20s. to 40s. value per acre at the end?—I merely put it as a possibility; I did not say it would be so; it is possible it may be so; there can be no doubt that there is land capable of being doubled in value.

Taking such a case where the land is capable of being doubled in value, what, in your judgment, ought the tenant to be paid for having so doubled the value of the land?—It seems to me very reasonable that if I have enhanced the value of the land 100 per cent., I ought to have my full relative share of the advantage of it.

What would be that relative share, in your judgment?—I do not feel myself competent to say. It appears reasonable, looking at the thing, that if I had made the landowner's estate worth £12,000 that was worth £6,000, without any act or expenditure or risk on the part of the landowner, I am entitled to the whole sum I have put on, on leaving the farm; there does not seem anything irrational in my demanding the whole of that £6,000, the value of which by my judgment and capital I have placed there.

Then if a farm were worth in fee-simple £6,000 when you came in, and when you went out it was worth £12,000, in your judgment you ought to be paid £6,000 in the lump?—I really cannot see anything wild or speculative in my demanding it.

Is that your judgment?—It is really my judgment.

Is that your judgment, without reference to the profit or recompense that the tenant may have received during the twenty years he has held the farm?—Yes.

Your answer is really "yes"?—Not without an explanation why.

Then explain it, if you please?—It is this: that during the whole time I have held the farm I have paid for the improvements, and if I had lost £6,000 during that time, and that is nothing very improbable, the landlord would not make it good to me; and then, if I make

his estate worth £6,000 more, it is my money which is vested in that property, and I ought to have a claim for it. I am not calling upon the landlord to pay it; if the farm is let again, the incoming tenant would pay it. Of course it is an extreme view of the case; it is not likely a tenant would claim or get it; but if he did, the landlord would not suffer anything; he would only be standing in as good or a better position than before.

Suppose accidental circumstances, such as an increase in the value of produce?—I do not think the tenant has any claim in consequence of any increase in the value of land, caused by the increased value of produce.

How are those matters to be separated?—I do not think they have any connexion.

Where the value of the land to rent or sell is increased owing to improved skill in husbandry, without reference to accidental circumstances, how would it be then?—It is improved to rent it; it has not gone back; there has not been a great deterioration in the value of land.

Not going back is advancing?—No, I do not see that.

If the produce has gone back, and the land has maintained the same value, that is a relative improvement in the value of land?—So far it is, that is in consequence of the greater quantity grown.

And your judgment is, that without reference to the profit the tenant may have made during his holding, he is entitled to the whole increased value of the land?—It is an extreme case put again in the same way. I must absolutely reply to it as before.

The question is put clearly, not to have a misunderstanding of the question?—Nothing can be plainer; and again I state, that if I have taken a holding of the landlord's, without reference to accidental circumstances, and have enhanced its value without any expenditure and risk to the landowner, and have doubled its value, I fancy myself entitled to the whole advantage.

In letting an estate twenty years ago capable of such improvement, has not it been ordinarily let, in consequence of that, at a low rent?—If I take it at a relatively low rent, that is, if the landowner lets me have it for less money than it is worth, with the view of my improving it, then he should join with me in the prospective advantages of it, because I lay out less capital during that time, and then I participate with the landowner in the advantages.

How do you lay out less capital?—I pay less rent.

That would be your way of considering that you laid out less capital?—Most assuredly: many parties do let farms upon improving leases; it is as advantageous to the landlord to let farms for high cultivation, as it is to us, because it is not so much a question between the landlord and tenant as the advantage to society. We employ a greater quantity of labour, and produce a greater quantity of food.

In your judgment, is not good interest of money, a sinking fund sufficient to repay the capital, and a just trading profit, sufficient inducement for men to lay out capital who have got that, without anything beyond that?—Yes, it would be under ordinary circumstances, but it is not a sufficient inducement to make me improve another man's property without some reciprocal advantage to myself. I do not think I ought to place you in a better position without receiving some of the advantages of it. Suppose I take a farm for twenty years, if I farm that land well up to sixteen years, that is for my advantage. A lease is for the security of the tenant, and it appears to me that the tenant-right is for the sole and entire advantage of the landlord, and not the tenant. It seems a paradox, but nevertheless the effect will be for the advantage of the landlord, and not of the tenant, because it will cause me to farm up to the end of my term in such a way as to secure the landlord a greater rent at the next letting.

You are giving a meaning to tenant-right different to what any other person who has been called before the Committee has given to it; what do you mean by tenant-right?—The tenant-right appears to me to be a repayment of money laid out in unexhausted improvements, and the bill that I hold in my hand is for permanent outlay in building, if it be judicious, and for draining, and for fencing and road-making, and all those things which appear to me to be improvements; and if there are advantages to be derived therefrom by the landlord after I have ceased to hold my farm, I claim that as tenant-right.

Even if you have got back the money and interest, and the profits?—That does not weigh upon the question. If I had neither got profit nor return in any way, the landlord still demands my rent; my risk is nothing to him, and therefore my advantage is nothing to him. Placing the case as it has been put just now, upon an estate under an improving rental, it is a very different thing; we participate in the advantages and risk.

Who is to judge twenty years back whether it is an improving lease or not?—That is a matter to be decided; you may put it in your lease that I let this estate to be at a low rental, because it is in a bad state.

Then is the simple insertion of the words in those leases to decide whether the tenant is to get anything at the end or not?—Yes, the tenant would not be foolish enough to sign it, if it was not to have that effect; I am taking an extreme case, and placing it by the side of the other.

Mr. SOTHERON.] What do you mean exactly by improvements; a question has been put to you from which it appears that the hypothesis is, that the land is improved to the amount of £6,000; that is an extreme case?—Yes, of course.

What is the exact meaning you understand by the word improvement; do you consider draining an improvement?—Yes.

Is all kind of building by the tenant an improvement?—Not all. I say if a tenant does anything, and it does not turn out to be advantageous to the landlord, although he lays out money, I would have you to distinctly understand he has no claim upon the landlord other than for the advantages that the landlord is to derive.

Then those buildings that are really beneficial to the occupation and cultivation of a farm you consider to be improvements?—Yes, of course.

You consider manures to be an improvement?—To a certain extent.

Marling and chalking you also consider improvements?—Yes, all mineral manures; for longer dates than my brother farmers generally do, I consider them to be beneficial to land.

Now you have stated under the head of improvements, draining, beneficial buildings, manures, which are to be taken in a certain proportion, according to the occupation and the number of years they have been applied, marling and chalking?—Yes, marling and chalking, and other similar things.

Is there anything else you class under the head of improvements besides those?—Yes, but those are the heads; if I fed sheep with corn, I consider that an advantage to the estate, but that would come under the head of manuring; I know of no other heads.

Then according to your understanding of improvements, is it possible that an incoming tenant should ever have a claim upon a farm such as has been spoken of, to the amount of £6,000; that is, is it possible, do you conceive, that there should be any such improvements upon a farm of such an extent as would amount to £6,000?—No, I do not think it is likely.

Then in what manner do you lay that before the Committee; your opinion is, if you were rightly understood,

that your mode of reckoning what ought to be paid under the head of tenant-right is the value of what has been done by the tenant at the time he quits the farm; is that so or not?—Not what has been done, but the result of what has been done. I wish the Committee clearly to understand the distinction: if I have not made the landowner's property more valuable, I do not think I have any claim upon him; but if I have enhanced the value of his property with my own capital, and my own exertions, I claim that additional value.

Then it is the value of what you have done upon the farm at the time of quitting the farm, which is to be reckoned for the incoming tenant?—Yes, that is what appears to me to be reasonable.

What is to be reckoned, therefore, is the value that has been given by the application of the outgoing tenant's capital to the farm, according to the value at the moment he quits it, that is to be charged the incoming tenant?—Precisely so.

Then you are not to be understood that the tenant is to receive as a compensation or tenant-right the value of all that he has laid out upon the farm during the time he has occupied it?—No, that is what I particularly wish to distinguish; if a tenant were to lay out £6,000, and not do the estate any good, I do not see the landlord has a right to pay a farthing for it.

Mr. HENLEY.] Going back to the question of the 20s. and 40s., suppose a farm to be worth 20s., when you enter, and by the outlay of your capital you have made it worth 40s., when you go away, you think that upon a farm of the given size, if it were worth £6,000 when you went in it would be worth £12,000 when you went out?—Of course it would.

Then is it your judgment that the incoming tenant should pay the out-going tenant that £6,000?—Yes, upon those premises it is.

And then the landlord would only continue to receive his 20s., as he did at the beginning?—Yes; he has done nothing to increase his demand.

Then the incoming tenant, according to your judgment, is to pay the £6,000, which is the increased value of the farm, and the landlord is to receive his 20s. rent as he did when you began?—It does not appear to me that I am placed in a fair position by answering that question, put in that way.

Why not?—I want to give the reasons for answering the question in the affirmative.

Give those reasons?—My reasons are that the landlord has done nothing to increase the value of that estate; that it is through the employment of my capital at my risk entirely it has been done. If I have manured the land and put mineral manures, in the first place that makes a difference. I could speak as to the case of a gentleman, but of course I do not wish to mention names.

Be so good as to confine yourself to the reasons?—Then I say Yes, in the abstract.

Now will you give your reasons?—I have already stated that if I lay out my capital at my risk, I ought to have the advantage of it as it appears to me.

Mr. SOTHERON.] Supposing a farmer to occupy a farm for 20 years, and to have improved it from £1 an acre to £2 an acre in value, and that he has laid out upon it articles in improvements to the amount of £1,000, is he to receive £1,000 or £6,000 according to your theory?—He should be paid for the improved value of the farm.

To which of those principles do you adhere, whether the figures be right or wrong; that is, if by his improvements he has raised the value of the farm to £6,000, is he to receive the £1,000 expended in the improvements, or the £6,000 to which he has increased the value of the estate?—The increased value.

Putting the interest on one side, is it upon the £1,000

or the £6,000 that he is to receive?—Upon the eventual value of the outlay.

Then it is £1,000 you understand he is to receive for tenant-right—No; I understand that he is to receive as much as he has enhanced the value of the land.

(To be continued.)

MR. HUXTABLE'S BALANCE SHEET.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—It having been observed to me that Mr. Huxtable had shown clearly in his reply to Mr. Hainworth that his balance-sheet was correct, I forward you a corrected review, founded on his still mystified explanation.

The stock sold for £117 15s., he says, were a part of the dairy cows; and the two heifers which were sold for £30 10s. were reared by himself, and not *purchased* for grazing, as I had presumed, and thus it is inferred that the sale price *was all profit!* The dairy produce of the cows sold was the only profit obtained by them; and a trifling loss, Mr. Huxtable admits, was incurred by sale. The portion sold had to be replaced *at that trifle more money*, or the urine tank would have failed, and the water carts not supplied. If the horses had been sold, and the sale price placed in the credit account, the error would have been detected.

The heifers which sold for £30 10s., it appears, were 20 months old, and may be supposed to have been worth half that amount on the 1st September, 1847; and no credit is due for improved value during the year, as the sale price is placed in credit account. The cost of replacing the cows was just the same whether reared or purchased.

The next item unexplained is £188 for improved value of stock; from Sept., 1847, to Sept., 1848, Mr. Huxtable states, in reply to Mr. Hainworth, that there were 26 cows, 2 bulls, 6 heifers, 8 yearlings, and 8 calves kept during the year. The dairy produce of the cows is placed to the credit account, and the calves weaned, of course, in the increased value of stock during the year, and *we may suppose the account may stand as follows*—

Improved value of stock credited	£188
Improved ditto of bulls	£10
Ditto of four heifers, two being sold and credited.	20
Value of eight yearlings	48
Ditto of eight calves	32
	—
	110
	£78

This balance would be reduced by pasture feed, and corn shack of swine; but £18 is a full allowance for this item, and thus it appears as a full allowance is made for the improved value of stock, and the sheep feed being valued separately, that £50 too much is credited for improved value of stock.

The corn account is not clear; over 10 sacks per acre is credited as sold at 25s. per sack, none reserved for

seed, and no dross made, which commonly this year amounts to a sack in a score, of half the value of marketable corn. Or are we to infer that 10 sacks of marketable wheat and one of dross was grown per acre?

To simplify the account, I will put it in a different mode. The interest charged on money expended on permanent improvements should be debited as a certain outgoing to be invested during 15 years to cancel the debt; and the £150 interest, debited to pay 10 per cent. interest on the working capital, should be added to £138, surplus balance: total, £288.

Balance according to Mr. Huxtable's account on working capital	£288
From which it appears should be deducted 7½ per cent. on £400, value of set stock ..	£30 0
Sale price of cows sold, which required to be replaced, and thus ought not to have been credited.....	117 15
Overcharge for improvement of stock, the sale price of a portion being placed to credit account, no credit for keep being due ..	50 0
	213
Balance as interest on £1,500, working capital	£75

The experiments of Messrs. Huxtable, Mechi, and others, certainly prove that our produce may be so increased as to supply the demand; but the main question is, whether the increase will pay the extra cost. The manufacturers have obtained a free trade in corn to enable them to undersell the foreign manufacturers, by reducing the operatives' wages (no very honest act), and disable the home growers from supplying the demand, that we may require a large import of foreign corn to induce and enable the foreigners to purchase our manufactures.

Such inflated accounts of produce and profits as have been given by Mr. Huxtable do much harm; they cast a slur on the farmers in general, which they do not deserve.

I am, sir, your humble servant,

Witnesham, Suffolk.

CHAS. POPPY.

FARMING BALANCE-SHEET.

SIR,—As so much is being said and written about Mr. Huxtable's balance-sheet and my own, perhaps some of your numerous subscribers who farm 100 acres of poor heavy clay land, farmed in the average way on the four-course shift, will elucidate the matter by publishing their balance-sheets for the present ruinous season of small crops and low prices.

Judging from the farms that have come under my observation, the account will stand as follows. Of course I speak of heavy clays, which appear to have suffered most. My own accounts this year will be anything but satisfactory; my wheat crop I expect will hardly realize £600, whilst two years since I sold it for £1,050; but we must live by the average of years, and be content.

EXPENSES.

Rent, at 20s. per acre	£100 0 0
Tithes, poor rate, church and highway rates, at 9s. 6d. per acre	47 10 0
Labour (a low estimate), at 30s. per acre	150 0 0
Seeds and seed corn (on 74 acres), at 10s. per acre	37 0 0
Tradesmen's bills, at 5s. per acre	25 0 0
Malt and hops, at 2s. per acre	10 0 0
Losses on live stock, at 1s. per acre	5 0 0
Yearly decrease in value of 4 horses, at 40s. each	8 0 0
Ditto ditto implements	5 0 0
Miscellaneous incidental expenses, at 1s. per acre	5 0 0
Thatching, wear and tear of sacks, hurdles, &c., at 9d. per acre	3 15 0
Farmer's profit for house-keeping, consisting of interest on £800 capital and remuneration for personal attention (this should never be less than £1 per acre)	100 0 0
No charge made for guano, lime, chalk, or other purchased manure	0 0
	£496 5 0

ACRES. PRODUCE.

9 occupied by buildings, banks, fences, ditches, trees, roads, and waste... ..	0 0 0
15 long summer fallow—no crop	0 0 0
5 winter tares or wheat stubble, consumed by horses and stock	0 0 0
3 permanent pasture, ditto	0 0 0
10 red clover, once mown for hay, then fed, all consumed by horses and stock	0 0 0
10 white clover or trefoil, fed all summer by stock	0 0 0
Increased value of live stock fed on the clovers, pasture, hay and straw, including pigs and poultry, calves and butter ...	100 0 0
24 wheat, at 20 bush. per acre, at 48s. per qr... ..	144 0 0
10 beans, at 32 bush. per acre, at 28s. per qr... ..	56 0 0
13 oats, at 40 bush. per acre, at 22s. per qr. (42 qrs. consumed by horses, say, four horses, at 2 bush. per week for 32 weeks, and 1 bush. per week for 20 summer weeks; 23 qrs. sold, at 22s.)... ..	25 6 0
100 acres gross produce, £3 5s. per acre	£325 6 0
Loss to balance expenses on the other side	170 19 0
	£496 5 0

I appeal to all practical men whether I have not drawn far too favourable a sketch of the produce and price. The expenses also are scarcely charged high enough, particularly for labour, and no allowance is made for purchased manures or oil cake.

As to yield of wheat, I know of many good heavy clay farmers who have been astounded on finding they only got two, three, and four sacks per acre, although the appearance of the growing crop promised a much greater return. I consider, therefore, much credit is due to Mr. Huxtable for showing such good results; but when we look at the enormous amount of capital and labour employed, and the large quantity of food produced, we

must all agree that we owe him a very heavy debt of gratitude.

The employment of so many labourers must cause a larger consumption of manufactures and exciseable articles, and thus raise the revenue, benefit trade, manufactures, and commerce, whilst a proportionate diminution will take place in poor rates, demoralization, and crime. Let us, then, for the general good, sink all minor and petty differences. Let us follow Mr. Huxtable's example, and unite, so far as our means will permit, to enlarge the path of agriculture, and illuminate it with the light of science.

I am, sir, your very obedient servant,

J. J. MECHI.

Tiptree Hall, Kelvedon, Essex, Jan. 22.

MR. HUXTABLE'S BALANCE SHEET.

TO THE EDITOR OF THE WESTERN TIMES.

SIR,—*The Western Times* newspaper being the channel through which Mr. Huxtable's EXTRAORDINARY STATEMENT on farming was conveyed throughout the west of England, through the same medium I asked (three weeks since) Mr. H. to reply to the few questions then put, which, if he will be kind enough to do in your *next week's paper*, will clear up the mystery therein contained. Most assuredly Mr. Huxtable CAN give us (the farmers) an account of ALL THE ITEMS and articles for which he has paid or received money on the farm, during one or more years—then we could judge of his system, whether it be right or wrong. The late balance sheet was such as NO MAN of average understanding COULD UNDERSTAND, and one that, without a lucid explanation of all the matters therein contained, will have the exact contrary effect of what Mr. Huxtable must have wished for. Any very extraordinary statement is doubted, unless it be well explained; and seeing the damage that will be done by withholding such explanation as I have asked for, and THE BENEFIT that will accrue from giving it, I hope Mr. Huxtable will give us first a description of the whole of his farm, the system of cropping it, a full description of the entire stock that HAS, AND IS BEING KEPT upon it—the cost of all; in fact, an account of every item that has been paid or received for during his term of farming the lands.

Exeter, Feb. 7.

ONE WHO FARMS.

METROPOLITAN SEWAGE MANURE COMPANY.

—On Tuesday a deputation from the Metropolitan Commissioners of Sewers, consisting of Viscount Ebrington, M.P., Mr. Cutlbert Johnson, and Mr. Barford, accompanied by their surveyor, Mr. Gotto, inspected the works of this company at Stanley-bridge, Fulham. The deputation was received by

Mr. H. P. Fuller, the chairman of the company, Dr. Guy, and Colonel Warren, and Messrs. Cox, Floyd, and Kime, directors, and Mr. Greig, the secretary. Having viewed the works, the various gentlemen proceeded to a field about a quarter of a mile distant, to which pipes from the company's works had been laid, to witness the mode in which it is proposed to irrigate the market-garden and other lands with sewage-water, by means of hose with movable metal arms and fan-like distributors, by which it is calculated that twenty tons of water can be showered over an acre of ground by one man in about an hour. The experiments were considered highly satisfactory, and were viewed with great interest by a large number of market-gardeners who were on the ground. It is satisfactory to find that the differences which at one time existed between this company and the Commissioners of Sewers have been amicably settled, and that they now act together with the utmost cordiality, the commissioners showing every disposition to assist the company to the utmost of their power. The company have already laid down their apparatus for irrigating nearly 1,000 acres of land, and a memorial was lately presented to the Commissioners of Sewers in their favour, signed by the holders of nearly 70,000 acres.—Globe.

ARABLE OR PASTURE.—A great lawyer, who lived two centuries since, Sir Edward Coke, complained of the disadvantage which was felt in his day of laying down arable land to pasture. His statement is in accordance with the views of the most enlightened agriculturists of the present day. In his well-known comment on Littleton, he says:—"Agriculture or tillage is of great account in law, as being very profitable to the commonwealth, wherein the goodness of the habit is best known by the privation, for by laying of lands used in till to pasture, six maine inconveniences do daily increase. First, idleness, which is the ground and beginning of all mischief; 2, depopulation and decay of townes; for where in some townes 200 persons were occupied, and lived by their lawful labours, by converting of tillage into pasture there have been maintained but two or three herdsmen; and where men have been accounted sheepe of God's pasture, now become sheepe men of these pastures; 3, husbandry, which is one of the greatest commodities of the realme, is decayed; 4, churches are destroyed and the service of God neglected by diminution of church livings (as by decay of tithes, &c.); 5, injury and wrong is done to patrons and God's ministers; and 6, the defence of the land against forraine enemies is enfeebled and impaired, the bodies of husbandmen being more strong and able, and patient of cold, heat, and hunger, than of any other. The two consequents that follow these inconveniences are:—1st, the displeasure of Almighty God; and 2dly, the subversion of the polity and good government of the realm; and all this appeareth in our bookes. And the common law giveth arable land (which anciently is called hyde and gaine) the pre-eminency and precedency before meadows, pastures, woods, mynes, and all other grounds whatsoever; and *aneria carnea*, the beasts of the plough, have in some cases more privilege than other cattell have."

THE WAGES AND PAUPERISM OF THE SEVENTEENTH CENTURY.

The great criterion of the state of the common people is the amount of their wages, and as four-fifths of the common people were in the 17th century employed in agriculture, it is especially important to ascertain what were then the wages of agricultural industry. On this subject we have the means of arriving at a conclusion sufficiently exact for our purpose.

Sir Wm. Petty, whose mere assertion carries great weight, informs us that a labourer was by no means in the lowest state who received for a day's work fourpence with food, or eightpence without food. Four shillings a week therefore, according to Petty's calculation, were fair agricultural wages. That this calculation was not remote from the truth we have abundant proof. About the beginning of the year 1685, the justices of Warwickshire, in the exercise of a power entrusted to them by an Act of Elizabeth, fixed at their Quarter Sessions a scale of wages for their county, and notified that every employer that gave more than the authorised sum, and every working man who received more, would be liable to punishment. The wages of a common agricultural labourer, from March to September, they fixed at the precise sum mentioned by Petty—viz., four shillings a week without food. From September to March, the wages were to be only three shillings and sixpence per week.

But in that age, as in ours, the earnings of the peasant were very different in different parts of the kingdom. The wages of Warwickshire were probably about the average, and those near the Scottish border below it: but there were more favoured districts.

In the same year (1685) a gentleman of Devonshire, named Richard Dunning, published a small tract, in which he described the condition of the poor of that county. That he understood his subject well it is impossible to doubt, for a few months later his work was reprinted, and was by the magistrates assembled in Quarter Sessions at Exeter strongly recommended to all parochial officers. According to him, the wages of the Devonshire peasant were, without food, about five shillings a week.

Still better was the condition of the labourer in the neighbourhood of Bury St. Edmund's. The magistrates met there in the Spring of 1682 to fix the rate of wages, and resolved, that where the labourer was not boarded, he should have five shillings a week in Winter, and six shillings in Summer.

In 1661, the judges of Chelmsford had fixed the wages of the Essex labourer, who was not boarded, at six shillings in Winter and seven shillings in Summer. This seems to be the highest remuneration given in the kingdom for agricultural labour between the Restoration and the Revolution, and it is to be observed that in the year in which this order was made the necessities of life were immoderately dear. Wheat was then at 70s, the quarter, which would even now be almost considered a famine price. Now another thing, these facts are in perfect accordance with another fact which seems to deserve consideration. It is evident, in a country where no man can be compelled to become a soldier, the ranks of an army cannot be filled if the Government offers much less than the wages of common rustic labour. At present, the pay and beer money of a private in a regiment of the line amount to seven shillings and sevenpence per week. This stipend, coupled with the hope of a pension, does not attract the English youth in suffi-

cient numbers, and it is found necessary to supply the deficiency by enlisting largely from the poorer population of Munster and Connaught. The pay of the private foot soldier in 1685 was only four shillings and eightpence a week: yet it is certain that the Government found no difficulty in obtaining many thousands of English recruits at very short notice. The pay of the common foot soldier in the army of the Commonwealth had been seven shillings a week: that is to say, as much as a corporal received under Charles the Second; and seven shillings a week had been found sufficient to fill the ranks with men decidedly superior to the generality of the people. On the whole, therefore, it seems reasonable to conclude that in the reign of Charles the Second the ordinary wages of the peasant did not exceed four shillings a week, but that in some parts of the kingdom five shillings, six shillings, and during the Summer months even seven shillings were paid. At present, a district where a labouring man earns only seven shillings a week is thought to be in a state shocking to humanity. The average is very much higher; and in prosperous counties the weekly wages of husbandmen amount to twelve shillings, fourteen shillings, and even sixteen shillings.

The remuneration of workmen employed in manufactures has always been higher than that of the tillers of the soil. In the year 1680, a Member of the House of Commons remarked that the high wages paid in this country made it impossible for our textures to maintain a competition with the produce of the Indian looms. An English mechanic, he said, instead of slaving like a native of Bengal for a piece of copper, exacted one shilling a day. Other evidence is extant, which proves that one shilling a day was the pay to which the English manufacturer then thought himself entitled, but that he was often forced to work for less. The common people of that age were not in the habit of meeting for public discussion, of haranguing, or of petitioning Parliament. No newspaper pleaded their cause. It was in rude rhyme that their love and hatred, their exultation and their distress, found utterance. A great part of their history is to be learned only from their ballads. One of the most remarkable of the popular lays chanted about the streets of Norwich and Leeds in the time of Charles the Second may still be read in the original broadside. It is the vehement and bitter cry of labour against capital. It describes the good old times, when every artisan employed in the woollen manufacture lived as well as a farmer. But those times were past. Sixpence a day was now all that could be earned by hand labour at the loom. If the poor complained that they could not live on such a pittance, they were told they were free to take it or leave it. For so miserable a recompense were the producers of wealth compelled to toil, rising early and lying down late, while the master clothier, eating, sleeping, and idling, became rich by their exertions. A shilling a day, the poet declares (from a ballad in the British Museum), is what the weaver would have if justice were done. We may therefore conclude, that, in the generation which preceded the Revolution, a workman employed in the great staple manufacture of England thought himself fairly paid if he gained six shillings a week.

It may here be noticed, that the practice of setting children prematurely to work—a practice which the State, the legitimate protector of those who cannot protect themselves, has in

our time wisely and humanely interdicted—prevailed in the 17th century to an extent which, when compared with the extent of the manufacturing system, seems almost incredible. At Norwich, the chief seat of the clothing trade, a little creature of six years old was thought fit for labour. Several writers of that time, and among them some who were considered as eminently benevolent, mention with exultation the fact that, in that single city, boys and girls of tender age created wealth, exceeding what was necessary for their own subsistence by £12,000 a year. The more carefully we examine the history of the past, the more reason shall we find to dissent from those who imagine that our age has been fruitful of new social evils. The truth is, that the evils are, with scarcely any exception, old. That which is new is the intelligence which discerns and the intelligence which remedies them.

When we pass from the weavers of cloth to a different class of artisans, our inquiries will still lead us to nearly the same conclusions. During several generations the Commissioners of Greenwich Hospital have left a register of the wages paid to different classes of workmen who have been employed in the repairs of the building. From this valuable record it appears that in the course of 120 years the daily earnings of the bricklayer have risen from two shillings and sixpence to four shillings and tenpence; those of the mason, from two shillings and sixpence to five shillings and threepence; those of the carpenter, from two shillings and sixpence to five shillings and fivepence; and those of the plumber, from three shillings to five shillings and sixpence.

It seems clear, therefore, that the wages of labour, estimated in money, were, in 1685, not more than half of what they are now; and there were few articles, important to the working man, of which the price was not, in 1685, more than half of what it is now. Beer was undoubtedly much cheaper in that age than it is at present. Meat was also cheaper, but was still so dear that there were hundreds of thousands of families who scarcely knew the taste of it.* In the cost of wheat there has been very little change. The average price of the quarter during the last twelvemonths of Charles the Second was fifty shillings. Bread, therefore, such as is now given to the inmates of a workhouse, was then seldom seen even on the trencher of a yeoman or of a shopkeeper. The great majority of the nation lived almost entirely on rye, barley, and oats.

The produce of tropical countries, the produce of the mines, the produce of machinery was positively dearer than at present. Among the commodities for which the labourer would have to pay higher in 1685 than his posterity pay in 1848 were, sugar, salt, coals, candles, soap, shoes, stockings, and generally all articles of clothing and all articles of bedding. It may be added, that the old coats and blankets would have been, not only more costly, but less serviceable than the common fabrics.

It must be remembered, that those labourers who maintained themselves by means of wages were not the most necessitous members of the community. Beneath them lay a large class, which could not subsist without some aid from the parish. There can hardly be a more important test of the condition of the common people than the ratio which this class bears to the whole society. At present, the men, women, and children who receive relief are, in bad years, one-tenth of the inhabitants of England, and in good years one-thirteenth: Gregory King

estimated them in his time at more than one-fifth, and this estimate, which all our respect for his authority will scarcely prevent us from calling extravagant, was pronounced by Davenant eminently judicious.

We are not quite without the means of forming an estimate for ourselves. The poor-rate was undoubtedly the heaviest tax borne by our ancestors in those days. It was computed in the reign of Charles the Second at near £700,000 a-year, much more than the produce either of the Excise or of the Customs, and little less than half the entire Revenue of the Crown. The poor-rate went on increasing rapidly, and appears to have risen in a short time to between £800,000 and £900,000 a year; that is to say, to one-sixth of what it now is. The minimum of wages, estimated in money, was half of what it is; and we can therefore hardly suppose that the average allowance made to a pauper can have been more than half of what it now is. It seems to follow that the proportion of the English people, which received parochial relief then, must have been larger than the proportion which receives relief now. It is good to speak on such questions with diffidence, but it has certainly never yet been proved that pauperism was a less heavy burden, or a less serious social evil during the last quarter of the 17th century than it has been in our time.*

In one respect it must be admitted that the progress of civilization has diminished the physical comforts of a portion of the poorest class. It has already been mentioned, that, before the Revolution, many thousands of square miles, now enclosed and cultivated, were marsh, forest, and heath. Of this wild land, much was, by law, common; and much of what was not common by law was worth so little that the proprietors suffered it to be common in foot. In such a tract, squatters and trespassers were tolerated to an extent now unknown. The peasant who dwelt there could, at little or no charge, procure occasionally some palatable addition to his hard fare, and provide himself with fuel for the Winter. He kept a flock of geese on what is now an orchard rich with apple blossoms. He snared wild-fowl on the fen, which has long since been drained, and divided into corn fields and turnip fields. He cut turf among the furze bushes on the moor, which is now a meadow bright with clover and renowned for butter and cheese. The progress of agriculture and the increase of population necessarily deprived him of these privileges. But against this disadvantage, a long list of advantages is to be set off. Of the blessings which civilization and philosophy bring with them, a large proportion is common to all ranks, and would, if withdrawn, be missed as painfully by the labourer as by the Peer. The market-place which the rustic can now reach with his cart in an hour was 160 years ago a day's journey from him. The street which now affords to the artisan, during the whole night, a secure, a convenient, and a brilliantly lighted walk, was 160 years ago so dark after sunset that he would not have been able to see his hand, so ill-paved that he would have run constant risk of breaking his neck, and so ill-watched that he would have been in imminent danger of being knocked down and plundered of his small earnings. Every bricklayer who falls from a scaffold, every sweeper from a crossing who is run

* Fourteenth Report of the Poor Law Commissioners, Appendix B, No. 2, Appendix C, No. 1, 1848. Of the two estimates of the poor-rate mentioned in the text, one was formed by Arthur Moore; the other, some years later, by Richard Dunning. Moore's estimate will be found in Davenant's Essay on Ways and Means; Dunning's in Sir F. Eden's valuable work on the Poor. King and Davenant estimate the paupers and beggars in 1686 at the incredible number of 1,330,000 out of a population of 5,500,000; in 1846 the number of persons who received relief was only 1,382,089, out of a population of about 17,000,000.

* King, in his "Natural and Political Conclusions," roughly estimated the common people of England at 880,000 families. Of these families, 440,000, according to him, ate animal food twice a week. The remaining 440,000 ate it not at all, or at most not oftener than once a week.

over by a carriage, may have his limbs set and his wounds dressed with a skill such as 160 years ago all the wealth of a great Lord like Ormonde, or a great merchant-prince like Clayton, could not have purchased. Some frightful diseases have been extirpated by science, and some have been banished by police. The term of human life has been lengthened over the whole kingdom, and especially in the towns. The year 1685 was not ac-

counted sickly, yet in 1685 more than one in twenty-three of the inhabitants of the capital died. At present only one inhabitant of the capital in forty dies annually. The difference in salubrity between the London of the 19th century and the London of the 17th century is very far greater than the difference between London in an ordinary season and London in the cholera.—Macaulay's History of England.

THE LAW OF THE NUTRITION OF ANIMALS.

An interesting article on "The Law of the Nutrition of Animals," pointed out by Dr. R. D. Thompson, illustrated by F. Knapp, Ph. D., Professor of Technology and Chemistry in the University of Giessen, has appeared in "*The London, Edinburgh, and Dublin Philosophical Magazine.*" The effect of different kinds of food upon the quality, as well as quantity of milk given by cows is there shown by several experiments. The same principle, it would seem, applies to the human frame, in respect to the character and effect of the particular food upon which man subsists. The writer of this article says:—"In order to judge of the value of the different kinds of food for practical purposes, it must first be ascertained in what relation the blood-forming or nutritive constituents stand to the calorifiant. The kind of food must also vary with age, kind of employment, way of living, climate, &c. With the highest probability we may predicate, that a man in an employment demanding great mental activity will require, in addition to a greater proportional amount of bodily rest, that the calorifiant and blood-forming constituents should be in a different proportion in the food to that of the man whose employment requires great bodily activity." Our daily experience proves what little attention is given to these important considerations in the adaptation of the character of the food persons take to the nature of the employment or occupation in which they may be engaged. It is further observed in the article in question that—"Those barbarous nations which live entirely on flesh receive a large excess of blood-forming matter, which may be counterbalanced either by the addition of calorifiant matter, or by increased bodily exercise. On the contrary, the poorer classes amongst us are obliged to live on the cheapest food they can obtain, such as potatoes, and which are one-half poorer in blood-forming or nutritive matter than the different kinds of grain. In the first case, nature has only to get rid of an excess; but in the latter she has to supply a deficiency, which must be done by bread, milk, &c." "The previous views," says Dr. Thompson on Food, "sufficiently explain the experiments which have been made upon cows, in which the result was unfa-

vourable when they were fed on potatoes and beet-root in considerable quantities, as both of these substances contain an excess of calorifiant matter. It is well known to feeders of cattle that an animal fed on large quantities of potatoes is liable to such complaints as affection of the skin, and also to loss of weight. These, consequently, it may readily be inferred, arise from the want of the proper balance between the elements of food." Continuing his remarks on the effect of living on the cheapest food, as potatoes, &c., the writer goes on to say—"It must be evident to every one that this way of living is unnatural in the extreme. A person living entirely on potatoes may be said to be on the brink of a precipice, without a single inch of ground before him, when the only safety lies in retreat. The disadvantages may be shown in three different ways: 1st, It leads to imperfect bodily strength and unsoundness of health; 2nd, To increased mortality and shortness of life; 3rd, To loss of energy, and to a kind of stupidity, and want of interest in everything but what concerns the merest animal interests. *A country in this state is almost ripe for rebellion, and ready to join in every insurrection.*" The inference thus deduced, and which we have marked in italics, is most remarkable, and demands the most serious attention of statesmen. If this deduction be sound, the exciting cause to turbulence, insurrection, and rebellion in Ireland is assignable not to the peculiar character of the people, but to the nature of their food, to the "calorifiant matter" contained in the potato. The subject is curious, and well deserving of investigation. Will a change of food produce an immediate effect? or will it require a generation or two to reduce the effect which an "excess of calorifiant matter" has produced upon the constitutional temperament of the people? Another curious subject of speculation would be whether the steady plodding habits of our brethren north of the Tweed be the result of the very general use of oatmeal, as food. The following observations upon the use of the potato are deserving of notice: "From the above remark, it would appear that the manufacture of brandy from potatoes is a separation of the excess of calorifiant matter, whilst the residue contains all the blood-

forming constituents: it is mixed with the gluten of the malt, and thus forms a half-soluble food. In order, however, that it may suit the nature of ruminating animals, straw or some such food should be added to it. As potatoes contain about one-part

of albumen for ten of starch, the half of the starch may be converted into spirit, while the residue will consist of a mixture having the nutritive and calorifant constituents in the same proportion as in grain." (1-5.)

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover square, on Tuesday, the 6th of February. Present: The Earl of Chichester, president, in the chair; Duke of Richmond, Earl of Ducie, Colonel Austen; Mr. Raymond Barker, Mr. Barnett; Mr. S. Bennett, Mr. Blanshard; Mr. Burke; Colonel Challoner; Mr. Childers, M.P.; Mr. S. Druce; Mr. Garrett, Mr. Grantham; Mr. Hamond; Mr. Fisher Hobbs; Mr. Hudson (Castleacre); Mr. Jonas; Mr. Kinder; Mr. Miles, M.P.; Mr. Milward; Mr. Pendarves, M.P.; Mr. Shaw; Mr. Shaw, jun.; Mr. Shelley; Mr. R. Smith; Mr. Stansfield, M.P.; Mr. Thomas Turner; Professor Way; and Mr. Jonas Webb.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the report of that committee to the end of the previous month; from which it appeared, that on the 31st of January last the current cash-balance in the hands of the bankers was £1848. The chairman explained, that this balance included the sum of £1000 received through the authorities of Norwich, as a subscription towards the expenses of the ensuing country meeting to be held in that city in July next, as well as £314 received on account of arrears of subscription paid up, and £534 as that of compositions for life received since the December meeting. The chairman also reported that £1000 stock had been sold out of the invested capital of the Society for the purpose of completing the sum required to repay to the bankers of the Society the loan contracted with them in August last. The chairman further presented to the Council the following report of a special meeting of the Finance Committee held on the 5th instant—namely: "It appearing that the Journal is a principal inducement to the agricultural public to join the Society, and to keep the subscriptions paid up, the Finance Committee are of opinion that it would prove advantageous if the Council would increase the price of all future Journals to 10s. each Part for all non-members of the Society." These reports and the special recommendation of the committee were unanimously adopted and confirmed by the Council.

List of Members.—On the motion of Mr. Fisher Hobbs, seconded by the Duke of Richmond, the Journal Committee were requested to prepare for publication, in the next volume of the Journal, a list of the Governors and Members on the books of the Society at the date of publication.

Cottage Tracts.—The Council ordered a further reprint, to the amount of 1,500 copies, of the Society's

Cottage Tract on Gardening, for distribution, at prime cost, by Members of the Society.

Norwich Meeting.—The Council decided that the Norwich Meeting should be held in the week commencing Monday, the 16th of July next; and ordered the Norwich Prize Sheets for final publication.

The Duke of Richmond presented, on the part of Mr. Thompson, V.S., a silver and elastic gum tube, intended to be used in assisting the flow of milk from cattle suffering from diseased teats; Mr. Shelley a copy of his work entitled "A Plea for Truth;" and Mr. Jonas a copy of Mr. Hine's work on the Giant Saintfoin. Numerous papers were reserved for discussion at the ensuing Weekly Meeting, to be held on Tuesday, the 13th February.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday, the 13th February. Present—Mr. Raymond Barker, in the Chair; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. F. C. Cherry; Mr. Dyer; Mr. Foley, M.P.; Mr. Fuller, M.P.; Mr. T. C. Hincks; Mr. C. W. Hoskyns; Mr. Majendie; Mr. W. Miles, M.P.; Mr. Parkins; Mr. R. Robson; Mr. Slaney, M.P.; Dr. Spurgin; Mr. T. Turner, and Mr. T. R. Tweed.

Prognostics of Weather.—Mr. Charles Fulbrook, of Dallington, near Hurst-green, Sussex, having favoured the Society with a series of weekly communications on the probable state of the weather during the previous five weeks, these communications were laid before the Council. Mr. Fulbrook stated that his weekly predictions of weather were founded on the average result of meteorological observations made by Mr. Luke Howard in the neighbourhood of London, as well as by himself at no great distance from the metropolis; and that they had reference only to a geographical region comprised by that portion of the south-eastern district of England, of which London might be considered as the centre.—The Secretary having reported that Mr. Fulbrook's predictions had been remarkably fulfilled, the Council directed their thanks to be transmitted to Mr. Fulbrook for the favour of his communications, with a request that he would continue them, and when he was sufficiently prepared with just data connected with the principles on which his law of probabilities was founded, that he would have the goodness to report the same to them for consideration as to the desirableness of a reference being made of such report to the Journal Committee.—Mr. Luke Howard presented to the Society the fourth and

fifth parts of his "Barometrographia," being the conclusion of that important and interesting series of illustrations of changes of weather as shown to the eye by proportional diagrams exhibiting the results of his long-continued and well-known observations of the weather, especially in reference to the climate of London. The Council ordered their best thanks for the favour of this present.

Cutting-out and Filling-in Drains.—Mr. George Blakeway, of Arley Green, near Bewdly, informed the Council of the success with which he had employed a machine of his own invention for the purpose of cutting out drains in the stiffest clay, and at the same time of laying down pipes and tiles with the greatest facility, and as exactly as by manual adjustment. He referred to the case of the Rev. E. Hardwick, and to that of Mr. Wright, of Park Attwood, near Kidderminster, on whose lands many thousand draining pipes had been laid down by the aid of the machine in question, and with perfect success. The depth of the drains was 20 inches, but by first ploughing a furrow, the depth might be increased accordingly. He conceived that by this machine, the present expense of draining might be reduced one-half. He had also succeeded in contriving a plan for a stove to burn small pipe-tiles.—Mr. Slaney, M.P., remarked that the Council had done him the favour, at the Northampton meeting, of proposing a prize, at his suggestion, for the best drain-plough to cut out at one, two, or three cuts, to the greatest depth, with not more than four horses, so as to prepare a drain so far for deeper cutting, to which prize he had the leave of the Council to offer an additional sum on his own part for the encouragement of competition for an implement in which he felt so sanguine an expectation of a successful issue. He had also leave to offer, on his own part, a further premium, independently of the former, for the best plough to fill in the soil cast out of drains, with not more than four horses (two and two abreast), and not to exceed £5 in cost. The prizes for these implements having been withheld, on account of the unsatisfactory state of the ground at the season of the meeting for the trial of such implements ("Journal," vol. viii. p. 345), Mr. Slaney was perfectly willing (notwithstanding the opinion given on the subject by Mr. Parkes, in reference to the inutility of such implements) again to offer premiums for these ploughs, to which he hoped other members of the Society would make additions, in order that the competition for their construction and use might be revived, and the trial conducted (as suggested by Mr. Miles) at a more suitable season, namely, in the months of November and December, when the land had absorbed a great quantity of moisture, and the implements would, in consequence, work to the greatest advantage: for, however difficult it might be to attain perfection in these implements, or to construct them for attaining all the objects required, Mr. Slaney felt quite convinced that a great saving of labour might be effected by only the partial cutting out and filling in of drains by implements of the kind proposed. If only a plough of a simple character were employed, drawn by horses separated from each other, and removing by two

cuts the soil only to the depth of 2 feet, and another adapted for the purpose of filling in, a greater economy, both of time and money, would, in his opinion, be the result, than in the case of the work executed by hand labour. He concluded by expressing his hope that this subject would receive the attention of the Council.

Coke for Draining.—Dr. Spurgin, of Guildford-street, Russell-square, reported to the Council the economy and success with which he had applied the common coke, obtained from coal by stifled combustion, to the purposes of under-draining, instead of pipes or tiles. He found this substance, which might be regarded as enamelled charcoal, to be perfectly permeable by water. During the early part of last summer he had an opportunity of putting this material to the requisite test, and the result proved perfectly satisfactory; for, although the experiment was made in a stiff clay, rammed down closely over the coke, the water in due course ran freely from all the drains thus constructed. He found that 30lbs. was sufficient to form a permanent and efficient drain along every rod of trench; and the expense only one-half of that incurred when employing the ordinary pipes or tiles. He also intended making use of coke for the purpose of irrigating his salt-marshes, as well as land reclaimed from the sea, and meadows conveniently situated for such an operation; and he expected to be able to effect this object independently of open water-courses.

Stoppage of Drains.—Captain Richardson, of Sutton-hurst, near Lewes, transmitted to the Council a specimen of the fibrous matter that had stopped up a portion of his pipe-drains, and impeded the progress of the water through them. Although a hedge of willows had formerly run across the land where these drains were laid down, from the roots of which still remaining in the ground the long, attenuated fibrous masses thus collected in the drains might probably have had their origin, it was to him remarkable that the exact limit of the stoppages was the extent to which mangold-wurzel had been planted on the land in question; and he was, therefore, inclined to attribute the stoppages either to fibres proceeding from the mangold-wurzel roots, or to some effect their presence might have had on the growth of the roots of the willow.

Potato Culture.—Mr. Bosanquet, of Broxbournebury, Hertfordshire, reported to the Council the result of his cultivation of the South American Potatoes, of which the seed had been obtained from Chili by Mr. Miles, M.P., and presented to the Council at their meeting on the 15th of March last year, for distribution among such of the members then present as were willing to favour the Society by the trial and report of its merits. From a portion of these seeds, Mr. Bosanquet in that month raised plants in pots with light rich earth placed in his vinery, paying great attention to the regulation of the heat and the gradual exposure of the plants to the open air, as well as to a gradual extension of the mass of soil required for their growth. The plants thrived well, and grew very luxuriantly, the tops being full 2 feet high. The appearance of the leaves was rather different from that of other potato plants, as

they were longer, smoother, and of a darker green. About the middle of July, the potato disease having made its appearance in his garden, he noticed that the Chilian plants were also affected, the appearance of the disease being similar to that exhibited by the common potato, excepting that on the new plants was observed a greater degree of *Botrytis* or mouldiness about the stalks, while the progress of the disease was not so rapid. By degrees, however, the whole of the tops were destroyed; but it was found that the disease had not extended in every case to the roots, a considerable number of these having remained sound and formed small tubers. On digging up the ground in November, the produce was found to be nearly three quarts, containing above 1,200 small tubers, varying in size from that of a large pea to that of a cherry; the number of plants raised and set out having been about 150. Mr. Bosanquet stated that, as the tubers appeared to be perfectly sound, he intended to keep them in sand until the spring, and then to plant them in the open ground; and he remarked that there was nothing extraordinary in the smallness of the tubers, as potatoes raised from seed were never large ones the first year. He considers the circumstance of these potatoes having been attacked by the rot to be presumptive evidence that the disease does not originate in the potato itself; but that, in fact, it is purely atmospheric. He thinks also the opinion, that it commences in the tuber, to be erroneous; as well as that which entirely attributes its origin to the soil in which the potatoes are grown—as potatoes grown in different soils are attacked indiscriminately, excepting that whatever causes a luxuriant growth of the tops of the plant predisposes them to the attack of the rot and renders its effects more destructive, the disease appearing to be more prevalent in all rich garden ground, and, in fact, in all highly-manured ground. Mr. Bosanquet then proceeded to detail the results he had obtained from the cultivation of the common potato under different circumstances. In 1847 he grew some potatoes (planted between the end of February and the middle of March) on a piece of ground which had previously been a plantation, and grubbed up. It had been trenched, but there was no manure put on. About the 16th of July the disease made its appearance, and the whole of the tops were destroyed, and became so rotten as to be quite offensive. He had them pulled up, and the potatoes left in the ground until November. When taken up they were found to be remarkably good, there not being above 50 bad potatoes in the space of about $1\frac{1}{2}$ acres, and they have kept perfectly well through the winter. In 1848, he again grew potatoes on one-half the same ground, manuring them; and planted the other half with mangold wurzel. The potatoes came up very well on the side planted with fresh sets; and on the other, where the mangold wurzel had been put in, the portions of potato which had remained in the ground produced a great number of fine plants with plenty of tubers. About the middle of July, however, they were attacked by the disease, which first showed itself in the same spot where it had commenced the year before, being a part of the field rather lower

and more damp than any other part. Thence it spread over the whole field as it had done in the previous year. The self-sown plants, although the largest and finest, suffered the most severely. He had all the tops pulled off, as in the year before, and saved a very fair crop of good potatoes; the proportion of bad ones being however greater, in consequence, as he imagined, of the greater degree of wetness in the season. He had also grown potatoes last year on a piece of gravelly soil which had been cropped with barley in the year preceding, and was manured for the potatoes. These were not planted so early as the others by about a month. The crop was a very promising one, but was attacked by the disease about the beginning of August. He had the tops pulled off, and saved about 700 bushels of good potatoes (besides small ones) out of about 4 acres. In another field of 8 acres, a stiff clay soil, except in one part where it is rather gravelly (it being woodland recently grubbed up), he had a crop of potatoes which had been planted at about the end of April. They had not done very well, on account of the wetness of the season, excepting in some parts. At the beginning of August the disease manifested itself, commencing on a spot where some charcoal had been burnt, and where the tops had grown more luxuriantly than elsewhere. It extended gradually over the whole field, and did a great deal of mischief to the tubers; so much so that he did not save above 500 bushels of good potatoes out of the whole. In this case, the tops had not been taken off. Mr. Bosanquet concluded his communication with the following observations: "I trouble you with these remarks upon a matter of so much importance as the saving of this valuable crop; but I am fearful that preventing the potato disease is beyond the power of man. It is one of those mysterious visitations of which the causes will most probably be for ever hidden from us, but which, like other visitations of the same kind, will no doubt pass away in time. I am decidedly of opinion that it arises from some atmospheric influence, and that it always commences in the tops, and not in the tubers, and extends gradually from the former to the latter; very much in the same way as mortification extends in the human frame from diseased parts towards sound ones. As far as one can judge by appearances, it is more prevalent when the atmosphere is much charged with electric matter, and when there is a fall of temperature accompanied with much wet. A return of fine dry weather seems to arrest the progress of the disease, if it does not entirely stop it. I have found that potatoes affected by the disease may be preserved for a long time, if kept in a dry warm place; but that if left in the ground, or in a damp place, they speedily rot, showing, what is singular, appearances of premature vegetation, by throwing out shoots. The most certain plan of securing a crop is to plant early—say at the end of February or during March. The tubers will then be completely formed and ripe by the period when the disease usually attacks them. I am also a strong advocate for pulling off the tops. It can be done at an expense not exceeding the value of 1 bushel per acre, and what is that compared with the chance of

saving perhaps 100 ?"—Mr. Miles, M.P., had also been able to preserve some tubers raised from the same seed from Chili as he had the pleasure last year of presenting to the Council. The peculiarity observable in the plant was the enormous leaf it bore: he had never seen such a leaf on any other potato plant; and the haulm was so strong as to be less affected by disease than that of the common potato. He had the satisfaction of believing that the potato disease was now wearing out, the tubers being less affected and infinitely better. His own were perfectly sound; and agreeably with the result of his trial of seedling potatoes in 1847 (*Journal*, vol. viii., p. 420), indicating different effects of disease in different varieties of potato, he had found one variety that during the last three years had uniformly resisted every taint of disease; and this was the white Scotch kidney.—Mr. Parkins had obtained a similar result from the trial of the seed from Chili, and fully agreed with Mr. Miles in the modified condition of the potato disease. He intended to have the tops of his potatoes twisted off in July as soon as the plant came into flower.—Mr. Fuller, M.P., had sound potatoes on his estate in Sussex, but in Anglesey and Carnarvonshire they were all diseased. He concurred in all that had been said as to the value of early planting. In Ireland, by converting the bog-land into what were termed "lazy-beds," sound potatoes had been grown where previously the result was that of diseased ones.—Mr. Slaney, M.P., believed the disease to have become much more mitigated in its character. He had found the white varieties the least affected.—Dr. Calvert thought there was a great difference in the different varieties in reference to disease under particular circumstances; but, in all cases, he concurred in opinion with those who advocated early planting. He thought an excess of moisture induced to the disease.—Mr. Thomas Turner considered the removal of the haulm decidedly beneficial. He had potatoes planted about the first week in June last year, after the growth and removal of a crop of rye by the scythe, and the appearance of disease in the haulm presented itself at the latter end of July, when the plant was in flower, and no disease whatever could at that time be detected in the tuber, which was then about the size of a trap-ball.—Mr. Miles had the haulms removed by a man standing over the plant, with his feet placed firmly on each side of it, for the purpose of securing the root and tubers in the ground while the head was pulled off upwards by his two hands.

Seed Wheat.—A communication was laid before the Council on the accidents resulting from the employment of arsenic as a steep for seed Wheat to prevent disease in the grain, in consequence of such grain being picked up by pheasants and other game, causing their flesh to become poisonous as food.—Dr. Calvert stated the success with which he had removed smut from wheat, by washing it by means of a stream of water. Before such washing the grain had been as black as if mixed with soot, but became perfectly clean by that process; and when sown, the crop was found to be perfectly free from taint or disease of any kind. He had tried the various methods proposed to remove smut, but washing had proved the only one he could depend upon.—Mr. Dyer

had used the sulphate of copper, or blue vitriol, with uniform and perfect success, at the rate of 3 lbs. to the sack. His land at first was very subject to the production of smut in his wheat crops, but now he had ninety-five acres without a smutty ear in it.—Mr. Tweed had never met with any accident from arsenic; it was a most effectual remedy in preventing disease in seed corn.

Portable Railway.—Dr. Spurgin favoured the Council with the inspection of a model for a rotary railway, on the principle of the simple roller, for use in farms, docks, warehouses, and other places where heavy weights were to be conveyed short distances without the aid of horse-power; as manure from yards, corn from stack-yards, timber from woods, turnips or mangold wurzel from flat heavy land. He considered that this mode of conveyance would prove, in these and similar cases, fully efficient in its action; particularly as it would combine great simplicity with ready adaptability for the purposes required, at a cost not exceeding £10.

Miscellaneous Communications.—Mr. Edmund Clowes, of Cheltenham, on disinfecting (on a change of tenancy) stables, cowhouses, &c., where horses, cattle, or sheep have been infected with disease of any kind.—Mr. White, on diseases amongst neat stock.—Mr. Joseph Long, on flax culture.—Mr. Postle, of Blofield, on the destruction of rats.—Dr. Searle, of Bath, on the nutrition of animals in relation to the production of muscular substance or flesh, instead of fat.—Mr. Majendie, on a variety of wheat from the Asturias, adapted for high mountainous districts.

The Council, having ordered their best thanks for these several communications, adjourned to Tuesday, the 20th of February.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday, the 20th February. Present—Mr. Raymond Barker, in the Chair; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. Christian; Mr. Fuller, M.P.; Mr. Hincks; Mr. C. E. Overman; Professor Simonds; Mr. Slaney, M.P.; Mr. H. A. Smith; Mr. Reynolds Solly; Mr. Thomas Turner; Dr. Walker; and Professor Way.

Analysis of Plants.—Mr. Spooner, V.S., of Southampton, conveyed to the Council the expression of his satisfaction on learning that they had renewed the grant for the analysis of the ashes of plants. He thought the investigation, of which the results had been published from time to time in the journals of the Society, a very important one: but valuable as it was thus to obtain the mineral, inorganic, or fixed constituents of particular plants, as found in their ashes after combustion, there was one protean element not found in such residuum, which every year's experience in the progress of chemical science proved more and more to be of the highest interest and importance in the economy of vegetable life and the products resulting from particular crops. The element to which he alluded was nitrogen; and he would suggest the extension of the Society's plan of analytical operations, in order that the amount of that organic element in the grain or plant before combustion should become a prin-

cial point of inquiry. He considered it to be now admitted on all hands, that a supply of nitrogenous manuring matter was essential to the production of a good or remunerating crop of wheat; for, although a certain amount of grain might be raised independently of such direct application of compounds containing nitrogen, the crop would, in such case, be too light to repay the outlay of cultivation. Mr. Spooner concluded his communication with the following remarks:—"This being the case, why should an analytical inquiry be limited to the inorganic constituents of plants, when, by embracing one organic element, namely, nitrogen, we may obtain all that we require for analysis? For the fact of the other three organic constituents being supplied in the greatest abundance through the medium of the atmosphere, will, I imagine, render their examination by analysis altogether unnecessary; but it will be most interesting and important to ascertain the relative bearings and effects the supply of phosphoric acid and of nitrogen have over each other, and more particularly when the same inquiry will inform us the relative proportion of gluten possessed by various kinds of wheat, or by wheat from various soils, or variously manured."—Professor Way thought the observations of Mr. Spooner perfectly just. It would no doubt be highly interesting to possess an organic analysis of the different crops in relation to their mineral composition. But it was but right that it should be known that the terms of the grant precluded him from employing it for such a purpose. Mr. Spooner had correctly observed, that a knowledge of the amount of nitrogen in different plants was very necessary to the proper application of manures; and Professor Way thought that information would afford many important data, of an approximative character, in reference to the nutritive value of different kinds of food—a subject, he feared, on which at present we were comparatively unacquainted.—The Council then directed their thanks to be conveyed to Mr. Spooner for this suggestion, and his communication to be referred to the Analysis Committee.

Cultivation of Maize.—Mr. Keene, C. E., Member of the Royal Academy of Bordeaux, having resided many years in the Basque provinces, and had his attention particularly directed, since the first failure of the potato crop in England, to the cultivation of the dwarf maize, or Indian corn of the Pyrenees, and to its introduction into this country, attended the Council for the purpose of laying before the members various specimens of that plant and its seed, as well as of the American Indian corn, so long the subject of discussion by other parties on both sides of the Atlantic.—Mr. Keene stated that the peculiar kind of maize, recommended by him for cultivation in England, and which he named "Forty-day Maize," was a hybrid, cultivated by himself for our climate, and so named because it begins to show its flower in about 40 days from the day of sowing. It is distinguishable from the ordinary sorts of Indian corn by the rapidity of its growth, and its capability of resisting great variations of temperature. The stalk bears but one cob, and the whole plant is of dwarf proportions. Dwarf maize is grown on the northern or cold side of the Pyrenees, and is also sometimes seen in the plains of the Landes after rye, but this is not so true a sort as that of the mountainous districts, and the hybrids Mr. Keene produced by crossings from this latter. Seeing the continued failure of the potato crop, he had, during the last two years, cultivated the seed with great care, specially for its introduction into England. Since his arrival in London, he had been informed by the President of the North Cornwall Agricultural Experimental Club that it had been grown exper-

imentally with success in the last season, by one of the members of that Association, and Mr. Keene had reason to believe that the seed was obtained from him in the month of January last year. In reference to the question, whether the mid-day heat of a southern climate was not needful to the successful growth of the plants, he considered that the more equable temperature of the summer months of the south of England would be equally favourable, and that the plant would thrive more steadily than under the influence of the extreme range of heat and cold to which it was subject in the quarter from whence he brought it, where flooding rains in the summer months, and hail-storms frequently checked for days and weeks the advance of vegetation. It had been supposed that Maize would only ripen where the heat is sufficient to bring Grapes to maturity in the open vineyard. This was a mistake, though true of the Indian and American corn. Whoever had been to Bagnères, in the Pyrenees, would remember that vineyards scarcely extend beyond Tarbes, but that fine fields of Maize surround the town of Bagnères, which is about 1,000 yards above the level of the sea. There are no vineyards, and Grapes attain but a poor maturity against a south wall. Even the Apple ripens less perfectly than in England. Now, the Forty-day Maize is a much quicker growing sort than that cultivated around Bagnères; it will gain a month upon it; that is to say, sown at the same period, it would be fit to gather a month earlier, and this precocity would bring it amply within the limits of our worst summers. He hoped that it would be tried in various districts of England, more particularly as there can in no case be any loss, for, as a green crop, it would amply repay all expenses. He explained to the Council that this was a very different sort from "Cobbett's Corn," or the American, which will not ripen in the districts where this Forty-day Maize was grown. One of the dry plants which he showed was, he said, from American Corn, sown in the same field on the same day as the Forty-day Maize; the American was 12 feet high, but bore at harvest time no ripe seed, whilst the other, being only half the height, bore its seed in full maturity. He exhibited a plant with the Haricot Bean turning round it, having been sown with it, and stated that the Forty-day Maize would always ripen earlier than the Bean. He said bread from pure Maize flour, without any admixture of Wheat flour, was the staple food of a large population in the Basque provinces; and, in reference to its nutritive powers, he affirmed that it was by them preferred to Wheat bread, as much more satisfying; partaking of the nature of both bread and vegetable, it could be better eaten without animal food than bread; and that the class of labourers unable to purchase choicer diet always preferred it to Wheat bread, and it maintained them in great strength and vigour of body; but he further observed, that it could not be expected that the labouring classes of England would adopt readily for food such maize as is imported from America—a large flat-grained sort, without sweetness, fit only for cattle food. He had, he said, sought in vain in the London market for even a moderately fair sample of Indian corn flour; it is all stoved and high-dried, to enable it to bear the voyage, and the "life" is taken out of it, rendering it almost insensible to the action of yeast, and so charred, as it were, by the drying process, that it remains gritty and hard, resisting every kind of cooking, more particularly baking. Maize corn grown in England, or unstoved corn of a right sort, imported but ground in England as wanted for use (for it lost its sweetness when it had been ground more than 15 or 20 days), would give a very different result, and be eagerly sought after when once known. The flour could not be imported in a proper state; if unstoved it sours, and is absolutely unwholesome; if stoved, it would be deprived

both of the sweetness and softness of the natural fresh ground meal, and rendered nearly insensible to the action of any kind of leaven. With regard to the money value of maize relatively to that of wheat, he said it ruled in the market rather higher than half the price of the latter, or about the value of barley, and that generally the crop obtained was more than double that of wheat. He then described the process of the culture from the putting the seed into the ground to its gathering in, and said that the thinnings and cuttings paid for all the labour of its culture. He thought that if "Cobbett's corn" had for a time succeeded in any part of England, that success had been followed by failure from insufficient caution in keeping the true seed; for that no corn plant tended to degenerate so rapidly as this by the introduction of any strange sorts, and that the right seed once obtained, the greatest care should be taken to prevent any other whatever from being sown with it. He thus accounted for the repeated failures which kept up prejudice against its growth in England; Indian corn being sown indiscriminately, without any knowledge of its origin or quality, and some of which requires six months of the hottest climates of the world to ripen them. The knowledge of its culture, the right season for putting it into the ground, and the management during the growth, he affirmed to be most essential; of all which, those who continually sow it in England as experiments are ignorant. That these abortive experiments, repeated from year to year, prejudice unfairly the question. He had seen attempts to grow it on a small scale in England, and that by Americans, but the sorts sown gave out large branch suckers, or were sown and came up in tufts; they were remarkable, from the great height the plants attained, but the seed never ripened. Now the right sort very rarely throws out any suckers at the foot, and no two plants should be let grow together, for in such case neither will ripen. They should stand generally at about 9 inches asunder, and, above all, be sown in the right season, in the month of May, for a few days earlier or later might prejudice the crop.

A very interesting discussion then ensued among the members present, on the various conditions connected with the growth of this variety of Maize, and the presumptive evidence of its successful culture in the southern districts of England.—Mr. Slaney, M.P., expressed his willingness to place a portion of his land in Shropshire at Mr. Keene's disposal for experimental purposes connected with the cultivation of the Forty-day Maize, and Prof. Way undertook to institute certain chemical inquiries into the composition of its grain.—The Council then returned Mr. Keene their thanks for the favour of his attendance, for the explanations he had kindly given to the Council, and for the presents he had made to the Society.

Drum-head Cabbage.—Mr. Fuller, M.P., informed the Council that he had for the last two years grown the Drum-head Cabbage from seed obtained by him from Messrs. Thomas Gibbs and Co., the Seedsmen to the Society. His bailiff had last year a very fine crop of 40 tons per acre of this plant, which he thinks a very valuable one, and economical in its cultivation. He gives these Cabbages to the cows, calves, and ewes, as well as to the lambs of last year, and finds all do well on them. The land on which they were sown was very poor land, covered with heath and furze, but which, by well draining and subsoiling, had produced very excellent Turnips, Carrots, and the Drum-head Cabbages now referred to; while on a part of it last year was grown the finest crop of Peas in that part of Sussex, subsequently damaged, however, before carrying, by the wetness of the autumn.—The observations made by Mr. Fuller at the previous meeting, in reference to the state

of his Potato crops, having been misapprehended, he took that opportunity of stating that in Sussex all his Potatoes had proved bad, as well as those raised from the seed obtained by Mr. Miles from Chili; also, that the Potatoes this year in frames in Anglesey and Carnarvonshire were now showing the disease.

Miscellaneous Communications.—Mr. Fulbrook, expressing his willingness to supply the communications on Prognostics of Weather requested by the Council.—The Rev. Thomas Cator, suggestions that all stallions and mares being "roarers" should be disqualified for competing for the prizes offered by the Society for improving the breed of horses.—The Rev. E. Sidney, offer to deliver a lecture before the members at the Norwich meeting, on some subject connected with practical agriculture.—Mr. McGall, plan for the removal of the turnip-ily by means of tarred cloth drawn over the field.—Mr. Dyer, to correct his statement at the previous meeting "that he had employed 3 lbs. of blue vitriol to the sack" of corn to destroy smut; he found on reference to his memoranda, that for the last 13 years he had used with success 1 lb. of that substance to 3 bushels of grain.—Mr. Blackhall, on steaming bones at high pressure.—Messrs. Youens and Robson, specimen of antiseptic powder for Potatoes.

The Council then adjourned to Tuesday, the 27th of February.

NEW MEMBERS.

Allday, John, Griston, Watton, Norfolk
 Ambler, Henry, Watkinson Hall, Halifax, Yorkshire
 Atherton, George T., Mount Alyn, Wrexham, Denbighshire
 Atkinson, J. R. W., Elmwood House, Leeds
 Baek, Hatfield James, Hethersett Hall, Norwich
 Bannerman, H., Hutton-court, Maidstone, Kent
 Barker, Wm., Poulton-enm-Spital, Birkenhead, Cheshire
 Barlow, Frederick, Bugh, Woodbridge, Suffolk
 Barnard, Charles, Norwich
 Barrow, Charles James, Lopham, Norfolk
 Bawtree, F., Abberton, Colechester, Essex
 Beaumont, Joshua, Huddersfield, Yorkshire
 Beaumont, John, Dalton, Huddersfield, Yorkshire
 Bigg, Edward Smith, The Hyde, Slaughtam, Sussex
 Bignold, Samuel, Mayor of Norwich
 Bieham, Robert Dunton, Fakenham
 Bishop, John, Norwich
 Blake, Thomas, L.L.D., Horstead, Norwich
 Blakiston, Thomas, Thorpe Old Hall, Norwich
 Blomfield, John, jun., Warham, Holkham
 Blyth, William, Weasenham, Rougham, Norfolk
 Brasnett, Thomas, Saham, Watton, Norfolk
 Burroughs, James Burkin, Burlingham Hall, Norwich
 Butcher, Edward, Triug, Hertfordshire
 Butler, Ambrose E., Kestian, Kirkstall, Leeds
 Buxton, Sir Edward North, Bt., M.P., Runceton, Norfolk
 Caldwell, Captain Wilham, 3, Audley-square, London
 Campion, Arthur, Exeter, Devonshire
 Cartwright, Sir Thomas, Bart., Aynhoe Park, Brackley, Northamptonshire
 Cator, Captain, Pestwood House, Southampton
 Chapman, Benjamin, Lambroft, Guisborough, Yorkshire
 Chamberlin, Frederick, Tott-Monks, Norfolk
 Churchill, Henry, Barton House, Morehard-Bishop, Exeter
 Churton, John, Foregate-street, Chester
 Cole, William Henry, Pulham, Harleston, Norfolk
 Cooper, I. J., Leeds, Yorkshire
 Custance, Hamilton, Weston, Norwich
 Davies, Mrs. Susanna, Roeklaveston Manor, Nottingham
 De Ruten, The Baron Fritz, Slebeck Hall, Nariethi, Pembroeshire.
 Dennison, Wm., jun., Ridbrooke Manor Farm, Blackheath
 Dickinson, Wm. Lindow, Workington, Cumberland
 Dixon, Wm. Frederick, Birley House, Sheffield Yorks.
 Donovan, George, Buckham Hill, Uckfield, Sussex
 Dugdale, John, Manchester
 Ellis, Thomas R., Oxnead Hall, Buxton, Norwich

Fellows, Thomas Abdy, Chippenham, Wilts.
 Gilbert, Robert, Ashby Hall, Berghapton, Norfolk
 Gill, William, Billingford, Dereham, Norfolk
 Gillett, Richard, Plumstead, Norwich
 Gossett, Captain, Town Court Farm, Eltham, Kent
 Griggs, Money, Creake, Fakenham
 Edwards, Thomas, Hapton Hall, Long Stratton, Norfolk
 Francis, William, Rainham, Fakenham
 Hanbury, Rev. G., Swaffham, Norfolk
 Holmes, John, Norwich
 Hudson, Thos. Moore, The Grove, Warham, Holkham, Norfolk
 Hudson, John, Warham, Wells, Norfolk
 Hudson, Peter, Warham, Wells, Norfolk
 Humphrey, Robert Blake, Wroxham House, Norwich
 Johnson, Rev. P., Wimworthy, Chumleigh, Devon.
 Kaye, Lister Lister, Denby Grange, Wakefield, Yorkshire
 Kerrison, John, Ranworth, Norwich
 King, Frederick, Oxford
 Knatchbull, Rev. H. E., Elmham Rectory, Dereham, Norfolk
 Legard, Capt. James Anlaby, Leuton Hall, Nottingham
 Lowdell, George, Baldwin's Hill, East Grinstead, Sussex
 Mallinson, John, Thickhollins, Huddersfield, Yorkshire
 Marden, William, Gerpens, Rainham, Essex
 Martin, John Williams, Shoborough, Tewkesbury, Glouc.
 Mertens d'Osten, The Baron, Brussels
 Miller, Rev. M. H., Hopton, Lowestoft, Suffolk
 Moore, Thomas Sewell, Warham, Holkham
 Newton, Willam, The Close, Norwich
 Nicholson, Charles, Staniwells, Brigg, Lincolnshire
 Nicholson, Henry, Broughton, Brigg, Lincolnshire
 Ormrod, Ven. Archdeacon, Redenhall Rectory, Harleston, Norfolk
 Page, Robert, jun., Bawburgh Lodge, Norwich
 Penrice, Rev. Charles, Plumstead, Norwich
 Phillips, Elisha, Tacolnestone, Wymondham, Norfolk
 Pierson, John, Thornton-fields, Guisborough
 Pooock, T., Wernham, Green's Farm, Chievely, Newbury, Berks.
 Powell, John Thomas, Easton, Pewsey, Wiltshire
 Proctor, Robert Geys House, Maidenhead, Berkshire
 Quinn, Peter (J.P.), Newry, Ireland
 Randall, Alexander, Maidstone, Kent
 Ridgway, John, Fairlawn, Wrotham, Kent
 Rising, William, Somerton Hall, Great Yarmouth, Norfolk
 Ruscoe, Ralph, Newport, Monmouthshire
 Savory, John, Burnham-Overy, Norfolk
 Seppings, Johnson, Creake, Fakenham
 Seppings, William, Mayor of Lynn Regis, Norfolk
 Shepherd, J., High House, Campsey Ashe, Woodbridge, Suffolk
 Sherringham, Valentine, Thornage, Holt, Norfolk
 Sherringham, Edward, jun., Sculthorpe, Fakenham, Norfolk
 Sherringham, Edward, Sculthorpe, Fakenham, Norfolk
 Smith, Colonel John, Ellingham Hall, Bungay, Suffolk
 Smith, William, Easthorpe, Bottesford, Notts.
 Sparke, Alfred, Norwich
 Spelman, William, Norwich
 Stables, Wm. Alexander, Cawdor Castle, Nairnshire, N.B.
 Tanner, James, Kingsnympton, Chumleigh, Devon.
 Tayton, William, Syderstone, Fakenham
 Thornton, Rev. John, Head Master of the Agricultural School, Kimbolton, Huntingdonshire
 Tunncliffe, Frederick Warner, Biana, Eccleshall, Staffs.
 Walker, Dr. Thomas, Lower Seymour-street, London
 Wellingham, E., Walton, Lynn, Norfolk
 Wilkin, William, Crabscastle, Wells, Norfolk
 Wrench, Samuel, Great Holland Hall, Colchester, Essex
 Wright, David, Hepworth, Ixworth, Suffolk
 Yeates, John Yeates, Parkhead, Levens, Milnthorpe, Westmorland

Evidence," which is a much more readable volume, the matter being arranged under various heads, as Customs, Cultivation, Tenure, Law of Entail, Permanent Improvements, &c., &c.; by which means the evidence given by all the witnesses upon each subject may be perused in succession, thus enabling the reader to arrive at a conclusion as to the general result of the evidence more readily and effectually. The work is dedicated to the Landlords of England, and we trust they will give it an attentive and impartial perusal, they being, as we contend, the parties who will ultimately benefit most materially by the adoption of the principle of compensation to the tenantry for unexhausted improvements. (*See Advertisement.*)

In the year 1846 a select committee of the House of Lords was appointed "to inquire into the burdens on real property, and the impediments to agricultural transactions caused by the system of excise duties, poor laws, and local taxation; and also to inquire and to report on the legislative exemptions and pecuniary advantages produced by law in respect to taxation as affecting landed property." This committee made a report, portions of which bear upon the malt tax; and may, therefore, be appropriately referred to at the present moment. This report states that

"The tenant farmers lay great stress on the malt duty, and its injurious interference with the cultivation of barley. The committee, however, cannot consider that impost, which on the average of the last ten years has produced very nearly £5,000,000 annually, as borne exclusively by the land. Beer being almost a necessary of life with the mass of the population, the duty falls as a general tax on the consumer of the article; but it is unquestionable that so heavy a duty diminishes the demand, and deprives of a ready market all except the best qualities of barley. A duty of 21s. 8d. on a quarter of barley costing 34s., is so heavy a tax, that Mr. Barclay is of opinion that no brewer can afford to buy inferior barley and make it into malt. The agricultural witnesses, examined before the committee, complain loudly of the restriction the excise laws impose on malting inferior barley for fattening purposes. The advantages of this process having been matter of dispute between learned chemists and practical farmers, the committee will content themselves by referring to the evidence of Mr. Hudson, of Castleacre, Mr. Bennett, &c., &c., on the subject, and adding, that if further experiments should establish the utility of the process, the malt duty must be considered as a serious obstruction to agricultural economy.

"The committee consider the malt, and other excise duties, rather as restrictions on cultivation, and as impediments to the improvement of the land, than as exclusive charges on landed property."

The following extracts from Mr. Hudson's evidence bear on this question as regards the feeding of cattle:—

Q. "Can you state how much an acre you consider the malt duty affects arable land?"

A. "I have made no calculation of how much per acre it would be; I know pretty well how much it would affect my cattle per head. If I might be allowed to use coarse barley made into malt, without paying any duty, I consider that it would be a saving of from £2 10s. to £2 12s. a head in feeding a beast I think it would be better than barley by £2 12s., and better than cake by £2 10s."

At the request of a correspondent we made inquiry last week at the Parliamentary Paper Office for a copy of the evidence given before the Agricultural Customs Committee, and were informed it was out of print. This want is now, however, supplied by the publication of a "Digest of the

THE MALT TAX.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—Were I to read in your magazine that a nation had been under the necessity of imposing a heavy tax on one of its native productions, a production, too, essential to the comfort and health of the greater part of its population, I should naturally feel pity for such a people, that they were obliged to endure so heavy an infliction. But were you to tell us that this nation, having previously a duty also on the importation of a similar, but inferior, foreign production, had now taken off the latter tax and continued the former, I might be disposed to inquire if you were not under a mistake; or, otherwise, whether they could grow the article so much cheaper at home. Should you, however, assure us that your report was correct, and that instead of being able to raise it at less cost, the various items of expense attending the growth of the native were heavier than those attending the growth of the foreign productions, you could not, I think, be much surprised were I to exclaim, ‘What fools they must be!’

Notwithstanding the credit for sound common sense generally allotted to Englishmen, I cannot think but some such sentiment will unavoidably arise in the minds of many towards us on finding that the tax is taken off the importation of foreign barley, whilst it is continued on that of our own growth. With a considerable number of our labouring population verging on starvation, with a greater portion bordering on pauperism: looking also at the continuing failure of the potato crop: few farmers, I think, will grudge, for their sake, if necessary, the free importation of bread and meat; but let us, at least, have a fair remuneration for our other agricultural produce, and be enabled, not only to live ourselves, but to give such employment to our labourers as will enable them to *obtain* these cheap foreign necessaries of life. Otherwise, the nearer they appear to their grasp, the more bitter will be the disappointment that they cannot reach them.

But what an anomaly, to take entirely the duty off bread and meat, and to retain a heavy one on beer—an article which, to the labourer, is both food and a cordial. Let us hope then that our legislators will devise better things; that they will remove that odious duty on malt, and enable the labourer to enjoy his beer, as they do their wine. By putting a moderate fixed duty on foreign barley, beans, oats, and other agricultural produce, with the exception of bread corn and of meat (but not of flour, to make which ought to assist in employing our population), they will not only be enabled effectually to do this, but also to relieve the country of some other unpopular taxes, and to assist our agriculturists in bearing up under the heavy weights which so encumber them in their contest with the foreigner. It may be said that this will not assist the wheat growing districts; but as beans are chiefly the production of such lands, a duty on their importation will be a benefit to those lands. They will also be benefited indirectly, by the at-

tention of the light land farmers being turned more exclusively to the growth of other kinds of grain and of seeds.

I am, Sir, your obedient servant,

WILLM. HALCOMB.

Poultton, 17th Feb., 1849.

Those who are earnest in their desire to promote improvements in the cultivation of the soil, upon a comprehensive scale, will be much gratified by an announcement, in our report of the proceedings in parliament, that, on the motion of the Duke of Richmond, a select Committee of the House of Lords has been appointed “to inquire into the expediency of amending the act for enabling the owners of entailed estates to charge the estates with sums expended for the improvement of the same.” We anticipate, as the result of the labours of this Committee, a valuable body of evidence, which will clear the way for important legislative measures, conferring larger powers on the owners of limited estates, in respect to permanent improvements in which their successors are interested. With the present and prospective abundance of capital, it is scarcely possible to calculate the beneficial results to the landowner and the labourer, were the laws affecting the tenure of landed property prudently and judiciously adapted to the character and exigencies of the times. The facts and circumstances which must be disclosed in evidence before this Committee will, by making landowners acquainted with the extent to which their own position may be amended, open their eyes to the disadvantages under which tenant farmers labour who enjoy no security for the investment of capital in the cultivation of their farms, through the want of a lease, or an agreement for compensation for unexhausted improvements, in case of sudden and unexpected eviction. The public are greatly indebted to His Grace the Duke of Richmond for thus dedicating his attention to an object of undoubted national importance.—Mark Lane Express.

The *Gardeners' Chronicle* warns its readers against a class of swindlers who are seeking to entrap the unwary, in the following terms:—

“We advise Seedsmen and Gardeners to beware. There is a gang of about a dozen fellows, located in Manchester and the neighbourhood, who are carrying on their swindling vocation with great assiduity. Their system is to write to the various seedsmen and gardeners in the south of England for seeds, roots, plants, &c., and to give references one to another; they are all peniless, and living upon their wits. There is also a smaller gang, located in Liverpool, who use the address, ‘Rainhill, near Liverpool,’ and are pursuing the same system. We have heard of one or two who have been victimised, but we hope our readers will see this paragraph, and act cautiously with orders from the places mentioned. The safest and shortest answer to such orders is to write for the cash before the goods are sent off, or to send the letters to any of the various Guardian Societies, for the inspection of the Secretaries, who can at once give the information as to the genuineness of the writers. We gave a list of the societies in a late number of the *Gazette*. *Rhubarb* plants are just now in great demand by these worthies. *Ashen* plants well applied

to their backs would be a suitable acknowledgment of their intended favours. We advise our readers to copy this paragraph, and paste it in some conspicuous place in their counting-houses, that the caution may not be lost sight of."

We would also caution farmers and others against parties who forward circulars, offering guano of excellent quality upon most reasonable terms; the terms for doing business are low prices for ready money, the goods to be forwarded as soon as the money is remitted. There are parties dating their circulars not a hundred miles from Birchin Lane, London, who are playing this trick. We know of one party who was so incautious as to remit his cash, but got no goods in return, and only after long delay, much trouble, and some amount of threatening exposure, succeeded in getting his money back. We have frequently recommended caution to our readers in purchasing guano. There is no other article, except perhaps cloverseed, in which a farmer is so likely to be duped in the *quality*, independently of being defrauded in the manner before alluded to. All the Peruvian guano which reaches this country is imported by parties whose integrity is unquestionable. It is well known that their most anxious desire is that it should reach the farmer in its pure and unadulterated state. A reasonable degree of caution upon his part will ensure that object. Let him purchase it either of the importers themselves, or of the agents they recommend, unless the purchasers possess a sufficient knowledge of the dealer to have confidence in his honesty. Let them bear in mind the Liverpool guano manufactory to which we drew attention a short time since.

REVIEWS.

THE PUBLIC HEALTH VERSUS PESTILENTIAL DISEASE.

London: Ridgway, Piccadilly, 1849.

This most interesting and useful pamphlet is from the pen of Mr. Dover, and will be read with profit at this season of threatened sickness. He purposes to convert the pestilential flow of the Thames, as it is at present by the discharge into it of a thousand sewers, into a stream as clear as it is above Richmond. He suggests the "intercepting the sewage at the exit of each sewer, and with anti-contagious and innoxious deputrefying chemical agents, fixing and precipitating the ammoniacal and other valuable properties therein, and thus converting the residuum into a cheap, portable guano or manure, of extremely fertilizing powers for agricultural and horticultural purposes, when spread upon or drilled into the ground." There can be no doubt but by such a plan an immense revenue would be derivable from the sewers of this great city, and a most important and vital good effected by the removal of the daily flow of filth into our splendid river.

THE SPORTSMAN. Feb., 1849.

London: Joseph Rogerson, 24, Norfolk-street, Strand. This month's number contains some capital articles, instructive and amusing; "Vicious Horses," by Harry Hieover, is of the former class;* "Tattersall's, as it was

and as it is," and "Sporting Incidents at home and abroad," by Lord William Lennox, amongst the latter. The engravings, too, are first-rate; "Nobody names the Winner," from a painting by Herring, sen., is worthy the pencil of one of the best animal painters of the day.

AN ACCOUNT OF THE DISCOVERY, PROPERTIES, AND CULTIVATION OF THE GIANT SAINFOIN.

By THOMAS HINE.

London: Ridgway, Piccadilly; and the Editor, at Newnham, Baldock, Herts.

A most valuable pamphlet upon the cultivation of this useful auxiliary to British agriculture. The testimonials of several parties living in different parts of the kingdom, who have tested the merits of the plant, show its adaptation to our soil in the different localities.

We extract the following method which Mr. Hine proposed for bringing this giant species into profitable cultivation in a general way, upon farms where the four-course system of cultivation is adopted. He says:—

"I take it for granted that the system of sowing the whole of the barley season with clover is no longer practised generally, from a conviction that half the shift sown every eight years will produce at least three-fourths as much food as can upon an average be produced from the whole of the shift sown every fourth year. When this plan is adopted, it will leave half the shift to be sown with some other crop. Here it is that I would recommend to commence operations. Upon a part of this—say, one-sixth of the entire shift—which I will suppose to be cropped with peas, and which, upon a farm of 100 acres, in each season will amount to about seventeen acres; to this quantity, therefore, I should direct my attention so soon as the peas were harvested, and, by a little extra labour then and during the period that elapsed before Michaelmas, I should take care and render the process of summer fallowing after the ensuing wheat crop perfectly unnecessary. This being done I should, in the wheat crop, whether sown broadcast or in rows, deposit the seed with a drill in the spring. In that case, the land will present you with a crop of sainfoin in place of the turnip crop. This may be mown early in June for hay, and again in August for seed, and it will then produce a fine eddish in October. This I should continue in plant a second year, when it would displace the barley crop, and again in the third year displacing the clover layer. I then propose that it should be taken up for wheat with the rest of the season, when, in my opinion, it will, with the same treatment, produce the best crop the season will afford. I am quite aware that the plant of sainfoin will not be exhausted, and that probably another crop, of greater value than the wheat crop, might probably be produced; but this, if adopted from any special cause, must be the exception and not the rule, for the under-mentioned reasons. I have known, upon a sainfoin layer of four or five years' standing, that the wire-worm has made sad ravages in the ensuing wheat crop, and even in the turnips and barley that have followed; but when the plant was taken up in full vigour, say, at the end of three years, I have never known these disasters occur. My practical readers will perceive, that by pursuing this system, and planting another seventeen acres in a similar way in the ensuing year, and another in the third year, a breadth of fifty acres may be appropriated each year to the growth of this valuable plant, without any sacrifice of corn-growing crops, save the seventeen acres of barley in each year. From fifty acres of sainfoin thus produced, I calculate that from eighty to one hundred tons of hay would be realized (in proportion to the productive powers of the soil) by the first mowing, which will, for the most part, be found sufficient for the entire consumption upon the whole farm, especially when the fodder arising from the fifty acres of seed in each year is taken into account, and which will be equal in quantity and value to from thirty to forty tons of meadow hay, supposing each to be equally well gotten. By adopting this system, it follows that the whole of the clover upon the farm may be fed with sheep, except in such localities where a more successful mode of disposing thereof can be had recourse to. This practice, moreover, will meet one of the peculiar pro-

* This is the conclusion of the article; the previous part being of such practical value as to induce the talented editor of the "Veterinarian" to insert it in his magazine for the guidance of his readers.

erties of this species, which is this: I do not think it will remain in plant so long as the common stock; which, when its maturing itself so much earlier, and the extra mowing it undergoes, is not very surprising. Still I have known it answer well for five years, where most abundant crops of hay were produced in each year; but the seed crop of the last year was a failure—not so much from a decay in the plant, as from the seed dropping from the stem after it was set. And in another instance, when it was sown upon a weak clay, well drained, in the middle of a thirty-acre field of the common stock, and treated the same, by being mown once and then depastured, it remained in plant as long as the other was allowed to remain, being eight years."

Our agricultural friends should possess themselves of this work; the price is a mere bagatelle.

DIRECTIONS FOR ECONOMICAL AND EXPEDITIOUS WASHING.

By HARPER TWELVETREES, Milman-st., Bedford-row.

Being of opinion that we benefit the public generally in recommending a trial of any plan calculated to lessen domestic labour, we do so in this case without any hesitation. Expedition and economy are said to be combined; and if, as stated, a family's six weeks' washing can be accomplished before breakfast for less than six-pence, and without a washerwoman, we think this little *brochure* will soon find its way into the hands of every prudent housewife.

LONDON FARMERS' CLUB.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR.—In your report of the discussion at the London Farmers' Club "Upon the Burdens pressing upon Agriculture, especially in reference to the Malt Tax," I am reported to have stated that, "If any one had one hundred sheep, and divided them equally, and if he gave to the one-half all turnips, and to the other all malt-combs, the one would become fat and fit for market much sooner than the other."

Such a statement, with practical men, must appear a mystery; hence, requires my notice. What I inferred was this: "Suppose one hundred sheep were placed upon turnips, and equally divided, and the one half supplied with malt-combs in addition, they would become fat and fit for market much sooner than the other." Thus, if malt-comb (the shadow) was so essential, what must malt (the substance) be?

Yours truly,

ROBT. SMITH.

Ennelt's Grange, South Molton, Feb. 16th, 1849.

HARLESTON FARMERS' CLUB.—(FRANCIS DIX, Secretary).—At a meeting of the club, held on the 14th inst., the subject for discussion was "The Advantages of Enclosing Waste Land." The introducer stated there are about 4,000,000 acres of improvable land in England alone, which, if brought into cultivation, would employ 200,000 able-bodied men, if we take them at 5 men to the 100 acres—the number considered needful to good farming in this district—and would produce as much food as has been imported yearly upon the average of the past 10 years. After an animated discussion, it was resolved,—“That a general enclosure of wastes, by bringing a much greater extent of land under cultivation, would greatly increase the resources of the nation, and contribute to the comforts of all classes, by adding to the means of employing our rapidly increasing population, and furnishing a very large proportion of that food for which we are now dependent on foreign supply. And the club wishes to express its regret that the lords of manors can, by withholding their consent, prevent the inclosure of wastes.” The secretary's report of the number of subscribers to the "Series of the Reports," as a testimonial of respect to the memory of the late R. B. Harvey, was very satisfactory, and the club directed a sufficient number to be printed to meet the wants of subscribers, with a limited number for after-disposal. It will be seen that the Malt-tax is again to claim the attention of the club at its next meeting on

the 7th of March. The following are the subjects for discussion during the remainder of the year:—March 7, "On the Burdens pressing upon Agriculture, especially in reference to the Malt-tax." April 4, "The description of Sheep most profitable to the Breeders and Graziers within the District of the Club, with Observations on the Management of, and Breeding the same." May 9, "Liquid Manure, its Preservation and Application." June 5, "Is it good policy, and in what case is it so, to pay for work done by the Piece rather than by the Day? Give also the Prices of various descriptions of Piece-work." Sept. 5, "The advantages to the Farmer resulting from a good and sufficient selection of Agricultural Implements, naming the most improved now in use." Oct. 3, "Planting Wheat, Thick and Thin Sowing." Nov. 21, "The best method of restoring the Fertility of Land, when exhausted by mismanagement or over-cropping." Dec. 5, "Annual Meeting."

YORK FARMERS' CLUB.—The monthly meeting of this club was held on Saturday se'night, Mr. Smallwood, of Middlethorpe, in the chair, when a paper was read by Mr. Raines, "On the best plan of preparing land for Spring crops." The plan recommended was, first, to make the land dry by thorough draining; secondly, to grow as many root or fallow crops as gram; thirdly, to clear the land by scarifying or broad shearing the stubble immediately after harvest; fourthly, to plough the land in sufficient time to get tempered by the atmosphere; fifthly, to plough deep for the bean and root crops; and sixthly, to manure sufficiently for them, so as not to have to apply any to the grain crops. Mr. Hawking, of Linton-upon-Ouse, Mr. Cundall, and others, took part in the conversation which followed.

ENCLOSURE OF COMMON LANDS.—A bill brought in by Sir George Grey and Mr. C. Lewis authorizes the Enclosure Commissioners for England and Wales to enclose the following lands, for which provisional orders have already been issued, viz.—Pyrtou, in the county of Oxford; Chorley-green, in the county of Chester; Bell, Swan, and Silverlace-greens, in Suffolk; Bickerton-hills, in Cheshire; Bramerton Common in Norfolk; Headley, in Southampton; Oakworth Common, in Yorkshire; Buckland Newton, in Dorset; Abbotwood, in Southampton; Black Torrington, in Devon; Westwell Leacon, in Kent; Holster-yard, in Devon; Cradley, in Hereford; Firbank Fells, in Westmoreland; Oxtou, in Nottinghamshire; Dent, in the West Riding of Yorkshire; Mansfield Woodhouse Forest, in Nottinghamshire; and Cefu Ertham-common, in Brecknockshire.

We are authorized to state that Lieutenant-General Sir Edward Kerrison, Bart., M.P., of Oakley Park, Suffolk, has given permission for his name to be added to the list of Patrons of The Farmers' and Graziers' Cattle Insurance Association. We are happy in being enabled to add, that the objects of this useful Association are becoming better appreciated by graziers and feeders of stock, who are now extensively availing themselves of the protection afforded by it. It will be seen that our Bedfordshire reporter, in his monthly agricultural report for that county, thus refers to the losses of cattle experienced in his district:—

"Among those who bred their stock, there has been much disease and loss; while with others who bought in their beasts and sheep, it has been a ruinous affair."

The *Wigtownshire Chronicle* says:—

"We are farther sorry to say that the murrain amongst cattle has again broken out in this district. Our valuable veterinary surgeon, Dr. Fulton, is making strict investigation as to this fresh outbreak, as the country people suppose it has come by cattle from Ireland, which were landed in this district six months ago."

Why not secure protection against loss by insurance?

METEOROLOGICAL DIARY—1849.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.		
Day.	8 a. m.	9 or 10 p. m.	Min.	Max.	9 or 10 p. m.	Direction.	Force.	8 a. m.	2 p. m.	9 or 10 p. m.
Jan. 21	30.25	30.—	46	50	47	S. West	strong	cloudy	cloudy	cloudy
22	29.96	30.10	43	48	44	N.W., Southly	lively	fine	sun	fine
23	30.27	30.40	39	50	46	Westerly	brisk	cloudy	cloudy	fine
24	30.34	30.22	43	48	45	Westerly	forcible	cloudy	cloudy	cloudy
25	30.15	30.—	46	50	47	Westerly	forcible	cloudy	cloudy	cloudy
26	29.80	29.95	46	50	39	W. by North	brisk	fine	sun	fine
27	29.93	29.50	32	41	40	S., West	brisk	fine	cloudy	cloudy
28	29.30	29.33	38	44	35	W. by N., by S.	variable	fine	sun	fine
29	29.40	30.—	36	38	36	N., N. by W.	brisk	cloudy	cloudy	cloudy
30	30.15	29.90	31	44	44	S.E., S.W.	brisk	cloudy	cloudy	cloudy
31	30.10	30.20	35	40	37	Westerly	gentle	fine	sun	fine
Feb. 1	30.20	30.22	31	39	39	S.S.W.	gentle	fine	hazy	cloudy
2	30.27	30.34	36	48	44	S. by West	calm	cloudy	cloudy	cloudy
3	30.35	30.39	42	46	44	Westerly	calm	cloudy	cloudy	cloudy
4	30.40	30.44	45	48	47	Westerly	variable	cloudy	cloudy	cloudy
5	30.44	30.45	46	48	44	Westerly	gentle	cloudy	cloudy	cloudy
6	30.45	30.40	44	45	42	West, W. by S.	calm	cloudy	cloudy	cloudy
7	30.40	30.32	40	42	41	W. by N., by S.	calm	cloudy	cloudy	cloudy
8	30.29	30.30	40	50	42	West	brisk	fine	cloudy	fine
9	30.44	30.41	34	46	44	W. by S.	lively	fine	cloudy	fine
10	30.38	30.50	42	45	50	W. by S.	gentle	cloudy	cloudy	fine
11	30.76	30.80	34	50	37	N. by W., var.	calm	fine	sun	fine
12	30.78	30.58	31	48	37	N.W., S.W.	calm	fine	sun	fine
13	30.55	30.55	30	50	40	S.W., var.	calm	fine	sun	cloudy
14	30.68	30.50	32	48	44	S.W., var.	lively	fine	sun	cloudy
15	30.50	30.47	41	57	47	W. by North	gentle	fine	sun	fine
16	30.47	30.55	36	43	39	W. by N., var.	gentle	cloudy	cloudy	fine
17	30.50	30.50	31	50	43	W. by N., by S.	gentle	fine	sun	fine
18	30.45	30.40	35	48	45	West, W. by S.	gentle	cloudy	cloudy	cloudy
19	30.25	30.—	45	50	48	West, var.	lively gale	cloudy	cloudy	cloudy

ESTIMATED AVERAGES OF FEBRUARY.

Barometer.		Thermometer.		
High.	Low.	High.	Low.	Mean.
30.82	29.170	53	21	36

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Lowest.	Highest.	Mean.
38.4	46.6	42.5

WEATHER AND PHENOMENA.

Jan. 21—Overcast; drizzle. 22—After rain, fine and sunny. 23—Overcast; gorgeous gilded sunset. 24—Cloudy and wind. 25—Broken clouds; dusty. 26—Beautiful. 27—Fine sunset; wet night. 28—Fine; beautiful sunset. 29—Rainy; cold and chilly. 30—Sleet and drizzle. 31—Fine.

LUNATION.—New on 24th, 4h. 43m. afternoon.

Feb. 1—Fine sunrise; hoar frost, and a film of ice. 2—Rain; cloudy, damp day. 3—Gloom; and very damp. 4—Overcast; clouds broken. 5—Short gleams; drying. 6—Overcast. 7—The same: here terminated the long period of gloom. 8—A shower; calm and serene. 9—Hoar frost; passing cirro-stratus. 10—Overcast. 11—Rime, till 8 A.M.; hazy sun. 12—Rime; powerful sun;

red clouds at sunset. 13—Hazy; fine; cloudy evening. 14—Very fine all day after rime. 15—Beautiful. 16—Fine; gorgeous crimson sunset. 17—Rime again; bright sun. 18—Calm, cloudy, and doubtful. 19—Dust driving; clouds threatening change.

LUNATIONS.—Full moon, 7th, 44 minutes before noon. Last quarter, 15th, 4h. 3m. morning.

REMARKS REFERRING TO AGRICULTURE.—

The extraordinary height of the mercury, the general mild temperature, 6° above the average, the almost total absence of rain since the two first days of February, and the absence of sun for a long period, constitute the phenomena of the month. Everything has been propitious to agriculture, unless, perhaps, we admit the want of a little searching frosts. I see no depredations of insects, because the wheats are true and regular in the drills. The land here appears to be in a fit condition for spring labours, and we trust that every farmer may be early at work. Oats, spring wheat, and barley prosper when sown early on free working land; and above all, *potatoes*, which we hope will all be planted by the 7th of March. J. TOWERS.

Croydon.

CALENDAR OF HORTICULTURE.—MARCH.

I commence this article at the middle of February, but shall defer the usual retrospect till I come to its closing paragraph, only observing that the weather has hitherto been so benign and propitious as to authorize a hope that every operation of moment may be performed at the proper, anticipated periods of this most busy and important month of March. What a contrast has the weather of the present year afforded! Let those who can refer to the registers of 1848, compare and admire.

OPERATIONS IN THE KITCHEN-GARDEN.

First period.—*Early Potatoes*: look back to col. 2, page 184, on the treatment of the *ash-leaved kidney*, and if any work of the kind remain to be done, let it be finished without delay. A liberal dressing of common salt ought to be given before digging; this was mentioned a month or two since. The *Gardeners' Chronicle* has, for some weeks, devoted several leading columns to the subject of disease, or its comparative absence; and so far, by consentient evidence, it appears certain that *light*, sandy, unmanured ground, and the *earliest*, or *very late* plantings had produced the best and soundest crops. At all events, the public now feel that the alarm created during last season was an extreme exaggeration.

Sow *Peas*—scimitar, blue imperial, Prussian, and the very dwarf but prolific *Victoria*; the last an inch apart.* Broad *Beans*, an abundant quantity, being the last that can be relied on, especially if the spring be dry; *Beet* (the small purple-horn) and Surrey *Carrot*; *Parsnips*; *Radish* of every kind; *Cabbage*, Savoy, Brussels sprouts, kale, cauliflower, in a warm border, or over a gently-warm leaf-bed; *Celery* and *Celeriac*, in a similar way, to be protected by a mat, hand-glass, or a spare frame-light. Transplant the cauliflowers, that have been in frames, into some warm border, deeply and richly manured, thirty or thirty-six inches apart, to be covered with hand-glasses, or *carboys* divested of their bottoms, in the way adopted by chemists and sulphuric-acid makers who have gardens and plenty of damaged glass vessels. Give air to the plants that are already under similar covers.

When the ground is set apart for any or all the spindle-rooted plants, either now or in the autumn, it should be trenched out one clear spit, and the bottom dug another, adding the required manure and breaking the lumps thoroughly. Do this by small, thin spits, to remove large stones and all other obstacles that might interfere with the main tap-roots. Parsnips can succeed in very strong land, provided holes be made with a crowbar, and filled up with very fine soil before sowing the seeds in it, about three-quarters of an inch

* Bishop's new long-pod dwarf pea is now said to be superior to all others. It is dear; but being planted four inches apart, and very prolific, it more than repays.

deep; but carrots require a new and very sandy loam, and even prefer the sands of Surrey.

Kohl-rabi—the cabbage-turnip—must be sown directly, either for the field or garden. It is a very fine bulb, and the *white* variety, if grown rapidly, is a capital dinner vegetable: its "greens," and indeed those of the *purple* sort, are very nice, as sprouts, in the early spring. Dig the seed plots carefully, render the surface compact, sow in drills just so distant as to admit the hand-hoe, exactly as with cabbage or kale seed; cover and rake; then pat the surface fine. A large plot in the garden, or at the edge of the field, will be required for the farm, and there the purple sort may be preferred. When grown to the size of common broccoli seedlings, each must be transplanted into well-manured ground; the field plantings in rows or ridges, over manure, twenty-seven inches apart, and nearly as far asunder along the rows. Those intended for table use will require a moist and warmer site, more generously enriched, to hasten the growth, according to the season: the seedlings will be fit to put out at the latter end of May and to the end of June.

Earth up peas and beans, previously loosening the ground with the hoe; then stake the taller-growing peas; the two early varieties already recommended require no props. The foregoing operations demand the earliest attention.

In the course of the month plant a good quantity of the *Jerusalem Artichoke*: it can suit any vacant external plot, and will yield abundantly; but the ground ought to be trenched and pulverised.

Plant *Shallots* and *Garlic*, and sow the main crop of *Onions* and *Leeks*: the ground for them ought to be deeply worked and manured; and, as these pungent vegetables seem to require salts of ammonia, guano might be mixed with reduced dung, one quart to the small barrow-load. Make the site solid for onions; then draw the drills, barely half an inch deep and six apart: trickle Spanish onion seed evenly along their course, cover with any fine sifted earth, and pat the surface with the back of the spade: large, superficially-formed bulbs are the object, and solidity of bed and rich manure at bottom are the means by which such can be obtained. For Strasburgh and other oval onions these preparations are not so indispensable; neither are they for the true London leek, which will require transplantation in July.

Lettuces: Every sort may be sown in very rich soil, to remain where they are, and be duly thinned, but prefer the true tennis-ball and Gotte, as they heart of themselves, give no trouble, and remain long in use.

Hoe and loosen the ground about the winter *Spinach*: sow more rows of either sort.

After removing faded leaves of *Broccoli*, fork the ground and make it neat.

Asparagus: Stir the surface of the beds, and on

each side of single rows ; and try the effect of a liberal watering with liquid manure, such as the drainage of farm dunghills, superadding a sprinkling of salt, which gardeners do not now fear to apply to the extent of three-quarters of a pound to the square yard.

Sea-kale can be treated in a similar way.

Artichoke beds and rows ought to be trimmed of all dead leaves and old flower stalks ; the ground should then be neatly forked, and the manure or leaves that were laid over in the autumn worked into it.

Treat *Rhubarb* plots much in the same manner.

FRUIT DEPARTMENTS.

Finish all the hardy trees and shrubs, and protect wall-trees in blossom by sloping glasses. Graft stocks of every kind at the latter end of the month, preferring open and rather moist weather.

Pineries : Now is the season to replot the young and succession plants. Persons were in the habit of disrooting : we disclaim the practice, but would simply tap the full ball on the potting table, so as just to loosen the external fibres, and then transfer to a deep, well-drained pot, one size larger, always using pure maiden turfy loam, by no means wet, or the earth of thoroughly decayed conch-grass roots. Plants so treated should be plunged in a bottom heat of about 75 degrees, and be kept shaded and close till growth be moving ; from 58 to 65 deg. by night will be quite sufficient. A little weak manure-water may then be occasionally given. The systems of pine-growing are so various, that we dare not offer a decided opinion. We have the Meridan, the Hamiltonian, and the Fleming system in *open beds*—that is, without pots. Mr. Paxton's new series of his Magazine has an able article in pp. 16 and 17 of the last month's number ; and in his Calendar it is stated that pines "do much better if planted out in beds of *light soil*, or *peat earth*, heated by hot-water pipes."

In *Vineries*, the Grapes set in February should be thinned very effectually. Heat by night may be very moderate, but by day above 70 deg. ; and by sun, with air, 90 deg. The grand question concerning steaming and the syringe, Mr. Williams, of Pitmaston, has declared that the finest fruit is obtained on vines where the atmosphere of the house was so dry as not even to steam the glasses of spectacles on entering it from the cold external air ! The red spider (*Acarus vitis*) is the vexed question on this subject.

Introduce *Strawberry* pots in constant succession, ever remembering plenty of water. The Keen's Seedling does admirably in large pits of rich mellow loam, heated by leaf linings. Air should be often and freely admitted.

The *Peach-house*, or *pit*, demands the most sedulous attention. If tobacco-smoke be overlooked the fly may prevail, and ruin the starting foliage. The Royal George is the best forcer, but it even fails to set if heat be not augmented by almost insensible degrees, and should then never advance (by fire) beyond 45 to 50 deg. When the stoning process has been effected the case may be different, but at that we have not yet arrived.

Cucumbers and *Melons* have been alluded to be-

fore ; but the opinion now prevails that, during winter for the former, and early spring for the latter, there is no system so favourable as that of growing them over a *tanked bed*, in a house or pit heated by hot-water pipes. If earth or loam beds be employed, we should deepen and extend the bed as the roots extend. I once saw a melon plant, growing in a pot, send forth root processes, of cream-like whiteness, or as threads of pithy marrow, through twelve or more feet of the leaf-bed in which the pot was plunged.

French Beans : Sow for succession, twice ; keep them *growing* by a heat of 60 deg., and *clean* by a vaporous atmosphere. The *Acarus* is a deadly enemy.

Mushrooms : Spawn the beds that are in a fit state, and cover the prepared droppings with pure yellow loam, making the surface firm and even.

FLOWER AND ORNAMENTAL DEPARTMENTS.

Sweep and roll *Grass-lawns*. Renew the *Gravel* of *walks*, tread them firm, and carefully roll them after a shower, or when in a wet and binding state ; use lime-water where worms are apt to disfigure the gravel. Renew *Box-edgings*, and clip the box in fine growing weather ; it will then remain neat till the end of August. Point-in plenty of cow manure, a year or two old, laid over all the borders, preparatory to cropping them in due season.

Plant *Anemones* and *Ranunculuses*. Repot the best *Calceolarias*. *Pinks* and *Cloves* of all varieties, raised by pipings or layers, should now be planted ; those in pots, particularly the best *Picotees* and *Carnations*, are to be kept clean, and guarded from mice ; the surface of the soil renewed, at least stirred, and made clean and level. As chalk (cretaceous matter) is very favourable to the *glaucous* leaves of the *Dianthus* tribe, weak lime-water applied now and then would be beneficial, and tend also to expel worms.

CONSERVATORY AND GREENHOUSES.

Examine the plants. Creepers should be pruned and dressed. The soil should be stirred in the beds, and that of pots renewed, giving more room to the plants which want it. Let the roots at all times be managed with tenderness, and particularly when using the potting stick ; we are too apt to forget that wounds so inflicted must greatly injure an absorbent organ of much importance. *Charcoal*, as bottom drainage, or small pieces of *hard coke*, are very useful. *Pelargoniums*, and soft-wooded, juicy subjects, require a slight increase of temperature. Air is of great consequence to these departments ; also to pits, cold or warm ; above all to those where roses are excited, wherein tobacco-smoke should be often and early applied.

PLANT STOVE, AND PROPAGATION HOUSE.

The *Gesneriæ* and *Achimenes*, and such plants, are now stirring, and when the first developments are observed, they should be repotted in sandy leaf-mould, with a little decayed turfy loam. All plants ought to be fresh dressed, or repotted, and the increments of heat and moisture regulated by the advance of light and external temperature.

WEATHER AND RETROSPECT.

The gloom of the first ten days of this month.

and the extraordinary, almost unprecedented, height of the barometer, constitute the leading phenomena. Once—in January, 1820—I marked 30·80 cents. on the same fine instrument, when I resided in the Isle of Thanet. Now I have read off 30·70 to 30·83 cents., and till the close of the 19th day the

average was far above 30 inches. A rapid fall commenced then, with forcible west wind; and perhaps rain may be anticipated. Hitherto scarcely any showers have fallen.

J. TOWERS.

Croydon, Feb. 20.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR FEBRUARY.

During the greater portion of this month the weather has proved remarkably fine for the time of year. In our agricultural districts the farmers have been busily occupied in the fields, and large breadths of land have been ploughed for spring corn, under the most favourable auspices. The only exception we can notice is the very moderate progress as yet made upon some of the lowlands, which have continued to retain their superfluous moisture to a somewhat longer period than usual, and which, as a matter of course, has prevented the plough being brought into active operation. On the whole, however, farm labours are seasonably forward, and it is gratifying to observe that our accounts respecting the general appearance of the winter wheats are somewhat satisfactory. From some quarters we learn that they are rather thin upon the ground; yet it is quite evident that the prospect of the crop is a good one up to the present time. The slight frosts experienced in the early part of the month have tended to check premature luxuriance, and we may safely venture to assert that the young plants, taken as a whole, were seldom looking better than at the present time. Would that we were able to draw an equally gratifying picture of the prospects of our agriculturists as to the value of their produce. The operation of the new corn law scheme, which has admitted into consumption in the United Kingdom upwards of 1,500,000 qrs. of grain, meal, and flour, since the 1st inst., is now beginning to be severely felt all over the kingdom. Increasing supplies of foreign corn (which have succeeded in displacing immense quantities of home-grown corn in our markets, and which the weekly returns testify) have had a most depressing influence upon the quotations, and all parties are anxiously inquiring—when the downward movement will stop. That the quantity of wheat produced last year in Essex, Kent, and throughout the western counties was small and of inferior quality, is too well known to require any commentary from us; but we refer to the fact to show the perilous position in which the farmers of those districts are now placed. They have no crop to sell, even at the present miserably low prices; while those in the north are very little better off.

The meal trade have regarded the immense arrivals of French flour with no little uneasiness; but it has become a question with not a few parties whether the shipments will be continued. Such was the case last year, during which we received nearly 75,000 tons of potatoes from France, Holland,

and Belgium, when it was argued that the quantity of potatoes produced on the continent did not justify the shipments then in progress to this country. Events have proved the unsoundness of this conclusion. Since the 1st of January, this year, there have arrived in the port of London alone nearly 6,000 tons of French, Dutch, and Belgian potatoes, and the imports are now continued at the rate of nearly 1,000 tons weekly. Another point of great importance, and which requires the most attentive consideration, we conceive to be the foreign supplies of live stock for our markets. In the month just concluded they have been considerably in excess of those at the corresponding period in 1848, and the mildness of the temperature abroad has greatly facilitated the efforts of the Dutch graziers. The consequence has been general heaviness in our fat stock markets, more especially in Smithfield, at a material depression in the quotations. The prospect of large imports, and heavy receipts of both beasts and sheep from Norfolk during the present season, lead us to suppose that we shall have a low range in the prices of live stock for some time hence. It will, therefore, be perceived that the future opens up a poor prospect for the farmer and grazier, whose returns at the present time are, it is well known, beneath what may be termed a paying point.

A novel importation of food has taken place into London since our last, viz., 1,600 canisters of preserved beef and mutton from Buenos Ayres. They were offered for public sale on the 20th, but withdrawn at 6d. per lb.

The turnip crop has turned out tolerably well. In many parts, however, potatoes have become exhausted, and those which remain in the grower's hands in other quarters are scarcely fit for consumption. Really fine qualities have sold at 150s. per ton, other kinds much lower in proportion, owing to the large supplies of foreign pressing for sale.

Stall-fed and other beasts have continued to fare remarkably well. They have had a most abundant supply of excellent food, which has been selling at low prices.

In the metropolitan markets meadow hay has sold at from £2 10s. to £3 15; clover do., £3 10s. to £4 10s.; and straw £1 2s. to £1 9s. per load.

In some of our flock districts in the West of England rather severe losses of early lambs have been experienced. In other quarters the fall has been a good one. The effects of the epidemic have not been so severely felt amongst the beasts as in some preceding seasons.

Our accounts from Ireland and Scotland are rather favourable as respects the progress made in field work. The continued decline in the value of produce has, however, much dispirited the farmers, not a few of whom are anticipating even lower prices for both corn and cattle.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

Since we last wrote the various fat stock markets have been rather heavily supplied with beasts. The numbers of sheep, on a comparison with those exhibited in some previous months, have been good. As to the trade in general it has been dull in the extreme, and a most serious fall has taken place in prices. In Smithfield the decline in the value of beef and mutton has been quite 6d. per lbs., and great difficulty has been experienced in effecting sales at that amount of reduction. Looking to the imports from abroad they have been certainly good, and the prospect of heavy arrivals, as the canal navigation is now open in Holland, has induced the butchers to purchase with considerable caution. It is evident, however, that the depression just alluded to has been the result, chiefly, of the immense quantities of slaughtered meat which have found their way up to Newgate and Leadenhall markets, and which have sold at unusually low prices. Really prime beef has, in many instances, gone at 3s. 2d. per 8lbs., and prime Down mutton 3s. 10s. to 4s. 2d.

Throughout nearly, or quite, the whole of our large grazing districts, there is an extensive supply of beasts in a state fit for slaughtering; and it is calculated that Norfolk will forward to Smithfield from 8,000 to 10,000 more this season than last. The numbers of sheep are certainly in excess of last year. The abundance of good food, and the longer period at which not a few of the beasts and sheep have been kept back, have produced a greatly increased weight. This observation may be applied to all kinds of stock. That we are now fairly in a position to do wholly without foreign importations, and yet keep prices sufficiently low, does not admit of a doubt. The certainty of large supplies leads us to the conclusion that the value of stock will rule extremely low during the greater portion of the present year.

The approaching stock fairs are likely to prove dull. Prices must be considerably lower than in the ordinary run of years; yet the abundance of

food may induce many of the large dealers to purchase extensively.

The imports of foreign stock into London in the course of the month have been as follows:—beasts, 1,914; sheep, 3,092; lambs, 10; calves, 622; pigs, 4. At Southampton 111 beasts have arrived from Oporto; and at the northern outports about 2,400 head of beasts, sheep, and calves, all from Holland. The total importations at the corresponding period in 1848, were 1,192 beasts, 2,167 sheep, 14 lambs, and 173 calves; in 1847, 1,960 beasts, 1,934 sheep, and 90 calves.

The annexed supplies have been exhibited in Smithfield:—

Beasts	17,139	Head.
Cows	617	
Sheep	81,050	
Calves	1,240	
Pigs	1,247	

COMPARISON OF SUPPLIES.

	Feb., 1846.	Feb., 1847.	Feb., 1848.
Beasts	13,140	15,101	15,404
Cows	590	601	570
Sheep	78,270	84,830	75,160
Calves	640	844	859
Pigs	2,031	2,285	1,935

Since our last the bullock supplies have been derived as under:—

Eastern districts	5,300	Head.
Northern do.	2,950	
Midland and western do.	1,600	
Other parts of England ...	1,200	
Scotland	1,300	
Ireland	220	

PRICES.

	Feb., 1847.	Feb., 1848.	Feb., 1849.
	s. d. s. d.	s. d. s. d.	s. d. s. d.
Beef, from 2 10 to 4 4 ..	3 2 to 4 8 ..	2 8 to 3 8	
Mutton ..	3 6 5 0 ..	3 6 5 6 ..	3 0 4 6
Veal	4 2 5 4 ..	4 2 5 4 ..	3 8 5 8
Pork	3 6 5 0 ..	3 10 5 2 ..	3 4 4 6

Up to Newgate and Leadenhall markets upwards of 20,000 carcasses of beef, mutton, veal, and pork, have been received. Generally speaking, the trade has ruled heavy, at a decline in the quotations of from 2d. to 4d. per 8lbs. Beef, from 2s. 2d. to 3s. 4d.; mutton, 2s. 8d. to 3s. 8d.; veal, 3s. 8d. to 4s. 8d.; and pork, 2s. 10d. to 4s. 4d. per 8lbs., by the carcass.

REVIEW OF THE CORN TRADE DURING THE MONTH OF FEBRUARY.

The expectation which many entertained a month ago—viz., that increased activity would be imparted to the grain trade by the release of the bonded stocks, and the temporary, if not permanent, settlement of the corn law question—has not been realized, and the feeling of confidence then entertained

by the holders of foreign wheat, and even by some farmers, has been greatly diminished within the last three weeks. The correctness of the opinion which we have frequently expressed on former occasions, to the effect that, even with a defective harvest in this country, prices of all kinds of corn

would be low, should importations be permitted duty-free, is now undergoing the test of being practically tried. That the wheat crop of 1848 was short in quantity, and inferior in quality, to that of average seasons, all over the United Kingdom, cannot be questioned. Other kinds of grain were also defective; in addition to which, little doubt can be entertained that the partial failure of the potato crop caused a large quantity of useful food to be lost. The time for introducing free trade was therefore favourable, and the removal of the duties was contemplated with less alarm than would have been the case if the crops of last year had proved more productive.

It is yet too early to say much respecting the new order of affairs; but our belief remains unchanged, and we cannot help thinking that prices will be kept down so low by large foreign importations as to render corn-growing in this country an unremunerating employment, unless the burdens on the land, and the taxes bearing heavily on the farmer—such as the malt tax, &c.—are removed or mitigated.

The weather has, throughout the month now about to terminate, been auspicious. In the early part occasional frosts were experienced, by which vegetation received a wholesome check, and which did much service by rendering the land friable. Very little rain fell during the first three weeks, and ploughing, sowing, &c., made rapid progress. The soil was generally in capital working condition, and most of the seed has been well got in, always a great advantage. The reports regarding the appearance of the autumn-sown wheat are, up to the present period, of a tolerably satisfactory character. Here and there there are complaints of its being thin on the ground, which, however, does not always prove a disadvantage. The plant is mostly described as healthy and vigorous, without its being prematurely luxuriant, and a large breadth of land is under this crop—a circumstance which will not be without its influence on the future range of prices, if the seasons should prove tolerably propitious.

The extraordinary mildness of the winter has, undoubtedly, had the effect of economising the consumption of food, and the stocks are not so reduced as was expected would have been the case ere now. Another important consequence of the mildness of the season has been the very trifling interruption to supplies from abroad. In usual years the northern ports of Europe generally remain closed by ice till March, and supplies from thence are not reckoned on till April or May; whereas the navigation of the Baltic has been freed from ice since the beginning of the month, and from some of the near continental ports supplies have already reached

our shores. Indeed, it is not too much to assert that the arrivals of foreign corn have never been interrupted for a single day throughout the winter. During the short time shipments were stopped by frost from the northern ports, the purchases made in the Black Sea and Mediterranean ports some months before (when affairs wore a different aspect here) came to hand, besides which we had daily arrivals from the opposite coast of France.

The shortness of our own crops has therefore not hitherto been felt, and with a large stock of foreign grain and flour in our granaries, spring approaching, and our markets open for the surplus growth of the world, we see little prospect of prices, low and unremunerating as they now are, improving. The only circumstance which might, perhaps, cause a rise is one which we seriously hope may not occur—the probability of injury being sustained by the crops in the ground. Should there be no reason for apprehension on this subject, quotations would probably recede even below their present level later in the year, when shipments from abroad increase.

This is certainly not a very promising prospect to lay before our agricultural friends, but we think our view is founded on a just basis; and on the principle that to be forewarned is to be forearmed, we deem it best to look matters boldly in the face. These are certainly no times for apathy; and if farmers are not content to be utterly ruined, they must bestir themselves to obtain such measures from the Legislature as will put them on something like a fair footing to compete with the foreign producers of corn.

Mr. Disraeli has given notice, in the House of Commons, of his intention to call the attention of the House to the present condition of the agricultural interest, with a view of the more equitable apportionment of taxation. His motion stands for Thursday, the 9th of March, when we hope to see the subject fairly and fully discussed. If the landed interest is not to be wholly sacrificed, something must be done; but to expect success without continued exertion on the part of the farmers themselves, would be the height of folly. With an earnest recommendation to our agricultural friends to be up and stirring, we shall dismiss the matter for the present.

When we last addressed our readers there was some appearance of an improvement in the wheat trade, and the prevailing impression then was that prices had been reduced to as low a point as they were likely to go; indeed, a rally was looked for with considerable confidence; and in the early part of the month quotations actually did advance a trifle. As the fluctuations which have taken place at Mark-lane afford a very fair type of what

has occurred at the other large consuming towns, we shall confine our remarks principally to the doings at the former place of business.

The supplies of English wheat into the port of London have been very small throughout the month; but the large quantity of foreign in warehouse, and the constant arrivals from abroad, have given buyers ample facilities to secure what they have required for their immediate wants, beyond which no one has shown any disposition to invest. The only day on which anything like activity prevailed was on the first Monday after the duties were taken off. A large number of millers then attended Mark-lane from different parts of the country, but they were evidently disappointed at the turn affairs appeared likely to take, and they paid the enhanced terms asked with reluctance. Most of the English wheat was, however, cleared off at an advance of 1s. to 2s. per qr., and a moderate quantity of foreign changed hands at prices about 1s. per qr. above those previously current. This improvement was never exceeded. The succeeding week the inquiry became less extensive; and though the arrivals of English rather decreased than otherwise, the rise was again lost on the 12th inst. Since then the tendency has been gradually downwards, and quotations are now 1s. to 2s. per qr. lower than they were at the end of January. 53s. per qr. may be reckoned an extreme price for the best white Essex and Kent wheat, and the commoner sorts of red have been offered at 42s. per qr. of late.

The value of foreign has receded even more rapidly. On the 12th buyers were enabled to purchase 1s. to 2s. per qr. lower than on that day se'night, a similar decline occurred on the 19th, and on Monday last, the 26th inst., prices were again reduced 1s. per qr. Polish Odessa of capital quality, weighing 61lbs. per bushel, may now be bought at 42s. per qr.; Hamburgh, Brabant, and French at from 40s. to 45s.; and the finest red Baitic at 46s. to 48s. per qr., including the duty of 1s. per qr. These rates are relatively lower than prices stand at just now at the ports of shipment; and the importers of foreign must have been rather heavy losers. The arrivals from abroad into London have averaged 20,000 qrs. per week since the end of January, which is more than has been taken off the market; the stocks in granary have therefore accumulated rather than lessened, and as the foreign supplies are likely to be fully as great in March as they have been in February, holders of what is here naturally feel anxious to realize. During the short time that the excitement lasted, in the early part of the month, many of our principal millers were induced to make purchases from on board at continental ports, which they no doubt now regret. Some of these cargoes will drop in from time to time, and the wants of many of the most extensive millers are likely to be supplied by direct imports—a circumstance which, to a certain extent, will prevent them appearing in the market as buyers. It seems therefore that unless a good country demand should spring up to relieve us of a portion of our granaried stock, that business will continue in a very depressed state. Hitherto the inquiry from the country has been of a much more

limited character than was expected: the fact is, there is no want of foreign wheat at the different ports on the coast, and we have consequently only a comparatively small circle to supply.

The sale of home-manufactured flour has been greatly interfered with by the large quantity of foreign in the market, principally from France. The imports from that country have, however, fallen off of late; and there is reason to expect that the supplies from America will for some time be on a moderate scale. The top price of town-made flour has remained stationary throughout the month; but this has ceased to be any criterion of the value of ship qualities. Norfolk households, and similar sorts, have been selling of late at 33s. per sack in the river; and the finer kinds of French at 34s. to 35s., whilst for low qualities of the latter 30s., and even less, has been taken—a good deal of apprehension being felt as to the lower grades remaining in condition in case the weather should set in warm. American flour has, owing to its comparative scarcity, realized relatively higher prices than French; prime brands being still held at 26s. to 27s. per bbl. This article is cheaper at Liverpool than with us; the greater part of the autumn shipments from the United States having been directed to that port. Stocks are still heavy; only a comparatively small quantity of the 800,000 cwts. in warehouse on the 31st ult. having gone into consumption.

The arrivals of barley of home-growth into London have not been by any means large this month, nor have the receipts from abroad been so abundant as previously; prices of this grain have consequently given way less than those of wheat, but there has been a great want of activity in the demand, and the tendency has been decidedly downwards. Choice qualities suitable for sowing have been taken at full terms, say 32s. to 34s. per qr.; but the maltsters and distillers have conducted their operations with extreme caution, and have refused to pay such high rates. The current value of malted barley in the London market may now be quoted 30s. to 32s.—picked samples perhaps 1s. per qr. higher; whilst other descriptions may be had at rates ranging from 22s. up to 28s. per qr. Very fair sorts of foreign (weighing 50 to 51 lbs. per bushel) might be readily bought at 23s. to 24s. per qr.; which is as cheap as any article suitable for feeding purposes. The stock of foreign in granary at this port is considerable; and though the arrivals from abroad have been moderate of late, the low rates at which the article is offered free on board at continental ports induce us to think that the supplies will during the summer months be on a liberal scale, hence there seems little prospect of a rise occurring in prices. Farmers have done better with their barley than with wheat, the finer sorts having been less interfered with by the foreign, of which only a small proportion has proved sufficiently good to satisfy our maltsters.

The value of malt has not undergone much change; all but the very best kinds must, however, be quoted 1s. per qr. lower than they were at the close of January. Latterly the sale has been exceedingly circumscribed, the brewers having apparently as much on hand as they are desirous of

holding; 60s. per qr. may be regarded as an extreme price for fine pale ware, and the commoner sorts may be had from 45s. upwards.

The most novel feature in the oat trade has been the extent of the arrivals from Scotland: all through the month the bulk of the supply has been from that part of the kingdom, and as the receipts from thence had previously been good, it is fair to infer that the last crop of oats yielded better in the north than elsewhere. From Ireland the supply has been very small since our last, and the quantity which has come forward from abroad has been moderate. We have now arrived at a period of the year when increased supplies from the continent may be reckoned on; for though there is certainly little margin for profit, the contracts entered into to ship at first open water must be fulfilled, and shipments to some extent are in progress for this and other English markets. The dealers calculate with confidence on large arrivals from abroad, and are therefore by no means anxious to add to their stocks. The trade has throughout the month been languid, and prices have been gradually drooping. The fall has been greater on Scotch than on any other sort, and the former now stand at a relatively lower point (as compared with other descriptions) than is usually the case. This circumstance, and the probability that the shipments from Scotland will not be much longer continued on the same extensive scale, render us inclined to look for a small rise in prices of the finer qualities of Scotch. Latterly common feed have been sold at 20s., and in some cases even lower; whilst good parcels of 41 to 42 lbs. weight per bushel have realized only 21s. to 22s. per qr. Irish, owing to there being few on the market, have nearly maintained their former position; whilst Lincolnshire feed, and similar sorts, of 37 and 38 lbs. weight, have been offered at 16s. 6d. to 17s. 6d. per qr. Most of the foreign oats now on the market are of inferior quality: really good feed may still be quoted 19s. to 20s.; whilst the ordinary stale samples have been in vain offered at from 15s. to 17s. per qr.

Beans of home-growth have been brought to market rather sparingly; the supply has, however, been fully equal to the demand. The very finest qualities have been taken for planting, and have sold at about the same terms as those current towards the close of last month. Secondary and inferior descriptions have been greatly neglected, but have not been offered much cheaper. The most important fall has been in the price of foreign beans, particularly Egyptians, which may now be bought in granary here at 22s. to 23s. per qr., and to arrive at about 20s., cost, freight, and insurance. The loss to importers must be very severe, as high prices were paid abroad, and freights have also been high this season.

Peas have excited little attention, and beyond a few purchases for sowing, hardly anything has been done in the article. The abundance of foreign on the market has kept down the price of white, and whilst fine English boilers have been freely offered at 33s., grey and maple, of which we receive comparatively few from abroad, have commanded 35s. to 36s., and in some instances 38s. per qr. White foreign peas have been offered on

very low terms, say new boilers 25s. to 28s., and really good breakers at 30s. per qr.

A good demand for foreign spring tares has been experienced, and the value of this article has risen, 40s. to 41s. per qr. having within the last week or two been paid for large Brunswick, and similar sorts.

There has been some inquiry for Indian corn and rye on Irish account; but the orders have been at too low limits to allow of much being done. The consumption of these articles in England is trifling, more particularly now, when all other feeding-stuffs are so extremely low in value.

Most of the continental ports having been some time free from ice, spring business may be said to have been commenced; hitherto, however, the smallness of the supplies, and the generally high pretensions of the foreign holders, have prevented extensive operations. The firmness of sellers was confirmed, and increased by the tone of the advices from hence in the early part of the month; but upon it becoming known that the carrying out of the free-trade policy had not been followed by the activity which many expected, a little reaction occurred.

The latest accounts from Danzig are of the 17th instant: wheat was then offered 1s. per qr. below the extreme rates current in the commencement of the month: for the moment no further reduction was looked for, holders of that in warehouse having apparently determined to wait events, and supplies coming forward but slowly. A vessel capable of carrying 1,000 qrs. had been chartered to load for London, at 4s. per qr. freight. Moderate good wheat had sold at 42s. to 44s.; whilst for fine high-mixed 46s. to 47s., and the very best 48s. per qr. free on board had been asked. An opinion prevailed at Danzig that the yield of the wheat crop in Upper as well as in Lower Poland, had been very short last harvest, and that the supplies from those quarters would be too small to allow of prices receding materially.

From Königsburg our letters are also of the 17th instant. Some purchases of wheat seem to have been made at that port on English account early in the month, at high prices; but the demand having subsequently slackened, holders had given way about 1s. per qr. The quotations were then for high-mixed 43s., for fine mixed 42s., and for good red wheat 40s. per qr. free on board. The harbour and rivers were not entirely free from ice, but it was being rapidly dissolved, and shipments were expected to be almost immediately commenced.

At Stettin, on the 19th instant, the navigation was quite free: fair supplies of wheat had been brought forward by the growers; equal to 38s. to 39s. had been obtained for the ordinary sorts, and 40s. to 40s. 6d. for the best.

Our Rostock letters are of the 19th instant. A good deal of business had been done there in the early part of the month, and as much as 40s. per qr. free on board had been paid for fine qualities, weighing 61 lbs. per bushel. After the receipt of the London mail of the 13th February, the demand subsided, and prices receded 1s. to 2s., 39s. per qr. being then the top price.

At Hamburg a rise was caused early in the month by orders on British account; but many of these were subsequently cancelled, and on the 23rd instant good Upland red Wheat on the spot was obtainable at 40s. to 41s. 6d.; whilst from out-ports there were offers at 35s. to 39s. per qr. free on board, according to quality, rate of freight, &c.

In the Dutch and Belgian markets prices have also been influenced by the advices from hence; and as the accounts from England have not been very encouraging of late, the value of wheat has given way at all the near continental ports.

In the Mediterranean prices of wheat have all along been relatively higher than in the Baltic, and very few purchases have, we believe, been made in that quarter on British account. The quantity of bread-stuff's bought in the markets of the United States must also, we think, have been unimportant, as quotations have been too high on the other side of the Atlantic all through the winter, as compared with prices here, to hold out inducement to send orders.

By the most recent advices from New York, we learn that good brands of Western Canal flour were still held at equal to 24s. 4d. to 24s. 11d., and fine Genesee at 26s. to 26s. 6d. per barrel; which, with 2s. freight to Liverpool, or 4s. to London, would leave a poor prospect for the shipper.

At New Orleans, where prices were more moderate, some quantity of flour was reported to have been bought for England.

IMPERIAL AVERAGES.

FOR THE LAST SIX WEEKS.

WEEK ENDING:	Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Jan. 13, 1849..	45	4	29	11	17	8	27	9	32	2	35	0
Jan. 20, 1849..	45	4	29	1	17	1	28	4	31	1	34	9
Jan. 27, 1849..	45	3	28	10	17	0	28	11	30	3	32	8
Feb. 3, 1849..	45	1	28	10	16	11	28	5	30	3	32	6
Feb. 10, 1849..	45	11	29	3	17	3	27	2	30	11	33	0
Feb. 17, 1849..	47	0	29	8	17	2	26	9	29	9	34	4
DUTIES	1	0	1	0	1	0	1	0	1	0	1	0

PRICES OF SEEDS.

BRITISH SEEDS.

Cloverseed, red 35s. to 40s.; fine, 45s. to 63s.; white, 35s. to 55s.
 Cow Grass (nominal) —s. to —s.
 Linseed (per qr.).. sowing 56s. to 60s.; crushing 42s. to 48s.
 Linseed Cakes (per 1,000 of 3lbs. each) £10 5s. to £11 10s.
 Trefoil (per cwt.) 15s. to 21s.
 Rapeseed, new (per last) £27 to £30
 Ditto Cake (per ton)..... £4 15s. to £5
 Mustard (per bushel) white.. 8s. to 10s.; brown, (nominal.)
 Coriander (per cwt.)..... 18s. to 25s.
 Canary (per qr.)..... 95s. to 105s.; fine, 110s. to 115s.

FOREIGN SEEDS, &c.

Clover, red (duty 5s. per cwt.) per cwt..... 30s. to 44s.
 Ditto, white (duty 5s. per cwt.) per cwt..... 24s. to 50s.
 Linseed (per qr.).. Baltic 42s. to 46s.; Odessa, 42s. to 46s.
 Linseed Cake (per ton)..... £8 0s. to £9 10s.
 Rapeseed..... £4 15s. to £5
 Rape Cake (per ton)..... £4 15s. 5d.
 Coriander (per cwt)..... 16s. to 20s.
 Hempseed, small, (per qr.) 45s. to 48s., Do. Dutch, 45s. to 47s.
 Tares, (per qr.)..... small 28s. to 32s., large 38s. to 44s.

HOP MARKET.

BOROUGH, FEB. 26.

We have a good inquiry for the finer descriptions of Kent and Sussex Hops, and choice samples of yearlings are also in demand. The supply on offer is very limited. The following are the current quotations:—

Sussex Pockets..... 44s. to 56s.
 Weald of Kent ditto.... 52s. — 68s.
 Mid and East Kents.... 63s. — 130s.

HORTON AND HART.

POTATO MARKET.

SOUTHWARD WATERSIDE, FEB. 26.

Our market is so well supplied, and trade so heavy, that a reduction has been again submitted to with every description of potato on sale. The following are this day's prices:—

Yorkshire Regents 100s. to 140s.
 Scotch — to 120s.
 Ditto Cups 90s. to 100s.
 Ditto whites 70s. to 90s.
 French whites 80s. to 100s.
 Belgian..... 70s. to 90s.

WOOL MARKETS.

LEEDS, Feb. 23.—The demand for combing wools this week has been brisk, and prices continue to have an upward tendency. Clothing wools are also in good demand, at improved prices.

YORK.—We understand that the above annual market will be held on Thursday, the 8th of March next. It is expected that a larger quantity of wool will be shown than has been known for several years, on account of the briskness in the markets, and the large quantities held in the neighbourhood. Moor wool is very plentiful.

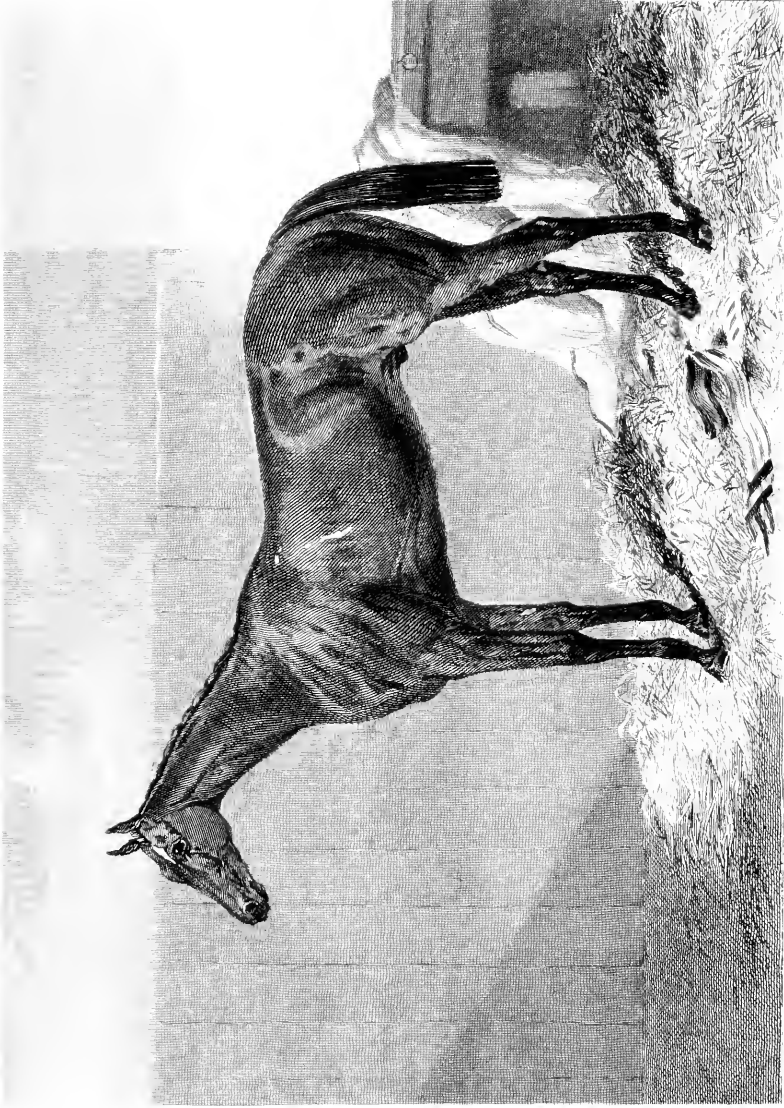
CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white	48 to 55	46 to 53
Ditto, fine selected runs	—	48 54
Ditto, red	44 48	41 46
Ditto, extra	48 52	42 48
Ditto, Talavera	—	—
Norfolk, Lincolnshire and Yorkshire..	—	43 46
Ditto, white	—	45 48
BARLEY, English, malting and distilling..	—	29 30
Ditto, Chevalier.....	—	30 32
Ditto, grinding	—	23 26
MALT.. Essex, Norfolk and Suffolk	—	58 59
Kingston, Ware, and town made....	—	53 60
OATS, Essex and Suffolk	—	17 19
Lincolnshire and Yorkshire (Polands)	—	17 20
Ditto, feed	—	16 19
Devon & West Country, feed or ack	—	15 16
Northumberland and Scotch, feed ..	—	20 23
Dundalk, Newry, and Belfast, potato	—	20 22
Limerick, Sligo, and Westport, potato	—	18 21
Ditto, feed	—	17 20
Cork, Waterford, Dublin, Youghal, and Clonmel, black	—	14 19
RYE	—	25 28
FLOUR, best marks (per sack of 280 lbs.)..	—	39 44
Norfolk and Suffolk, ex-ship.....	—	32 34
BEANS, Mazagan	—	32 34
Tick	—	27 30
Harrow	—	31 35
Pigeon, Heligland	—	35 36
Windsor.....	—	29 39
Long pod	—	27 29
PEAS, non-boilers	—	28 30
White, Essex, and Kent, boilers	—	32 33
Ditto, fine Suffolk	—	33 34
Maple.....	—	35 37
Hog and grey.....	—	—
TARES	—	34 36
INDIAN CORN	28 32	—
CAKES, Linseed, English, per 1,000	£10 15s. to £11 5s.	—









THE FARMER'S MAGAZINE.

APRIL, 1849.

No. 4.—VOL. XIX.]

[SECOND SERIES.

PLATE I.

SHORT-HORNED BULL.

The subject of our first plate (SENATOR, roan, No. 3548 Coates's Herd Book, vol. 7) the property of Mr. Henry Ambler, Watkinson Hall, Halifax; obtained the first local prize of 20 sovereigns at the Royal Agricultural Society's show at York in July last, as the best bull in Class No. 1. He was bred by the Earl of Carlisle, calved March 27, 1845; got by Lord Marlbro' (7166), d. (Sunrise) by Burlington (3245), g. d. (Snowdrift) by Rockingham (2550), gr. g. d. (Snowdrop) by Snowball (1463), gr. g. d. (Dahlia) by a Son of Mars (413), gr. gr. gr. g. d. by Defender (194), gr. gr. gr. g. d. by Marshal Beresford (415), gr. gr. gr. gr. g. d. by Magnum Bonum (2882), gr. gr. gr. gr. g. d. by Patriot (486), gr. gr. gr. gr. by Ben (70).

Senator won the following prizes and medals:—

At the Calder Vale Agricultural Association, held at Halifax in 1846 and 1848.

At Keighley, in 1846 and 1848.

At Wharfedale Agricultural Association, held at Otley in 1848.

At Wetherby, in 1848, he obtained the prize as the best bull of any age of all the classes, and silver medal as the best animal of the short-horned breed.

PLATE II.

THE HERO; WINNER OF THE EMPEROR'S PLATE AT ASCOT IN 1847 AND 1848.

(For description see page 306.)

GRASS LAND AND PERMANENT PASTURE.

BY J. TOWERS, MEMBER R.A.S., H.S. OF LONDON.

A very great difference of opinion has long prevailed on the question of permanent, or convertible pasture; but here, as on almost every other subject of the kind, a one-sided view only has been taken. Where the growth of corn and roots is made a primary object, it cannot be doubted that grass pasture is not deemed of much importance; but, on the contrary, in pastoral districts, wherein milk, butter, and cheese constitute the staple products of the farm, grass lands are indispensable; and these require a peculiar management to make them generally available. Thus, the objects being

twofold, it can never be right to yield obsequiously to the *dictum* of a person whose mind is influenced by any single predominant notion. "Cut up all permanent pastures," says one; but the British Islands are admirably qualified for grazing and pastoral productions, and therefore pastures must be maintained. "Corn of every sort can be, and is, grown exceedingly well with us;" but other European countries can grow it better; and, under existing circumstances, it may perhaps be wise to take an impartial view of our capabilities, in order to arrive at a sound and more profitable result.

I have been gratified by observing that the subject of grass land has been seriously taken up in the *North British Agriculturist*, the leading article of which (on *sowing natural grasses*) I propose to take into consideration, aided by some references to other standard works. Experience also may furnish some additional evidence of what can be done even with small pieces of land laid out as permanent pasture, and expressly devoted to dairy purposes. Whatever may be said of the vast importance of the cereal crops, few persons, we imagine, would be willing to give up the delicious milk, cream, and butter which are yielded, and can be produced, *only* by the real grasses laid down as permanent pasture; and, assuming this as granted, I come at once to my subject.

The late Mr. George Sinclair may safely be referred to as one of the leading authorities. He stated that pastures formed of rye-grass and clover only, afford about 75 plants to the square foot; whereas, the like space of rich meadow of the best quality yields 1,798 individual plants, and rich *permanent* pastures generally about 1,090 plants, consisting of 22 different species, showing plainly that grasses are of a social nature: and experience proves that, with a well-selected mixture, a much greater weight of hay or green fodder will be procured than it is possible to obtain from any one or two species of plants when cultivated separately. I have been surprised to observe the predilection for rye-grass: it is comparatively a poor, dry, leafless species. True it is that it is a great and heavy seeder, coming into flower about the second week of June, and ripening its seeds in less than five weeks; but then this fertility renders it not only an impoverisher of the ground, but far less profitable than the *Dactylis glomerata* (cock's-foot grass), which, in green herbage, is estimated to yield, per acre, in the spring, 10,209lbs., containing 1,189lbs. of nutritive matter; at the time of flowering, 27,905lbs., or 11,859lbs. when in dry hay; and finally, when the seed is ripe, the herbage, still succulent, produces 26,544lbs. of grass, convertible into 13,272lbs. of dry hay, containing 1,451lbs. of nutritive matter.

The object of the farmer, whatever that may be, must guide his individual course. Mine it is to point to broad facts; and therefore, assuming as certain, from the results of *practice* in every instance, that a permanent pasture cannot be formed by any *one* or *two* solitary species, it must be a mistake to sow clover and rye-grass alone, or even if blended with the doubtful, effete rubbish of the lofts called "hay-seeds." Another circumstance of moment (*fact*, I dare not call it) ought to be investigated with scrupulous attention. It is this: an opinion has long prevailed among practical

farmers that, "when the valuable sward of a rich natural pasture is once broken up, and a course of tillage-crops taken from the soil, *the sward cannot be again renewed*—or, at least, not until the lapse of many years."

When this passage was written, little was known of the perfect analysis of soil, and still less of the organic elements of plants. Now, however, incipient as are our approaches, enough has been discovered to give assurance that when plants fail on land in which they once flourished, *there* some essential constituents are wanting. Our earlier chemists paid little attention to the phosphates, sulphates, and silicates: hence, they could not refer to *causes* which had never been the objects of research. Be the opinion above alluded to correct or not, it behoves every grass farmer and rural economist to *observe*, and take written notes of the results of each experiment.

By the term *natural pastures* we understand those lands of deep, well-prepared, good soil, which become occupied by certain grasses, *self-sown*, by the seeds of such species or varieties as are specifically and locally appropriate to the *site*.

Now, it should be borne in mind that, however simple may be the appearance which the generality of grasses present to the casual observer, particularly before their flowering season, not any two species will be found to agree in the time or period when the *herbage* is in the greatest vigour and perfection of growth, in the quantity and quality of nutritive matters yielded by that herbage, the period of flowering and ripening the seeds, the weight of grass yielded to the scythe, that of the hay when mellowed in the rick, and the amount of nutriment afforded by each. Tables have been constructed, illustrative of these subjects to a great extent, by Mr. Sinclair, to which reference will presently be made; but before this be done, it is right to mention a law in the natural economy of grasses, that seems to govern all the species which experience has proved to be most valuable to the grazing farmer. It is this, according to Sinclair: that "individual plants of the same species will not grow close to each other for any length of time; for, however thickly planted from seed, in one or two seasons intermediate plants decay, and leave vacant spaces, which are soon filled up with spurious grasses, weeds, or moss; but when a variety of different species, adapted to the soil, are mixed together, they grow close, form a dense bottom, and continue permanent."

The following are grasses which, in good deep land, not previously under pasture, may, upon good authority, be sown with confidence of a profitable result. They stand in alphabetical order.

Quantity of Seed
per three Acres.

1. *Agrostis stolonifera latifolia* (true broad-leaved florin, or bent-grass) 1 peck.
It affords much autumnal and winter pasture, and stands droughty weather well. A small portion of the seed is sufficient.
2. *Alopecurus pratensis* (meadow fox-tail) 1 bush.
It flowers in April and May; ripens seed in June and July; yields, of green food, 9,528lbs.; at the time of flowering, 20,418 lbs.; and of dry hay, 6,125lbs. each per acre.
3. *Anthoxanthum odoratum* (sweet-scented vernal grass) $\frac{1}{2}$ peck.
It is poor in its produce, yielding at the season of bloom only 2,827lbs. of green food; but when the seed is ripe, 6,125lbs. per acre; and as hay, 1,837lbs. Its autumnal produce of latter-math, compared with the crop at the season of flowering, is estimated as 13 is to 9.
4. *Cynosurus cristatus* (crested dog's-tail) $\frac{1}{2}$ bush.
Green spring herbage, 6,125lbs.; hay, 1,837lbs.; *idem*, when the seed is ripe, 12,251lbs.; hay, 4,900lbs. Flowers from the middle to the end of June; ripens in July.
5. *Dactylis glomerata* (cock's-foot) 1 bush.
Already noticed.
6. *Festuca duriuscula*, or *glabra* (hard or smooth fescue) $\frac{1}{2}$ bush.
Its yield is not mentioned; but it is said to withstand dry weather better than most grasses; and, in combination with meadow fescue and *Poa trivialis*, forms excellent pasturage, particularly suited to "downs."
7. *Festuca pratensis* (meadow fescue) .. 1 bush.
According to Sinclair, in point of early produce, this grass ranks next to the meadow foxtail (No. 2). Its first green food is calculated at 10,890lbs. per acre; at the time of flowering, 13,612 lbs.; as hay, 6,465lbs., containing 957lbs. of nutritive matter. At the time the seed is ripe—grass, 19,057lbs.; or as hay, 7,623lbs., but reduced in nutritive power to 380lbs.
8. *Holcus avenaceus* (tall, oat-like grass) 1 peck.
The root propagates by bulbs; and the plant is apt to overcome the finer-leaved grasses. The nutritive matter contains also a proportion of the tonic principle, which renders it a valuable ingredient of a pasture,

if admitted in limited quantity. It ripens its seed in July. Cattle are very fond of this grass.

9. *Hordeum pratense* 1 peck.
Abounds in marsh pastures of the Isle of Thanet. Like the oat-grass, it constitutes another link between the cereal and true pasture-grasses.
10. *Lolium perenne* (rye-grass) 2 pecks.
The best varieties are "Russell's" and "Stockney's." The plant, when new, flowers about the second week of June; but later as it becomes older. In about 25 days the seed ripens. The produce is chiefly in the spring; the latter-math crop of herbage is deficient.
11. *Phleum pratense majus* (larger meadow cat's-tail) 7 or 8lbs.
The culms at the time of seeding contain more nutritive matter than any other species, as the following estimate will show:—At the time of flowering (mid-summer) the green herb is calculated to be 40,837lbs.; in hay, 17,355lbs. When ripe, the herbage is the same in weight; but the hay is increased by 2,040lbs.; and the nutritive matter amounts to 2,668lbs. The smaller *phleum* is to be rejected as worthless.
12. *Poa annua* (annual meadow-grass) .. 1 peck.
A good fodder grass, abundant according to the richness of the ground; but of short duration, and therefore ought to be re-supplied by frequent sowings.
13. *Poa debilis* and *depauperata* (slender meadow-grass) 2 pecks.
These grasses, little known, are recommended by Mr. McIntosh to "enter largely into all permanent pastures, affording a very early bite, and continuing to produce ample foliage throughout summer and autumn.
14. *Poa trivialis* (smooth-stalked meadow-grass) 2 pecks.
Praised by Mr. Curtis, Mr. McIntosh, and Mr. Sinclair, for early, late, and abundant in produce. In June the green grass is stated at 7,486lbs.; when the seed ripens in July, the herbage is 7,827lbs., and yields as hay 3,522lbs.; the latter-math grass, 4,764lbs.
Besides the afore-named true grasses, four other plants combine to constitute a permanent pasture: these abound in succulent and nutritive matter, and are grateful to cattle. They are—

- 15. White or Dutch clover (*trifolium repens*)..... 7½lbs.
- 16. Bush vetch (*vicia sepium*) 1 peck.
- 17. Perennial or red clover (*trifolium pratense*) 6lbs.
- 18. Yarrow (*achillia millefolium*)..... 2lbs.

The reader will observe that these preliminary remarks bear only upon new-made pastures for dairy purposes, continued permanently as such. On convertible and temporary pastures we must defer our observations for a month.

SOME OF THE USES OF CHARCOAL AS A MANURE.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

I have on former occasions alluded to the use of charcoal as a manure, especially when employed in combination with rich decomposing animal and vegetable substances, and even when used in an impure state alone. I have often noted the powerful effects of such a mixture when used as a dressing for grass. It is always with much satisfaction that I find my own conclusions confirmed by the observations of the farmer, and explained by the laborious scientific researches of the chemist. Some recently published trials of a Scotch farmer seem to prove the value of charcoal when used in combination with guano—a substance, like ordinary farm-yard manure, abounding with ammoniacal salts, and therefore, as in the case of charcoal mixed with farm-yard manure, its beneficial action is perhaps explainable on the same grounds.

The practical experiments to which I have alluded were made in 1848 by Mr. A. Ross, of Corehouse, Lanarkshire, on young grass. The soil selected is a light brown loam, having an easterly aspect, and an elevation of about 700 feet above the level of the sea. The manures were applied as top-dressings, on the 14th of April; the grass cut on the 3rd, and the hay weighed and stacked on the 15th, of July (*Quar. Jour. Agr.*, 1849, p. 724).

The soil simple produced	Cwt.	36
Peruvian guano, 1½ cwt.....		56
Peruvian guano, 1 cwt.....	}	63
Animal charcoal, 2 cwt.....		
Peruvian guano, 1 cwt.....	}	54
Saldanha Bay guano, 2 cwt.		
Saldanha Bay guano, 4 cwt.	}	42
Saldanha Bay guano, 2 cwt.		
Gypsum, 4 cwt.....	}	47
Saldanha Bay guano, 2 cwt.		
Animal charcoal, 2 cwt.	}	58
Animal charcoal, 3½ cwt.....		
Animal charcoal, 2 cwt.	}	40
Gypsum, 3 cwt.		
Gypsum, 7 cwt.	}	41
Gypsum, 4 cwt.		
Common salt, 4 cwt.....	}	41
Coal-ashes, 60 cwt.....		
Turf-ashes, 60 cwt.		43
Common salt, 9 cwt.....		40
Turf-ashes, 40 cwt.		39
Liquid manure, 140 cwt.....	}	54
Liquid manure, 300 cwt.....		
		49

The use of the charcoal, in these trials, was evidently very considerable. We have other evidence to the same effect. Its general power is, in fact, undoubted. The readiness, too, with which an impure charcoal is procured in many situations renders it a valuable agent in the farmer's hands. One of the many modes of producing an impure charcoal is as it exists in charred peat or in the ashes produced by clay-burning. As to the last great and valuable mode of improving the fertility of clay soils, as I had occasion to remark in another place (*Bell's Messenger*), it is a practice which is at present not in general so well understood as is desirable. Then, again, some recent observations and valuable experiments reported by Mr. Pusey render another course of trials expedient for the clay-burners of many soils. This mode of increasing the productiveness of a heavy clay land has several recommendations to induce its trial. It produces not only immediate benefit on particular descriptions of clay soils, but, to a certain extent, the benefit is of considerable duration. Again, it is a mode of improvement easily tried on a small scale; the manner of the burning may be varied according to circumstances; and, moreover, almost all the outlay, all the capital needed for the effort is in the labour of digging or paring, and in attending the fires; so that in any event the labourer gains, if the farmer fails to reap an abundant harvest from his efforts. These circumstances, in some of the clay districts, are not without their value. The effect of the manures within the reach of their tenants are at best often of a very brief duration; and sand, or chalk, or lime, whose effects are on many clay soils so extended, are far out of the profitable reach of the farmer. It is very desirable, then, that the effect produced upon the ordinary stiff clay soils by the action of burning or charring should be accurately examined. The chemistry of the operation would most likely, if accompanied with comparative examinations of the soil before and after being exposed to the action of fire, afford us valuable practical information. We should then be no longer in doubt as to the cause of some clay soils being so materially, and others so little, benefited by being thus treated. We have hardly, in fact, any more information on this head

than that which Sir H. Davy left us—a knowledge which, however valuable as far as it extends, is still far from being so extensive as is desirable. He examined the ashes produced by paring and burning a chalk, a siliceous, and a stiff clay (*Ag. Chem.*, 347). The earthy matter of these varied with the nature of the soil. They had, in common, charcoal (which I take to be the most valuable ingredient) and oxide of iron in the following proportions per cent. :—

	Chalk.	Sand.	Clay.
Charcoal	4½	6	8
Oxide of iron..	7½	9	7

It will be noted by the farmer that, as might reasonably be expected, the charcoal of the clay was in much the larger proportions; for, more preserved from the action of the air, its combustion would be slower than in the other more porous earths. Professor J. F. Johnston evidently seems inclined to search for the explanation of the phenomena of clay-burning in the mechanical results produced—a conclusion in which my own observations do not lead me exclusively to concur (*Agr. Chem.*, p. 201). After alluding to the practice of paring and burning, he continues, “Much greater uncertainty hangs over the alleged virtues of clay-burning. That benefits are derived from the use of it, there can be no doubt, the most waxy clay lands in some districts being lightened by it, and improved for many years after it has been applied. In some cases, indeed, the better tillage of the land generally presented, along with the use of burnt clay, may have had some share in producing the good results actually experienced during its use. By the burning in kilns or otherwise, any organic matter the clay may contain will be consumed, and the texture of the clay itself will be mechanically altered. It will crumble down like a burned brick into a hard, friable powder, and will never again cohere into a paste as before the burning. It will, therefore, render clay soils more open, and may thus, when mixed with them in large quantity, produce a permanent amelioration in the mechanical texture of many stiff wheat soils.” Bricks are generally more porous than the clay from which they are formed; burnt clay is so also; and all porous substances suck in and *condense* much air and many vapours in large quantities into their pores. In consequence of this property, porous substances, like charcoal and burnt clay, are supposed, when mixed with the soil, to be continually yielding air to decaying vegetable matter on the one hand, and as continually re-absorbing it from the atmosphere, and by this means to be of singular service in supplying the wants of plants in the earlier seasons of their growth. It is said very

truly, by practical men, that a good clay for burning should not bake into a brick, but should fall to powder in the air after burning. A good clay is also liable to be over-burned. These facts seem to imply that the best clays contain a good deal of lime, which is rendered caustic by the burning, and falls by slaking when exposed to the air. By too much burning, the lime would be converted into a *silicate*, by combining with the silica of the clay, and will melt. In this state the lime would have little immediate effect upon the land. It must be confessed, however, very justly concludes the great chemist of whose labours we have so often availed ourselves, that on all these points considerable obscurity still rests. It is the part of science, therefore, to decline offering more than a conjectural opinion till the facts to be explained are themselves more satisfactorily demonstrated. Whatever doubts, however, we may entertain as to the chemical theory of the operation of clay-burning, it is certainly of the most considerable and novel importance to find that it is an operation which on some soils may be profitably repeated for two or three seasons. Such are the series of operations described by Mr. Pusey (*Jour. R. A. S.*, vol. 9, p. 422), on land which he describes as very strong clay. “It may be said to have no soil, to be all subsoil, and that clay untempered by any grit; so that in dry weather the horseway over it shines as if the roads were polished; and in such weather I have seen workmen endeavouring to dig it for making a road, but obliged to relinquish the attempt, even with the help of a pickaxe. The land having been drained, the occupier, Mr. Cheer, had the whole pared by breast-ploughing, in February, 1846, paying the breast-ploughmen 11s. per acre. On part of the land, the sward turned up was burnt: very wet weather prevented the burning of the remainder. It was sown with oats, and the produce per acre was as follows :—

“FIRST YEAR.

Land where the sward was burnt	6 qrs.
On the land, unburnt.	2 qrs.

“After the oats were housed in August, 1846, Mr. Cheer agreed to pay 18s. per acre for breast-ploughing and burning the same land again, which the men did on three or four acres; but the ground got so dry and hard, that the men gave the job up, until rain fell in October, and then finished breast-ploughing the piece, which, owing to the wet weather, could never be burnt, so that the sward turned up was wheeled together before sowing the wheat. Where it was breast-ploughed and burnt, there was a very good crop of wheat; when not burnt, there was a very bad one.

"SECOND YEAR.

Yield of wheat on burnt land, per acre, about	5 qrs.
Ditto, on land unburnt, about	5 sks.

"Seeing the good of breast-ploughing and burning in the year 1846, on August 17, 1847, he again breast-ploughed the field, and burnt it over well, at 8s. per acre for breast-ploughing, 10s. per acre for burning, including the unburnt sward of the preceding year, half-a-crown for spreading; then breast-ploughing it again in October, in order to cover the seed which was drilled in. The produce just harvested and threshed out, was, on the field of 11 acres, 57½ quarters; or—

"THIRD YEAR.

Yield of wheat per acre, on field entirely burnt	42½ bush.
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"This last autumn," concludes Mr. Pusey, "Mr. Cheer again breast-ploughed and burnt the land, obtaining 100 bushels of ashes per acre; and requested, and for a fourth time, with my consent, sowed it for a fourth year with wheat. It should be observed that the expense of breast-ploughing and burning, low as it is, need not be regarded as an extra expense; for the land received no horse-ploughing, which on this land may be valued at from 15s. to 20s. per acre for each time of ploughing." The object in not horse-ploughing the land was the preservation of its solidity. On so very heavy a clay, this may seem a hazardous omission; but the result proved it otherwise. It is evident that in this old grass land there must have been a great abundance of vegetable fibre, or the land could not have been thus burnt for four years successively. Old arable land would not contain enough vegetable matter, and could not be so treated. The burnt soil evidently acted as a manure. In dwelling upon this valuable experiment, I do not entirely agree with the conclusions drawn from it by Mr. Pusey. I am more inclined to believe that, although the combustion of the organic matters of the surface-soil would enrich the ashes which were so produced, yet that still an almost equally good result would have been produced, had his tenant procured the material for burning from beneath the surface—that is, if he had burnt the clay produced by sinking a pit. I am the more confirmed in the conviction of the importance of clay-burning, from some former results obtained by Mr. Cheer on the same farm, at Longworth, in Berkshire, in 1845 (*ibid.*, vol. 6, p. 473); also a detail, for which the farmer is indebted to Mr. Pusey. In that year, upon claying for wheat a field of eight acres, a corner of the field was left undressed, "that we might know whether it was

worth while to burn any more clay. The crop was a very fine one; and after harvest, Mr. Cheer thrashed out about one-eighth of an acre separately. The produce of wheat per acre was found to be as follows:—

	Bushels.
Soil simple	37¾
Dressed with 80 yards of burnt clay	45½
80 yards ditto, and sheep folded	47½

"I have now lying before me," continues Mr. Pusey, "the valuation at which I bought this very field, one of the worst in the farm (a farm of the worst possible character, so that even in 1839, when prices were good, many farmers who looked at the farm declined to occupy it: it is about 500 acres, on the Oxford clay of the stiffest description); it is 10d. an acre for rent, or £14 for the fee-simple."

Thorough-draining with stones, at ten feet asunder, cost about £3 10s.; it could now be done with pipes for £2. Dressing with 80 yards of burnt clay cost about £2 5s. The crop in 1846 must have been worth about £17, or nearly the fee-simple of the land, and the cost of the improvements. The practical farmer will consider these successful trials with the careful attention they deserve. They are of a class of efforts which comprehend the calling forth the resources of the land itself, unaided by purchased artificial fertilizers, or any outlay for improved machinery. As the result of my own experience, I confess that I am rather more inclined, generally speaking, to the practice of burning the clay obtained from pits, than to the paring and burning system; since, by the first plan, we avoid the wasteful combustion of the organic matters which all cultivated soils contain. By burning the clay obtained from beneath the surface of the land, all the other advantages of copious dressings with clay-ashes are in general obtained; and if the carbon contained in these is less, the deficiency is well supplied to the after-crops, by the advantages derived from the slow decomposition of the vegetable and animal substances, which are consumed in the burning of the surface-soil. I have thus rapidly glanced at the uses of charcoal as a manure in three different states—the most powerful as in animal or vegetable charcoal; or, less pure, as in charred peat; and in perhaps its most impure form, as found in carefully-burnt clay-ashes. In each case it produces, on many soils, excellent effects. It possesses a value, too, almost peculiar to itself—it not only is powerful when used in its simple state, but, when united with decomposing organic manure, it not only increases their power, but it adds materially to the duration of their effects.

THE LONDON FARMERS' CLUB—MONTHLY DISCUSSION.

The monthly meeting of the Club was held on Monday, March 5, at the Club Rooms, Bridge-street, Blackfriars; the chair being taken (in the absence of the Chairman for the year) by Mr. J. Pain, of Felmersham, Bedfordshire. The question appointed for discussion was the following:—"What is the most efficient, beneficial, and economical mode of providing manure for a farm?" the proposer being Mr. C. Lawrence, of Cirencester.

The CHAIRMAN said—In consequence of the absence of our worthy chairman, Mr. Robert Smith, it has fallen to my lot, as your Vice-president, to represent him on this occasion. I have only to beg that you will extend your kindness to me as you have done to him, and that you will overlook my imperfections (cheers). It is a part of my duty to remind you that, with the exception of the proposer of the question, every speaker is limited to twenty minutes. That being now a rule of the society, I hope from this that each gentleman who may address us will discuss the subject with that good feeling which has generally been witnessed on similar occasions. The Chairman having then announced the subject, in the terms stated on the card,

Mr. C. LAWRENCE spoke as follows—When the members of this club were invited by the circular of the secretary to suggest subjects for discussion at the ordinary meetings during the season, I was not aware, in consequence of not having been present at such meetings, that a member whose suggestion had been adopted by the committee was expected personally to introduce the subject. Had I been acquainted with this I should not have ventured to propose one, as the proposer is probably expected to impart that knowledge and information on the question which, in the present case, he hoped to obtain from his brethren of far greater experience. With this disclaimer of any ability to teach, I will state to you those points which appear to me, on a very limited experience, as inviting the particular attention of the agriculturist on the question proposed for our consideration this evening, viz., "What is the most efficient, beneficial, and economical mode of providing manure for a farm?" I will also detail the facts and reasons upon which I have been induced to consider them of primary importance in our pursuits, and which have influenced my own practice. What then is the object of manuring? To enable us to produce in the greatest perfection, in the soil we may chance to have to operate on, those plants which yield to man and other animals the most nutriment, the natural habitat of many of which is in other soils and climates. This is, therefore, in many respects, a purely artificial process. If nature had in every soil provided all the requisite elements, it must be borne in mind that nature returns all her products to the soil, and provides by their decomposition the essentials of future produce: but man requires much more than the spontaneous productions of the soil; he draws year by year on all the richest stores of

nature, and carries them from her surface to feed and increase his race, and that of numerous domesticated animals. In order to maintain the fertility of our farms unimpaired, it is undeniable that we must return to them an equivalent for all those elements essential to the future crops we require, which we have removed by former crops. Assuming that we consume all our hay, straw, roots, &c., on the land, in the shape of the manure which results, still we carry off from nature's store much of her available materials for future crops in the shape of grain, beef, mutton, &c., which ought to be restored; and if, from want of attention, care, and good management of our home manure, we sacrifice any of its elements, which are essential to the growth of plants, that loss must be supplied in some shape at an additional cost. A thorough knowledge of these essential elements, and a careful preservation of them are become of vital importance under the disadvantages and burdens which oppress us, as compared with the condition of the foreign growers with whom we have to compete. We must call Science to our aid as the only sure guide; it is in her paths alone that we can tread safely, and therefore economically. There is still, unfortunately for themselves, a large class of agriculturists who not only disregard the lights of science, but look upon the very term, as applied to agriculture, almost as an imposition, and say, What has science to do with agriculture? That is to be learned only by experience. I doubt whether such men have taken the trouble to inform themselves what the term "science" really means, and that when they shall have learned that it is simply another term for knowledge, and means neither more nor less, they will regard it with more reverence, and I trust with greater regard. Experience is of the greatest value as respects numerous particulars of great moment to successful farming; for example, in the breeding, rearing, and selection of stock of all descriptions, and the management of it, and in dealing of all sorts, and in teaching the best times and seasons for conducting the various operations of husbandry; but knowledge, or science, is in every pursuit a very important auxiliary to experience, and becomes essential to the direction of economical agriculture when the English farmer, burdened and fettered as he is, must compete in the same markets with unburdened Europe and the East. Experience is nothing more than the observation of facts, and the remembrance of them with their attendant circumstances. As to the why and the wherefore it is barren of all intelligence. It is the mere memory of effects disconnected from their causes, and is therefore a very imperfect guide as respects many of our operations which involve considerable cost. The subject under our consideration has afforded many an expensive illustration of this. A farmer has observed the application of a particular manure followed by a productive crop; he knows not wherefore; he publishes his experience, and those who are content to tread only in the paths of

experience purchase this manure, derive no benefit, and lose their money. Science would have foresworn why the application would be beneficial in the one case, and why it would be inoperative in the other. Aristotle observed, more than 2,000 years ago, "To know and to understand belong rather to science than to experience, and we think that the scientific are wiser than those who derive their knowledge from experience only; because in all men wisdom springs from knowledge rather than any other source. Those who are skilful from experience only know indeed that a thing is; they do not know why it is: the scientific know the why and the cause of a thing." Experience teaches you that the same cause under the same circumstances will always produce the same effect; knowledge unfolds the principles of its operation, which may enable you to accomplish many other beneficial objects, under a variety of circumstances, by the employment of the same means, or some modification of them. It is to those superior minds alone, who have not been content with mere experience without ascertaining the why and the cause of a thing, that we are indebted not only for the aids, comforts, and enjoyments of still advancing civilization, but for our assurance of their continuance, when based on the unerring principles of science. It was a matter of common experience that an apple when ripe would fall from a tree, but a Newton was not satisfied without inquiry into the cause of this, and that inquiry developed the laws which have maintained the planetary system in its appointed course, and has led to infinite applications of the principle for the ordinary conveniences of life. I have been led into this digression from the specific inquiry of the evening, under a very strong conviction that agriculture can only be carried out economically and successfully when treated as a science; nay, as the most important of all sciences; teaching the mode of raising food for the whole human race, which, in the most highly civilized states, are treading close upon the existing means of subsistence. If we desire to produce any specific compound, the first inquiry which reason suggests is—what are its elements? and in what proportions are they combined? We then proceed to obtain the relative quantities of these materials. Applying this obvious process of reasoning to any crop we may desire to grow on a particular space, science informs us, on careful analysis, that a given weight of the straw and grain of wheat, for instance, contains certain inorganic or mineral elements in certain definite proportions: the inference is that these are essentials to its growth; science will also inform us whether the soil in which we propose to grow wheat contains these essentials, and in sufficient quantity; it will further point out to us in what particulars, if any, it is deficient, and thereby indicate the least expensive mode of supplying such deficiency by suitable manure, and prevent our wasting materials which are either not applicable to our purpose, or, being applicable, exist already in the soil in sufficient. Some of the most fertile soils in Europe have been carefully analyzed; and not only their constituent parts, but the proportions in which they are combined have been exactly ascertained and published. Similar analyses have been made of comparatively sterile

soils; and on comparing these results, we have the opportunity of seeing at one view the more important sources of fertility, irrespective of collateral incidents, such as climate and position. From the lectures of Professor Johnston, and the analyses contributed by Professor Way and his coadjutor to the journals of the Royal Agricultural Society—by far the most useful and important contributions yet made to the agricultural world—we learn the essential constituents in soils for producing in perfection all the roots, grain, pulse, &c., which we are in the habit of raising; and the quantity of those constituents removed from the soil by the production of a given quantity of any of those crops; and thereby we get at an exact indication of what we must, in some shape, return to the land, on removing such a produce, to maintain its fertility unimpaired. This we may all accomplish with very little trouble, by the aid already provided for us by science; but we may go a step further, and procure an analysis of the soil under our own cultivation, and may thereby learn that it naturally contains certain necessary essentials to all the crops which we desire to raise, in such abundance that there would be no occasion for restoring to the land those elements, possibly, for a long series of rotations; or, on the contrary, its natural deficiency in some of those elements. All the materials we have to deal with, whether manures, soils, or the produce from them, are commonly divided into organic and inorganic. The former are destructible by the agency of fire; the latter are mineral, and incombustible. The organic constituents bear a very large proportion to the inorganic, from 70 to 90 per cent.; the latter are, however, essential; that is to say, with the organic elements alone we cannot produce corn or roots; but with the inorganic elements alone we can produce them, though assuredly not in the same perfection as by the due admixture. Mr. Huxtable's startling announcement, that he could grow a turnip upon the mahogany table before him, was warranted by science, and was afterwards practically accomplished, and is an apt illustration of our position. Comparatively minute therefore as is the requisite proportion of mineral elements, they demand our careful attention. Having determined their importance, and ascertained their existence in sufficient quantity for the production of the crop we propose to raise, the next inquiry which presents itself is—to what extent will the crop when gathered have appropriated in its growth those elements? It is found, on analysis, that an acre of wheat, being an average crop, carries off with it no less than 220 pounds of inorganic elements, viz., 30 lbs. in the grain, and 180 lbs. in the straw; a striking proof, by the way, of the importance of consuming the straw upon the land. Barley, in like manner, appropriates 213 lbs.; 53 lbs. in the grain, and 160 lbs. in the straw. Oats 326 lbs.; viz., 32 lbs. in the grain, 30 lbs. in the husk, 54 lbs. in the chaff, and 210 lbs. in the straw. As the latter grain is sold enveloped in the husk, it will be seen that this corn when sold conveys away much more mineral matter than barley, and more than double the quantity conveyed away by the grain of wheat. A crop of turnips of 20 tons to the acre, if removed from the land, would carry off 650 lbs. of

mineral matter; potatoes, 580 lbs., including the tops, which would contain about 400 lbs.; and cabbage would carry off nearly 1000 lbs. In order to maintain our land in the same state of fertility for the reproduction of these crops, it is clear that we must return to it those essential elements which have been thus abstracted. This we accomplish, to a considerable extent, by the conversion of a large proportion of them into manure, to be again applied to the land, provided we take care that none of it is wasted. The only necessary loss is that which is sold off in the shape of grain, beef, and mutton. Our ordinary manure consists of the solid and fluid excrements of our stock, combined with the straw with which they are littered. Even at this day this highly valuable compound is often treated as if the solid excrement were the all-important material, and the fluid has been suffered to run where it listed; while science teaches us that urine contains all the soluble mineral substances of the food of animals, and that the *fæces* contain only those ingredients insoluble in water. As plants during their growth can avail themselves only of those mineral or inorganic elements which are soluble in water, it is clearly of the first importance that the fluid excrements of animals should be most carefully preserved, and be especially protected from rain, which would carry away their most valuable properties. Nitrogen, supposed to be a most influential agent in vegetation, is derived chiefly from the decomposition of organic, and more particularly animal, matter. This proceeds rapidly under exposure to air, moisture, and warmth; and under such influences this is dissipated into the atmosphere in the shape of ammonia, which is very volatile. In what manner, however, plants appropriate nitrogen is yet undetermined. Reasoning on those facts which have been well ascertained, the conclusion appeared obvious that we should guard against any waste of the fluid excrements, and preserve the solids as far as possible from atmospheric influences. To accomplish these objects various plans have been suggested; some have gone the length of recommending that our yards should all be roofed in; and this has actually been carried into effect in some cases. The plan recommended and adopted by Mr. Warnes, of Trimmingham, appeared to me, theoretically, to fulfil all the requisite conditions, as respected manure, and with the greatest economy; but as respected the health and condition of the animals, the system was so opposed to all preconceived opinions, that I could not entertain it without careful personal observation and inquiries. I went into Norfolk for the purpose, and inspected Mr. Warnes' boxes, and subsequently the farm homesteads of three other gentlemen who had fitted up their stalls on the same plan; and I made inquiries of those who had the charge of the cattle. The experience of all these parties was most unequivocal in favour of this system, and my personal observation satisfied me that there was no foundation for the prejudices I had conceived. The animals I saw indeed told their own story. I converted all my own stalls into boxes two feet deep, and of an area equivalent to nine feet square, and from my own experience and observation, in other cases in which this dimension has been exceeded, I would

caution any one against boxes of a larger size. These are filled in from 12 to 13 weeks, when they turn out seven cart loads each of manure fit to go at once upon the land, containing all which has passed through the animals undiluted and unfermented; and consequently comprising every inorganic element, as well as those the decomposition of which is to furnish the organic materials of vegetation and nutrition. When the boxes require to be emptied at a period at which it would be ineligible to cart the dung to the land, we lightly plough a sufficient space on a convenient headland (which will usually be found deeper in soil than the rest of the field, from accumulations in the course of years from turning the team), to receive any little fluid which may ooze out from the heap. This is formed five feet in thickness, and of a certain length and breadth, to enable us to calculate, when settled, the quantity in cart loads. We mix rough salt with the dung as the heap is formed, and when completed we dilute sulphuric acid with about eight times its weight of water, and apply this over the surface, and then cover it immediately with from six to nine inches of earth. No turning is necessary previously to use on the land. I should observe that all the litter is cut, in from four to six inch lengths, by the chaff machine when the engine is at work for threshing, bruising linseed, &c.; a very important feature in this system, as respects economy in litter, facility of emptying the boxes (which could hardly be accomplished if long straw were used without the aid of a bay knife, as it is so firmly trod), the ready absorption of the fluids, and the fitness of the manure for immediate application to the land without any turning. This manure comes from the boxes in the most satisfactory state; it is moistened throughout without being wet; not a drop of fluid falls from the carts which convey it away. I have seen very strong opinions urged against this system. I know they cannot proceed from those who have tried it, or seen it tried in well-drained homesteads from which no spring or surface water can enter the boxes. The statements to which I refer are in every particular exactly the reverse of my own experience; an observation which has been repeatedly made by others on recent inspection of my animals. The experience of one year, during which I turned into the market 33 fat bullocks, determined me on converting my stables into cottages for those who had charge of the teams, and on building eight boxes for my horses. These were made nine feet square and one foot deep only, because I anticipated the treading would not be so complete as with cattle, which are always in the boxes, and also because the excrement of horses, by nature more readily disposed to fermentation, would by the free admission of air more readily enter into decomposition. That this does in fact occur to some extent, I have ascertained when these boxes have been emptied; but this is in a very slight degree perceptible to the senses on the surface, which is perfectly cool when the boxes are full. I am by no means sure that this premature fermentation is not occasioned by the want of depth, and consequent solidity of the contents; and I propose putting a pair of horses into the cattle boxes to determine this point. These boxes are almost free from

the effluvia of ordinary stables, and the blacksmith reports the horses' feet in excellent order. They are emptied every month, and each contains about four cart-loads of manure. This additional experience induced me to erect 14 styes, 8 feet by six, to contain two fattening pigs each, the whole under cover. I find the animals thrive very fast, and seem thoroughly comfortable; but so long as they are in an active state, some of them indulge their inveterate habit of turning over every surface they can get their noses into with facility; this is the only untoward feature of the system as respects them. When they get lazy and abandon this practice, their dwellings are infinitely more sweet than those on the ordinary plan. There is no manure visible on my homestead—none exposed to dilution or atmospheric influences—none which requires any manipulation in turning. I regret that I am not prepared to give you any comparative analyses of manure so made, and of that treated in the ordinary mode; but I believe these will shortly be made at the Agricultural College. Since the 16th of October last we have hauled out 400 loads of manure thus made, which I feel confident will turn out equivalent to 600 made under ordinary exposure. I may here observe, parenthetically, that the gentlemen of the Agricultural College have been more rapid in their movements than I expected to find them when the preceding portion was written. They have made the analyses, and forwarded them to my residence yesterday; but as I happened to be then at my brother's, at Ealing Park, the letters have not been delivered to me, and I have thus lost the opportunity of communicating to you the result.* I sent a portion of manure from my stalls to Professor Way, and a portion of farm-yard manure belonging to a friend, who adopts the common farm-yard system, to the Agricultural College, considering that although the comparison might not be perfectly fair, still the result would prove something. In order that the trial should be perfectly fair, it is necessary that the animals be kept in boxes; and the animals kept in the ordinary manner should be fed in the same manner, and in other respects be on an equality. (Hear, hear.) We should then be able to obtain a correct comparative analysis. I now proceed with the subject. So far as

* Since the above was in type, we have received the following Analysis, made at the Agricultural College, of manure taken from Mr. Lawrence's boxes, and of manure taken from an open yard, into which the litter from ordinary stalls had been thrown:—

	Box Manure.	Yard Manure.
	Per cent.	Per cent.
Water	71·4	71·00
Nitrogenised matter, capable of yielding ammonia, 100 parts dried	2·37	1·7
Salts soluble in water, containing organic and inorganic matter....	10·7	4·6
Organic	6·42	1·82
Inorganic	4·28	2·78
Phosphoric acid	·3	0·26
Alkalis—Potash and soda	2·00	·8

This analysis was undertaken merely for the purpose of ascertaining whether it might afford any striking evidence of the disadvantage of the exposure of manure to rain and atmospheric influences; to form a perfectly accurate comparison, it would be an essential condition that the animals should have been fed exactly alike.

we can judge from external appearances, from the playfulness and energy of the animals as feeding time approaches, the appetite with which they empty their mangers—their tranquil siesta during the intervals of feeding—the supple and soft touch of the skin, and early maturity—we may reasonably infer a state of enjoyment. That the system is in no respect prejudicial to health may be equally inferred from the same symptoms; but the most unquestionable evidence on this point is, that my boxes were completed the end of October, 1847, since which they have contained 63 head of cattle for fattening, of all ages, with only one mishap. That was in the case of a fine cow, supposed to be barren, which proved in calf when just fit for the butcher after high feeding. She dropped her calf in the night, and was found in the morning out of her box in an excited, furious state: rapid inflammation supervened, and she died in 24 hours. Not having found any manure on my farm when I took possession of it at Lady Day, I had no alternative but to purchase all that was requisite for the crops of that year. Rotten dung, guano, nitrate of soda, muriate of ammonia, soot, &c., cost me upwards of £200 upon a farm of 270 acres, of which 206 are under tillage. I shall this year make 800 loads of very rich manure between the 1st of September and the 1st of June, which will give me 16 loads per acre for every root crop. I shall only have to purchase a small quantity of bones and sulphuric acid to drill with the turnips, to give them an early start. This preparation and feeding off half the roots on the land will, it is believed, in conjunction with deep tillage (we always follow the common plough with a subsoil plough for the root crop), amply supply the elements required for the three succeeding crops of barley, seeds, and wheat, which, so far as my observation has gone, is not the case with any artificial manures, useful as they unquestionably are in particular cases. I venture to submit, for the reasons assigned, that the system I have described is an efficient and beneficial mode of providing manure for a farm; my brief experience has been insufficient to enable me to form any opinion in reference to its comparative economy (cheers).

Mr. MECHI: Mr. Chairman, I have very few words to say on the subject which has been introduced. I can confirm to the letter the remarks made by Mr. Lawrence, in reference to the feeding of animals, having carefully watched the condition and progress of the animals in my boxes, and the effect produced upon the manure. I was particularly struck with the excellence of the system as regards horses, and I think it may be carried out with great advantage, both to the animals and the manure. So far as my own experience goes, I have observed that much of the success of box-feeding depends on cutting the straw into short lengths. If you feed animals upon green food, affording a good deal of liquid, you will find that the glass which encircles the straw prevents the admission of the liquid. Although the straw may be trampled, yet the liquid keeps rising between, without being absorbed. If, therefore, you are to carry out the operation successfully, the straw must be cut into as short lengths as possible. This can be accomplished at a very moderate expense, where, as in Mr. Lawrence's case, a

steam engine is kept on the premises. With regard to my own farm-yard, I regret exceedingly that it is not all covered in; for although all my buildings are spouted, and a comparatively small space is exposed to atmospheric influence, it has been found practically that the rain which penetrates does considerable injury to the manure. I should be almost afraid to attempt to calculate the mischief which was done to the farming interest of this country by the enormous quantity of rain which fell within a few hours, on Wednesday last. It must be obvious that the best parts of the manure thus carried away amounted, in pounds, shillings, and pence, to many thousands of pounds. As regards animals, I am certain that their condition in the earliest stages is quite equal under the box-feeding to their condition under any other system of treatment which could be mentioned. I have at the present time two animals which were put into the boxes as calves, and which have never been removed; and their condition is, I am sure, much better than that of other animals which have had a larger range, and a greater variety of food. I consider that to carry out the principle of box-feeding in the most economical way which is consistent with the health of the animals, it is desirable to admit as much air and as much light as possible; and in that respect I have seen no yards so well arranged as those of Mr. Cook, of Semeur. In conclusion, I would recommend all those who have hitherto felt a strong attachment for the old farm-yards to arrange with their landlords either for those being covered in, or for the erection of boxes, as speedily as possible, feeling quite convinced that the result of their so doing would be most satisfactory.

Mr. SPEARING wished to learn from Mr. Lawrence what weight of manure his oilcake made in a feeding box within a month.

Mr. LAWRENCE replied that he had not had the manure weighed; but in fifteen weeks there were about seven cart loads.

Mr. SPEARING said, that having kept sheep in a building, upon short litter, chaff, and so forth, he had not been able to lay on the land one-tenth part per acre of the quantity which he could apply when the animals had been upon long litter. If an ox had 10 lbs. of oilcake, a bushel and a-half of swedes, and as much good hay as he could consume, he would manure six acres of land in a year. He had ascertained that a well-fed ox would put on six acres of land fifteen tons of manure per acre in a twelvemonth.

Mr. LAWRENCE observed that in a box three oxen could be fatted, and twenty-one loads of manure be obtained from each in the course of the year.

Mr. SHAW, of Northampton, would endeavour to answer the question which had just been put. He had happened to have the pleasure of attending the Duke of Bedford's sale, and they all well knew that, if anywhere, it was at Woburn that cattle feeding *par excellence* was to be witnessed. The Duke's agent, Mr. Bennett, remarked to him that there was a great difference of opinion with regard to box-feeding. Some gentlemen, he observed, considered that under that system the manure consumed a great deal more straw and the beasts a great

deal less; but a great deal certainly depended on the value of the manure in the boxes, for the Herefords, after being in the boxes four months, had not made more than four tons of manure each, while the Scots had made two tons and five lbs. That he (Mr. Shaw) thought afforded something like an answer to the question put by the previous speaker. Now, he wanted to bring the question to a definite point. His experience in agriculture had led him to the opinion that at that time they were giving something like 6d. per lb. for poor animals, and making something like 4½d. or 5d. for fat ones (Hear, hear). This was the main point for consideration. All this building of boxes, and all similar contrivances, were very well to a certain extent; but raw material must after all be produced on the farm, otherwise there would be no profit (Hear, hear). He had no hesitation in saying that he was a very strong advocate for early maturity, the bringing of beasts to perfection at the earliest possible period, and he considered the breeding of animals under covered sheds, or in the midst of a close atmosphere, very prejudicial to fecundity. He had at that time a steer, not more than sixteen months old, which would make 8 lbs. the stone. That animal was indeed to a certain extent imperfect. After all, if a certain manure were made in boxes, the breeding department must not be overlooked. Experience showed that no manure was so useful or lasted so long as good farm-yard dung. That, he had no hesitation in saying, was the real staple article of manure, despite the introduction of guano and other substances. The Norfolk soils and some others might require artificial manures; but they must not forget the production of the animal, and that foreign manures must be mixed with the breeding manures, in order to arrive at a satisfactory result. He was not a chemist; but he was anxious to bring them to this point, namely, that as they could not all be feeders, some of them must be breeders of animals.

Mr. BAKER, of Writtle, said this subject had long engaged his attention, and although he did not go so far as those who supposed that all manure should be made under cover, being of opinion that good manure might be made without that condition, he still thought the question a very important one. A question had been raised with regard to the quantity of straw which was used in making manure. Now, he held that straw itself contained very little manure, and that it ought to be considered merely as a vehicle for conveying manure to the land; and, such being the case, it appeared to him that the quantity of straw which might be consumed was a secondary consideration. If an animal were fed in a covered box or in a close yard, the straw used had the effect of condensing the manure; the manure was then found in a highly condensed state, and there being nothing but the feces and urine of the animal combined with the straw, one load of such manure was equal to two or three loads of ordinary manure. Now, it was not to be expected that the farmer of the present day could provide himself with covered farm-yards or convenient boxes; that must be the work of the landlord, and he would leave it to the tenantry of this kingdom to say whether, generally speaking, they found their land-

lords falling readily into their views on such matters, even though they were prepared to pay a fair percentage for the outlay which would have to be incurred in carrying out the required improvements. So far as his own experience was concerned, he had found the reverse to be the fact. He had been obliged to avail himself of his own resources to effect the object; and, indeed, all that he had done was to convey away the water from the buildings by means of water-spouts and drains under the yard, so as to let no more rain enter than was unavoidable, or than would enter naturally the area which the yard contained. He maintained that in some situations, if a proper quantity of straw were added when extra moisture had been admitted into the yard; and if the moisture detained were absorbed by the straw, there would, in fact, be scarcely any loss. (Expressions of dissent.) In such a case, though they had not the manure in so condensed a form, yet they had the manure deposited by the cattle, which they could spread equally over the face of the land. The nature of the buildings required depended very much on the character of the farm. On farms which comprised a large quantity of grass and turnip land in proportion to corn-growing parts, it was necessary to have covered buildings of great extent, and box-feeding would also be advantageous; but on farms where there was a large quantity of corn growing land, and where the quantity of turnips grown was limited, the difficulty was to get rid of the straw and to tread it down so as to make it fit for use. On such farms he thought it would be perfectly absurd to think of covering in the yards; for, after all, nothing could be gained in such cases, if proper care were taken not to let anything valuable escape. Another important point was the management of manure. He was in the habit of carting a very large quantity of manure from Chelmsford every week from the stables in that neighbourhood; the manure was thrown into heaps, where it entered into immediate fermentation, and within an hour the ammonia passed off to a considerable extent. If it were suffered to remain there a week or two it became perfectly dry, almost assuming the form of straw; and when carried home it was nearly useless. It was found necessary to cart this manure daily and weekly, as it was made, and to spread it over the farm-yard, where it was turned in and incorporated with the other manure. That, he thought, was the best course. He had also observed, where manure was made in boxes, that a larger quantity of straw being used than in other cases, the angles of the boxes were never sufficiently trodden, and the manure got into that dry state which he had just been describing, and consequently was not so valuable as it would be if a less quantity of straw were used. He was quite of opinion that moisture admitted to a certain extent into the farm-yard, and incorporated with the manure, was even beneficial; because it prevented any portion of the manure from getting into a state of fermentation, and therefore prevented any of the ammonia from passing off. He always preserved his manure as late in the spring as he could, and in the winter he was accustomed to introduce the foddering of green food as one of the most beneficial methods of ac-

complishing his object, enabling him to apply the manure to the land more advantageously than would otherwise be practicable. In that way manure might be economised to a very great extent. In carrying out the object he thought, and his neighbours agreed with him that it was much better to let the manure remain upon the clamps on which it was carted, than to throw it out in large heaps. Under the latter method it got into active fermentation, and a large portion of it was lost. On the other hand, by consolidating it, and not taking more than it was absolutely necessary to convey to the soil, all the valuable parts were retained. When he entered the room that evening, it was not his intention to take any part in the discussion; he had only risen in consequence of certain points having been raised as the discussion proceeded. He was of opinion that if tenants generally could obtain such yards as those of Mr. Cook of Semer, they would find them exceedingly valuable. He had been expressly to view those yards; never had he before seen anything so complete. Independently of the large extent of those yards, it would be worth any gentleman's while, who was in the habit of erecting farm buildings, to travel to see them, if it were merely to observe the great economy of timber. The combination of iron and timber was such that a great saving might be effected by any person who was desirous to erect farm buildings, if he would observe the mode in which Mr. Cook's buildings were constructed. As the farm was an arable one, it might be a question how far the principle was applicable in other cases. A neighbour of his (Mr. Baker's) had been lately covering-in his farm-yard in the same way as Mr. Cook, and he was, no doubt, very well satisfied, at present, with the result. But he (Mr. Baker) had pointed out to him two large stacks of straw, such as he had never seen before. The farm consisted of 160 acres of land, belonging to Wadham College; and until it was taken by this gentleman, it was supposed to be almost worthless. Two years ago the occupier entered upon it in a very spirited manner, and it had since produced very heavy crops of barley and wheat; but he had never seen any straw like that which he had described, before the erection of the farm buildings. When he observed upon this to the occupier, the latter said, "Well, that is very handy, for I never had a truss of straw before." This showed that these covered buildings economised straw; but he contended that they did not always make manure. He should leave other gentlemen to confirm what he had said on that point. What he maintained was, that if a quantity of well-fed animals were brought into a yard, and had a sufficient quantity of straw to make them comfortable, a certain portion of moisture running into the yard would tend to the consolidation of the manure, and the manure itself might be afterwards removed with great advantage to the farm.

Mr. NESBITT hoped that, as a scientific man, he should be allowed to intrude on the notice of the meeting for a few minutes. He could not but coincide in most of the observations of the gentleman who had opened the discussion that evening, relative to the making of manure from vegetable matter. If manure were to be obtained

from the decomposition of vegetable matter, it must either be through the bodies of animals or in some other way; and as regarded the former, he believed that the system of box-feeding adopted by Mr. Warnes was, in a scientific point of view, one of the best means of effecting the object; not, indeed, that it was the best that could be devised, for there were many imperfections in it which he would not point out that evening, because it would be useless to do so in the present state of knowledge on that subject. He must remark, however, that by means of this system, aided by gypsum or sulphuric acid to retain the ammonia, they got manure into a state of decomposition without the loss of its valuable qualities. And here he must say that he could not agree with Mr. Baker as to the effect of a fall of rain-water on the manure-heaps in farm-yards. (Hear, hear.) When such a quantity of rain fell as had fallen in the course of the previous week—or even in the course of thirteen or fourteen hours—how were farmers to prevent the soluble matters contained in their manure from being carried to the neighbouring horse-pond? (Hear, hear.) He maintained that all farm-yards ought to be covered in, which would prevent them from being subjected to such inundations. (Hear, hear.) With respect to the interesting fact mentioned by Mr. Baker, that he had seen one or two more stacks of straw recently than before the farm-yard was covered in, and the inference he drew therefrom, that less straw was used in making the manure, he must beg to draw a totally different conclusion. (Hear, hear.) He was rather led to conclude that the good working of the new system and the absence of the ordinary *washing operations*, had so benefited the manure as to produce two stacks more straw on the farm than had ever been grown on it before. (Hear, hear.) Now, he perfectly agreed with Mr. Shaw in the remarks which he had made with regard to the question whether farmers gained any advantage by the fattening of cattle or sheep; and he thought it a most important question which had been raised by that gentleman, whether, if they intended to gain anything at all by the fattening of animals, they ought not to breed them themselves. Let them consider the operation of the present system. At present they bought animals, but they did not generally breed them. It was commonly supposed that they gained something, in one shape or another, by the buying of an article of food for consumption on the farm; and most parties supposed that if they gained nothing absolutely by the sale of the animal, if they sold it only for the very same amount that it cost, adding merely the cost of feeding, still they gained in the manure what would repay them in the subsequent operations of the farm; that was one view of the matter. Now he was prepared to show, that under certain circumstances the buying of manure in the shape of oil-cake was a very injudicious and improper mode of importing manure on a farm. Before he did that, he would just state what his ideas were as to the nature of manuring. They had to grow vegetables on the land, and they could only do so by the use of vegetable matter. If oil-cake were imported on a farm it must first have been exported from some

other farm to the injury of that other farm. They had been told of some plants which required organic, and of others which required inorganic substances; but it had not been pointed out that different plants had the power of absorbing substances from the air and soil in very different proportions. The fact was that plants, like men, were very differently constructed as regarded their physical powers; some could absorb a small, and others a large amount of substance from the air; and this variation was found to run through the whole of them. Take the case of the narrow-leaved wheat and barley plants: these had not the power of taking from the air anything like the same amount of substances as the turnip and clover plants. They had a rotation of crops. Turnips, which contained a very great quantity of nutritive matter, they sometimes ploughed in or fed off, and thus they got a certain amount of preparation for the barley crop; and in the case of clover, the roots left on the soil, furnished by slow decomposition, ample materials for a larger wheat crop than nature by herself would produce. Now, the feeding of sheep on these vegetables took away a portion of the nutritive matter; and he maintained, therefore, that they obtain less by feeding off such crops than by ploughing them in. This question ought never to be misunderstood. It was a simple question of pounds, shillings, and pence, whether or not ploughing in were best. (Hear, hear.) If no gain, but rather a loss was found by feeding sheep upon vegetable matter, he thought the farmer ought to know that vegetables always contained more manure than the dung made from the same vegetables, weight for weight.

Mr. F. HOBBS intimated his dissent.

Mr. NESBIT: If Mr. Hobbs would write a letter to the *Mark Lane Express* on the subject, he would be happy to reply to it; and though he could not enter into the arguments that evening, he would bring a dozen practical farmers (some of them were in the room perhaps that evening), who having made the experiment could bear satisfactory testimony as to the result.

Mr. MENCH: You are confirmed by a professor.

Mr. NESBIT said, that on such a point he received the evidence of a practical farmer in preference to that of a professor. What he maintained was, that the sheep and the oxen could give nothing to the land but what they had received themselves. Whence were they to get it? (Hear, hear.) They could only get it from the vegetables on which they fed. Now that being the case, if he applied himself to the analysis of oil-cake, which was so much used by agriculturists for the feeding both of sheep and bullocks, and compared it with the manures which they could obtain at certain prices, he should be able to put them in possession of the actual relative value of oil-cake, as furnishing manure for the farm. Now he had looked through a great number of books without being able to find any analysis of oil-cake; accordingly he had set some of his pupils to work to analyze it. He had had samples analyzed from Liverpool, London, and Marseilles. A sample of rape cake was also analyzed, and the accompanying table would show their fertilizing value, compared with Peruvian guano. From

comparison of several analyses he had taken the following as the average of good Peruvian guano :—

	Per cent.
Moisture	12.0
Inorganic matter	35.0
containing—	
Phos. acid	10.0
Potash	3.0
Ammonia	14.0
Organic matter	39.0
	100.0

	Oil cake from Liverpool.	Oil cake from London.	Oil cake from Marseilles.	Rape cake.	Average of Peruvian Guano.
Moisture	lbs. 268.8	300.7	274.4	lbs. 195.8	lbs. 268.8
Organic matter	1739.6	1699.3	1718.3	1654.2	938.6
Nitrogen	109.1	118.5	118.2	115.4	258.6
Ammonia	130.6	143.8	148.4	140.0	313.6
Inorganic matter	122.5	121.5	129.1	274.6	774.0
containing—					
Phosphoric acid	47.1	30.9	39.4	43.7	224.0
Potash	29.1	19.1	23.7	27.1	67.2
	22100	22400	22400	22400	22400

* The analyses were made by Messrs. Bailey, Huley, and L. and E. Cottinghams. The potash was no determined, but taken to be in a certain proportion to the phosphoric acid.

By inspecting the above table, it would be seen that by importing one ton of guano on to a farm, we imported nearly 2½ times as much ammonia, 6 times as much phosphoric acid, and 2½ times as much potash, as by one ton of the oil cake, taking the average of the analyses. The ammonia, phosphoric acid, and potash are the most valuable ingredients in all manures. Such was then the result of the analysis of oil-cake, and he maintained that if what was imported on to the land in the shape of oil-cake in the course of the year were not productive of profit in the shape of beef and mutton, that it was wrong commercially to import that oil cake on to the farm. He was not going to found any lengthened argument on this; it was sufficient to state the fact, and leave the in-

telligent farmer to think it over for himself. To pass oil-cake through the bodies of animals without some attendant benefit was a most expensive and wasteful method of preparing manure for application on the farm. As Mr. Shaw had observed, unless they could see profit in what they did as regarded beef and mutton, it was an improper expenditure of money. He had thought it right to bring these facts before the club. Not a word had been said that evening as to the transporting of substances from other places, for the purposes of manure; not a word had they heard of the advantages of the so-called artificial manures on the practice of farming. Not to speak of guano, there were many places in this country where the bones and other remains of extinct animals only required to be dug up to be converted into a first-rate manure for turnips; and when it was remembered that they could produce the best wheat and barley crops by the ploughing in or feeding off of green crops, and that the best green crops could be secured by means of artificial manures, he left it to those who asserted that nothing was gained by the fattening of sheep and bullocks, and who took a pounds, shillings, and pence view of the matter, to say whether it would not be more profitable in the end to look to some other source for manure. The best sources of supply were found in Norfolk, in Suffolk, in Kent, in Hampshire. In the previous year his pupils had, with his assistance, made three hundred analyses of chemical substances, to be found all over the country. Phosphates were to be found in every part from the Land's End to John O'Groat's; sources of success to the farmer which only required to be dug up and mixed with one-half of their weight of sulphuric acid to become good superphosphate of lime. Such manure would produce good turnip crops; the turnip leaves by acting on the air would bring down the organic matters, and thus there would be no difficulty in securing good wheat and barley crops. In connection with this subject he could not help noticing one matter of great importance. Although in 1840 Liebig stated how sulphuric acid was to be mixed with the substances to which he (Mr. Nesbit) had referred, a party was now attempting in reality to get the whole of these phosphates into his own hands. He thought it right to mention this on these occasions, as he had done indeed in every lecture which he had recently delivered; and as he should continue to do, so long as the attempt was persisted in. In 1840, he repeated, Liebig recommended the method of mixing sulphuric acid with phosphate of lime, for the purpose of making the manure more soluble. In 1842, two years afterwards, Mr. Lawes obtained a patent for the same process that Liebig had gratuitously recommended to the agriculturist. Some time after, Prof. Henslow pointed out the existence of large quantities of fossil phosphates in Suffolk, and these were used by Mr. Lawes and others for the making of superphosphate of lime. In January, 1847, he (Mr. Nesbit) communicated to the public the fact of the existence of phosphates in the marls of Farnham, in Surrey; and in Feb., 1847, Mr. Lawes, seeing the probability of the phosphates being spread pretty generally throughout the kingdom, alters the specification of his patent, gives up all claim to the exclusive use of bones and sulphuric

acid, but claims the sole use of all the phosphates, which either he (Mr. N.), Dr. Buckland, Professor Henslow, or others had discovered, or hereafter might be able to discover. What Mr. Lawes contended was this, that neither they nor any other persons who had got these phosphates on their farms could use them without obtaining his license, and paying a royalty. In prosecuting his object he had commenced an action against Mr. Purser, and by that means had already put him to great expense. It was monstrous that any party should by any chicanery of law be able to compel those who had these coprolites on their land to pay him a royalty before using them, or prevent their sale to any who might wish to use them.

Mr. MECCHI observed that the patent could never stand.

Mr. NESBIT thought that however that might be, the farmers as a body ought to rally round a party who had been subjected to such expense and annoyance in defending their rights. The matter was a public one; he took it up on public grounds; he was not interested in it himself to the extent of one farthing, but believing that these phosphates existed all over the kingdom, and could be applied at an expense of from 8s. to 10s. per acre, he thought that any attempt like that which he had described ought to be strenuously resisted.

Mr. COCK said, that about two years ago he had accompanied several other farmers to Sir C. Burrell's, for the purpose of witnessing box-feeding on the estate, and learning particulars with regard to it. They inquired of the man who showed them the system in operation what the animals were fed upon, and they made a calculation as to the cost. They then inquired whether there were any beasts in the yard, and the answer being in the affirmative, they walked round and looked at them. They were also told what it cost to feed them per head, the two sets of beasts being about the same size. On further inquiry it appeared, that while the beasts kept in the yard made about ten cart-loads of manure each in about six months, the quantity of straw trodden down in the yard was about four-times as great as the quantity which was stamped down in boxes. Now the question which occurred to him when he heard so much on this subject, and was told that the best mode of making manure was to plough in the green crops—the question which arose in his mind was, what would a great many farmers do with their straw, provided all these suggestions were carried out? Was the straw to stand in one place until it had rotted? Mr. Cock further stated that he had made an experiment as to the relative merits of rotten and unfermented dung, and that his experience was all in favour of the latter. He agreed that the main question was one of pounds, shillings, and pence.

Mr. MECCHI said he could readily believe what was stated, but he should like to know what kind of after-crop there was.

Mr. COCK said, several of his neighbours went over the land, and all of them perceived immediately which was the best crop; the same superiority was observable in the succeeding year. He might mention that he put

on a ton of rape per acre on two acres besides, and with very little benefit. In the following year, where the dung was carried out and laid in the open air, there was by far the best crop: on the whole, he obtained about one quarter more wheat per acre than he had done before.

The CHAIRMAN: You mean that you grew the most where you had put on the rotten manure.

Mr. COCK replied that such was the fact. It was necessary to look to the soil as well as the manure; the same manure would not do for all soils, any more than the same kind of draining. Mr. Mechi had told them that he had some calves which were fed under the box system. He (Mr. Cock) believed it was generally acknowledged that such animals did best where they had an opportunity of running into the open field.

Mr. MECCHI begged permission to make one remark. Mr. Cook, of Semer, had tried the experiment of taking calves immediately from their mothers, and tying them up, and also that of taking them from the land in the regular way; and he had found a great superiority in those tied up, as compared with those fed on the best pastures. One more remark, and he would conclude. He himself had tried linseed crushed, and not soaked or boiled, and linseed rendered mucilaginous by soaking or boiling; and the condition of the animal and its general progress had been much better where the same quantity was applied under the last mentioned form than under the first.

Mr. COCK would only add that he had received two prizes at Maidstone—one of £5 and another of £7—for cattle fed by him on malt (cheers).

Mr. BAKER wished to make one or two remarks. Mr. Nesbit had contended and declared that he was ready to prove that the ploughing-in of a green crop was more beneficial than the feeding-off of animals; and this he asserted on the ground that the animal could yield nothing but what it had received. Now, in that respect, he entirely differed from Mr. Nesbit. He would take the case of Swede turnips, tares, or any other vegetable crop, as affording a contradiction to that statement. He maintained that all vegetable crops had their constituent qualities altered in the process of feeding. He would not pretend to say how the alteration was effected, but that it was effected in some way every one knew to be the fact. In the county in which he resided it was common to sow rape, not for the value of the food, but on account of the manure. A very large quantity of this rape was ploughed in, and he had always thought that in that case ploughing was more beneficial than feeding; but as regarded tares and vetches, his experience went to show that feeding was twice as beneficial as ploughing-in. In the winter of 1839 he had tried an experiment which bore out his statement. The white turnip contained, he believed, 95 per cent. of water. How was such a crop to be ploughed in? He never saw so good a crop of corn where turnips had been ploughed in as where they had been fed off by sheep. On that subject he differed entirely from Mr. Nesbit, and he thought the majority of those present did so too.

Mr. HUTLEY maintained that they could not have

good manure if it was washed. It destroyed the quality; and he contended that this was in accordance with common sense. Decomposition also spoiled the quality of the manure; and therefore he did not agree with the doctrine that it was advantageous to turn the manure frequently. He had obtained a great deal of information from the discussion of that evening.

Mr. CUTHBERT JOHNSON said that no one in the room would be disposed to deny the assertion that it was advantageous to secure all the drainings and all the excreta of a farm-yard. He was glad to find that a practical farmer had put this question, for he was always happy to listen to practical farmers. The gentleman to whom he alluded had put this question: Supposing there is no drainage from the farm-yard, and supposing that nothing leaks away, and supposing the rain water which falls on the barns and other farm buildings is properly carried off, then what harm can the rain do? Nothing being carried off from the farm-yard, everything remains; and therefore if nothing is lost, if the farm-yard had no drainage, if the eaves troughs were properly secured, he could not discover how any loss could accrue. Then, again, as to the evidence of the superior value of the box-fed manure. That system came before them with almost only one claim to their attention. If it did not increase the value of the manure, it did nothing. He was at a loss to consider, with respect to the animal which was taken from its natural habitat where it had been brought up, but that it must suffer from placing the beast over a pestiferous dung-hill.

Mr. LAWRENCE: It is not the fact.

Mr. JOHNSON: The box-feeding was to confine the beast over its own dung until the manure was about a yard deep. He was told that none of the gases of putrefaction were exhaled. There must be in the case of box-feeding an evolution of ammonia.

Mr. LAWRENCE: No.

Mr. JOHNSON: If he was told that in the accumulation of manure there was no putrefaction and no evolution of noxious gases—that all was as pure, and all as sweet as any meadow, then he said, he had no objection to the box-feeding system. He had been led, however, to come to a different conclusion. He had looked at scientific facts as illustrating particular operations with all the care in his power, and he regarded science as of no value but as illustrating practical results. His friend on his right (Mr. Nesbit) had addressed himself to the question of coprolites. He held in his hand an analysis of coprolites. Now he liked things to be called by their right names, and did not like hard words when they could be avoided. Then, if they were to call coprolites fossils or old bones, he thought they would understand much better what they were talking about. Coprolites were the remains of the bones of animals which had lived in a former state of the world, and which existed to a large extent throughout large portions of this country. Comparing those coprolites with recent bones, it was found that there was a strong similarity in their composition; and he mentioned this in order to show them that there was no doubt that the origin of

the coprolites was in fact bones. Now, he found that in 100 parts of these bones, from an analysis made by Mr. Purser, there was contained between 60 and 70 per cent. of phosphate of lime and iron, and that this was very nearly the composition of calcined bones. The bones having lain in the earth for a long series of ages had long ago become fossilized. Some years ago these old bones were first discovered in a variety of shapes in Cambridgeshire, then in Hampshire, Buckinghamshire, and afterwards in various portions of the kingdom. These bones being dissolved in sulphuric acid formed superphosphate of lime. He had hardly comprehended what his friend near him had alluded to about Mr. Lawes, because he was not furnished with information on the subject. He did not suppose that Mr. Lawes was trying to stop them using their fossil bones. Why that was a sort of romantic attempt that would be ridiculous enough. If they used new bones they might use old bones; there was no act of Parliament declaring any distinction. He was at a loss to conceive what the story was about, and perhaps Mr. Purser would tell them his own tale, because if the progress of agriculture and the operations of the farmers of England were interfered with by any man who professed that he would stop the using of phosphate of lime found on their own farms, without his leave, then he thought it was high time to stop such rhodomontade. He thought they would all agree with him that the thanks of the meeting were fully due to Mr. Lawrence for the scientific, clear, and able manner in which he had brought the whole subject before them. (Cheers).

Mr. BENNET thought the box-feeding system had been ridden rather hard. He knew a friend of his who was feeding sixty beasts upon that system, and certainly did not think it was all gilt. He rather went with Mr. Johnson in his observations relative to the health of the animals, and he did not think it was correct to say, that in the box-feeding system nothing escaped that was prejudicial to health. He had seen it in all its stages, and he was perfectly satisfied that there was escape unless they kept a very considerable quantity of litter. He must say, with respect to the farm-yard manure, that he had occasionally no objection to a little water. In March, for instance, if there was a quantity of stock in the yard, and there should be a continuance of dry weather for many weeks, it would be difficult to make manure; therefore he thought a little rain occasionally would do no harm, if there was no escape. As regarded the warmth of the animals, he was of opinion, especially for young things, that warmth was almost equal to half the feed (Hear, hear). In the winter season, especially if they kept the animals extremely cold, all the feed they could give them would not fatten them. He had been very happy to hear the remarks by the gentleman who spoke about feeding with malt. He could fully corroborate that gentleman. He believed that the system had never been fairly tested, and he hoped it would become general.

Mr. HOBBS was very glad that Mr. Bennett had touched upon the main advantages of box-feeding over yard-feeding. He said that the great advantage was that

they could regulate the heat for the animal, and that in his (Mr. Hobbs') opinion was a most important feature as regarded the advantage of the box over that of the open yard. On previous occasions, when the question had been discussed in that room, he had taken every opportunity of bringing the subject of covering-in the yards forward, as adopted by the Rev. Mr. Cook, of Semer, and he was glad to find that those gentlemen who had witnessed the yards so covered had fully agreed with his opinion. He believed that that was a superior system to what was commonly called box-feeding, as, in addition to all the advantages of boxes, it had the further recommendation of affording exercise to the animals, which was especially required in the case of young stock. He believed it was admitted by practical men that five animals under cover, with heat about 60 or 65 deg., would be maintained with the same food that would be required for four animals with the heat at 40 deg. or down to freezing point. That was an important matter to consider, as it enabled them to produce manure of a superior quality, and would allow them to grow a greater weight of turnips, and keep a larger number of animals. He begged to differ from the argument advanced by Mr. Mechi, that it is not advantageous to grow roots to cart off the land. Mr. Nesbit said it was better to plough the roots in, rather than to feed them off; he also advocated the use of artificial manures alone for vegetable crops. This might sound very well in theory, but would not always bear the test of practice. As to straw on his farms, he never knew that he had too much. It had been said that in the boxes there was escape of ammonia, and decomposition when animals were in a confined place. He had never yet seen it; nor did he believe it was the case if there were proper management and proper litter applied to the animals when they required it. He had been told by a gentleman last Christmas that he had in boxes 65 beasts, and there had been no escape, because the animals were well littered. He had himself the last two years used fishery salt; and although it was not considered a disinfectant, still, as far as his experience went, he had found it very efficacious. In his part of the kingdom there was a good deal of bog earth, and he frequently used the charred peat. It was the greatest disinfectant they had. With respect to the malt tax, he was very glad to find that his friends in Kent had tried feeding cattle with malt. He had never yet met any one who had tried it that did not approve of it. It had been said that the malt feeding was an unsettled question amongst the farmers, and that it might last two or three years before it was settled; but he would remind them that it was well understood now, and had been ever since Mr. Handley brought forward the question of repeal in the House of Commons, in the year 1835. He would only ask gentlemen accustomed to hunting whether a malt mash was not the very thing to revive a beaten horse, when oatmeal or linseed had been of little effect? Malt was the best thing animals could have, and therefore he did hope that the question would very shortly be set entirely at rest as far as its advantages for feeding purposes were concerned. He felt it his duty to express his thanks to Mr. Lawrence

for the satisfactory, clear, and able manner in which he had brought forward this subject. With respect to Mr. Lawes, he could scarcely believe what he had heard as to the movements of that gentleman against Mr. Purser and the farmers of England. He could not believe such a thing of a gentleman who had been receiving for the last two years something like a benefit of £8,000 or £10,000 a year from the farmers of England for the sale of superphosphate of lime. He trusted, if Mr. Lawes persisted, that the farmers would do their duty, and support Mr. Purser in defending himself. He had told Mr. Purser, when he first heard of it, to go on; for it was a question in which they were all greatly interested.

Mr. PURSER said that Mr. Lawes had commenced his action, and laid the venue at Bristol; and ever since August he (Mr. Purser) had been endeavouring to meet him, and to fight him inch by inch; and he was glad he was in circumstances to do so. Mr. Lawes had told him that he had laid the action at Bristol in order to increase the expense. He (Mr. Purser) was of opinion that these coprolites would eventually be of great service to the country; but if Mr. Lawes was to have the exclusive right of laying a heavy royalty on every ton, the advantage would be neutralized.

Mr. CHEETHAM said he had adopted the plan of Mr. Cocks ever since the year 1822, and he had always found it successful; and he had never had a turnip crop affected by the fly or deficient in weight.

Mr. OWEN said he had not heard a single remark about the manure of pigs. Pigs were not required to be kept as clean as bullocks or sheep. He thought the manure of pigs would be found more advantageous than that of any other animal. They fed pigs on grain. How much better, then, would the manure be if the food was malt (Hear, hear)?

Mr. SPEARING advocated the system of mixing ashes with manure.

Mr. WILLIAM SHAW said that as this was purely a practical question, and having so long been without practice in the matter, it was not his intention to offer a single observation upon that part of the question. He could not, however, refrain from expressing his detestation at any man being run down in the way Mr. Purser had told them he was being run down. He (Mr. Shaw) did not profess to have any very extraordinary philanthropy; but he would recall to their recollection that he protested, twelve months ago, in that very room against a step that was then about to be taken. He was only sorry that the course then advocated was not adopted; for he was fearful that by not doing so a stepping-stone had been afforded to Mr. Lawes to pursue his present course. Would they suffer such a course to be pursued against any individual as that which was being taken against Mr. Purser? He trusted that some step would be taken to make manifest what the feeling of that club was with respect to that matter. With respect to the question before the meeting, he would merely observe that some years ago he had ten or fifteen men constantly employed, and he was in the habit of allowing them a quarter of an acre of potato land, and allowing them to take the manure out of the farm-yard. He could never forget the fineness and exertion that those men always made to get at the place first, to obtain the dung that had been turned twice or three times, and the spit dug. Now, there were no better judges than they were.

Mr. LAWRENCE, in reply, said he had not had sufficient experience to give an opinion as to the advantages of rotten or

recent dung. Chemical gentlemen would probably tell them that if they placed recent dung at the roots it would undergo fermentation in the soil, and very considerable advantages would be produced from the gases disengaged during the period of fermentation. The question of growing and feeding animals had been discussed. Now, he was disposed to make a great distinction between the two. He thought that young and growing animals required more exercise and air than older animals. With respect to the odour from box-feeding, he begged to say that in his boxes there was no more smell than in that room. He had heard of fermentation taking place in the boxes of horses, but he believed it arose from the boxes not being deep enough.

Mr. NESBIT then proposed a vote of thanks to Mr. Lawrence, for his able exposition of the question under discussion.

The motion was carried by acclamation.

Mr. SHAW said it was usual to terminate their discussions with some resolution, and therefore he proposed the following:—"That various systems of making manure have been advanced and ably supported, but that sufficient information has not been submitted to enable the club to recommend any particular system." He thought they had not sufficient information to come to a resolution recommending the box-feeding; but it was open to any one present to amend the resolution if he thought fit.

Mr. CUTHBERT JOHNSON seconded the motion, which was put and carried unanimously.

A vote of thanks to the chairman closed the proceedings.

THE HERO.

WINNER OF THE EMPEROR'S PLATE AT ASCOT IN 1847 AND 1848.

The Hero, bred by H. G. Allen, Esq., of Cresselly, Pembrokeshire, in 1843, was got by Chesierfield, out of Grace Darling, by Defence, her dam by Don Cossack, out of Mistake, by Waxy.

Chesterfield, an own brother to Crucifix, bred by Lord Chesterfield in 1834, was by Priam, out of Octaviana, by Octavian, her dam by Shuttle, out of Zara, by Delpini. As a race-horse, he received in a produce stake at Newmarket; and then, being drafted out of his noble namesake's string, was taken down into Wales, where he got beaten at Aberystwith by one of Mr. Pryse Pryse's flyers. This closed his career on the Turf, while as a stud-horse he only lived to father The Hero, who, with a steeple-chase horse of Mr. Bisse's, called Peinbroke, are, we believe, the only two by him that ever appeared.

Grace Darling, bred by Mr. Isaac Sadler in 1832, figured for some seasons on the midland county circuit as Mr. Sadler's, Mr. Reeve's, or Mr. Mathews' Sister to Desperate. Her performances, however, never exceeded those of a third-rate plater; and her produce, with this one grand exception, have so far been quite on a sample with her own very inferior merits as a race-horse. So unpromising, indeed, did she appear to Mr. Allen,

into whose hands she passed after leaving the turf, that he sent her, with the Chesterfield colt at her foot, to Bath races in the summer of 1843, to be sold for what she would fetch. Fifteen sovereigns was the maximum offered for the two; and at this price they became the property of Mr. John Powney, of Lansdown, Bath, who has the mare still in his possession, as well as a half of 'The Hero; John Day agreeing for the other half, on the horse being sent into training.

The Hero is a chesnut horse, with no white about him beyond a star in the forehead and a few well-worn saddle-marks. He stands about fifteen hands three inches high; has a rather long, lean head, well set on to his neck, which is good and strong; has good shoulders, with fair depth of girth, but runs slight in his back-ribs, and very mean in his quarters; he has straight thighs, though rather long from hip to hock; and tail set on low. He stands upright on his joints; has a bad, shuffling walk; and is, in fact, as mean-looking, hackish as animal as any sanguine owner ever sent into training.

SUMMARY OF THE HERO'S PERFORMANCES.

In 1845 he started three times, and one once:

A plate at Newmarket, value clear	£ 50
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In 1846 he started twelve times, and won eleven:

The Handicap, at Salisbury	300
The Cup, at Salisbury	100
The Dundas Stakes, at York	145
Her Majesty's Plate, at York	105
The County Cup, at York	225
Her Majesty's Plate, at Egham	105
Her Majesty's Plate, at Warwick	105
Her Majesty's Plate, at Lichfield	105
Her Majesty's Plate, at Leicester	105
Her Majesty's Plate, at Doncaster	105
The Cup, at Doncaster	300

In 1847 he started eleven times, and won ten:

Her Majesty's Vase, at Ascot	360
The Emperor of Russia's Plate, at Ascot	880
Her Majesty's Plate, at Winchester	105
The Cup, at Goodwood	690
Her Majesty's Plate, at Egham	105
Her Majesty's Plate, at Warwick	105
The Cup, at Warwick	240
Her Majesty's Plate, at Doncaster	105
Her Majesty's Plate, at Lichfield	105
Her Majesty's Plate, at Leicester	105

In 1848 he started five times, and won four:

The Emperor of Russia's Plate, at Ascot	780
Her Majesty's Plate, at Salisbury	105
The Craven Stakes, at Goodwood	25
Her Majesty's Plate, at Weymouth	105

HINCKLEY AGRICULTURAL SOCIETY.

On Monday, 5th March, 1849, the usual monthly meeting of the Hinckley Agricultural Society was held in the large room of the George Hotel, and was filled by most of the leading farmers and maltsters in the neighbourhood. Such was the interest felt on the occasion, that many came from the neighbourhood of Nuneaton, Atherston, and Market Bosworth, who had not attended the day's market. Altogether not less than 150 were present.

On the motion of Mr. Breton, Mr. Thomas Swinnerton, of Caldecote, was unanimously called to the chair, and briefly stated the objects of the meeting, which was, "The Benefits the Farmer would derive from the Repeal of the Malt-tax."

Mr. MATTHEW OLDACRES, of Copson Lodge, then came forward, and said he was sorry the meeting was deprived of the attendance of Mr. William Warner, who had promised to introduce the subject, and that the cause which kept him away was of a melancholy character, for no one was better calculated or better informed on the subject than that gentleman: but, continued Mr. Oldacres, I have always held a strong opinion of the injustice and partial bearing of the malt-tax. Taxes are necessary for the government of any country; but it is also necessary that all classes should bear equally their share of such taxation. A great change has taken place in the policy of this country, affecting considerably the agricultural interest; in short, the British farmer is thrown into competition with the whole world, and with countries that have not a tithe of the taxation to pay—whose labour is secured at nearly one-third less (excepting only the United States of America) than yours is obtained, and who have a climate far more congenial and propitious to the ripening and securing their produce. It is a competition, gentlemen, that to all human foresight, and according to the best authorities, will reduce the average value of agricultural productions to the extent of 15 per cent. It is fair to suppose that there are classes in this country that will be benefited to the amount of depreciation the agricultural interest must sustain. Then are they not in a position to pay a greater amount of taxation? It is very much like taking fifteen to twenty acres from a hundred acre farm, and charging the same rent for it. Under such circumstances, it was only natural to expect that Government would have accompanied such alterations with a remission of those taxes which press heavily and injuriously upon the

farmer. But, gentlemen, in vain may the farmers of England look for a remission of taxation, until they combine and cause that which is termed a "pressure from without"—the *only* successful method of late years with an English Government! Gentlemen, I look upon all taxes to have their indirect as well as their direct bearings, and I believe the injurious effects of the indirect application of the malt-tax is almost exclusively borne by the agriculturist, and that its direct application to them is in an unfair proportion. And, gentlemen, are not your labourers considerably interested in this question? has not the abominable malt-tax altered his habits of life, and reduced his power and ability to labour? And can you not justly charge the malt-tax with having called into existence one-half of the dram-shops that you meet at every turn and corner of the towns and cities of this country? And are there not thousands of manufacturing operatives, who, after a life of labour and toil, die without having tasted in its pure and unadulterated state the natural beverage of their country. The more I consider the working and operation of the malt-tax, the more bitter is my animosity against it. Look at the great body of agricultural labourers, who are toiling from day to day, from week to week, without tasting one drop of ale to refresh them in their labour, except the adulterated stuff they obtain at the beer-shop. Is it not a notorious fact that farmers find the system of giving their labourers beer so expensive, that it is yearly decreasing, and will decrease from year to year, without an alteration of the malt-tax? I am satisfied no sensible man will ever say beer is not requisite to enable a labourer to do a fair day's work. I desire to see it with the labourer of the present day as it was of old—brewing their own beer, filling their own bottles, and quaffing the cup of home-brewed by their own fireside, surrounded by their wives and children, enjoying the comforts of domestic happiness—rising in the morning with strength proportioned to their work, with cheerful countenances and contented minds, resuming the willing labours of the day. But, can you expect such conduct, such fruits, to emanate from labourers who spend their evenings at the beer-shop—in the company of poachers, drunkards, and the worst characters of the neighbourhood, where honesty is scoffed at, good principles assailed, and the worst passions of mankind encouraged and applauded? And are not the leisure hours of your young men spent in such society and in such company? I

would desire to see these young men contributing their share to the replenishing of a parent's barrel at home, rather than in spending their spare cash in the adulterated stuff they in many instances obtain at the beer-shop—a drink that is brewed rather to create than to quench thirst. Cannot you look around your parishes, and observe many who are the recipients of your parish-rates, who, in their younger days, laid the foundation of their poverty, or sickness it may be, in the course of life they were seduced into at those beer-shops? Secondly, the labourer suffers indirectly from the malt-tax. Let me have a steam-engine in my stack-yard, and no tax is laid upon its labour; but let me place two men in my barn to thrash, and they will be taxed three-halfpence per quart for the beer they drink: with just as much reason ought the steam-engine to be taxed three-halfpence per quart for the water she takes. I charge the malt-tax with demoralizing the labouring classes of this country—with causing their natural and favourite beverage to be so extensively adulterated—with disabling them from performing a hard day's work, and with depriving them of a legitimate source of employment in their own country. A duty of four shillings per qr. was first laid upon malt, in 1697; the duty in 1780 was ten shillings and tenpence, and the consumption was greater than it was in 1845, although the population had nearly trebled (taking England and Wales). In 1730 a million and a-half bushels were made more than in 1830; so that, although the population has trebled, the consumption of malt remains about stationary. It is fair, then, to assume, that the high duty on malt has induced the people of this country to throw aside their favourite beverage, their own production, and to substitute the production of foreign countries. The legislators of this country can take into consideration the duties on coffee, tea, spirits, and wines—but foreign productions have become so very fashionable of late. It appears almost as though England is about to discard her natural sons—the yeomen of England—and adopt in their stead the sons of foreign nations. I, for one, have no fear of foreign competition, if placed on the same equal footing with my competitors, and I think you will all respond to that sentiment; but I am not going to admit that it will be sufficient if you take off the malt-tax. Look at your poor's-rates, excise duties, assessed taxes, and at your *fixed* income-tax, and forget not your contract, and leases for rent, and tell me if you are not, as it were, matched to run a race, with a mill-stone round your necks, against one who is at perfect liberty? The barley-growers abroad have no fear of the exciseman before their eyes. They can malt their barley, use it for feeding purposes; and you will see your cattle

superseded in your own markets, because you cannot use the same means of fattening them as the foreigner. I believe that no corn, cake, or pulse to be equal to malt for sheep when at turnips. You know the beneficial effects of malt-dust in strengthening and improving lambs when suffering from fever, diarrhoea, and other diseases incident to them; but none of you know the extent of loss you are yearly subjected to by not being able to use malt with your stock. It is one of the best stomachics we possess; and have we not all, more or less, suffered considerably from epidemic disease amongst our flocks and herds imported by the fashionable foreigner to our shores? And yet we are debarred, by the iniquitous duty on malt, from resorting to the best restorative we ought in justice to have at our command. I believe no man can calculate the saving of stock from epidemic in this country, had the farmer possessed the free use of malt amongst his stock in 1847. I know that professors and doctors have been employed to analyze and report their opinions on the feeding properties of malt, and that their opinions are adverse to the use of it: but I also know that many practical men have tried it, and report most favourably of it. I will give you Mr. Hudson's opinion of it, and he is one of the largest and best farmers in the county of Norfolk. He takes one peck of malt to be equal to fourteen pounds of oilcake, and five quarters of malt superior to seven quarters of barley; and he challenges Dr. Playfair, for £100, to fatten 50 or 100 beasts upon malt, against the same number fed upon barley-meal, in the proportion of five quarters of malt to seven quarters of barley-meal. Are you not exhorted on all hands to use scientific means for the improvement of your occupations? Then why does the legislature of the country cripple your energies, curtail the consumption of your produce, compel you to use oil-cake, linseed, Egyptian beans, and other such-like articles, to the exclusion of the produce of your farms, because you cannot use it in its most approved state? I charge the malt-tax with curtailing the consumption of our produce—with depreciating the value of barley the growth of strong land, and such as may be of an inferior or coarser quality—with preventing an improved system of agriculture (on such lands)—with impairing the strength of our labourers, and disabling them from performing a fair day's work—with preventing the use amongst our diseased stock of one of the best restoratives we possess—with preventing the feeding of our cattle with our own produce—with pressing unequally and unfairly on the farmer in its direct application. I can only say that, if the farmers of England tamely submit to the continuing infliction of the malt-tax, they deserve richly the epithet pro-

nounced by a noble lord, "That their heads are as thick as the clods they till;" and I entertain a strong opinion that in consuming our own produce we take back to our soils in our manure a greater proportion of those properties than our crops extracted from them. It is an opinion entertained by some parties, that the repeal of the malt-tax would be a much greater boon to the light-land than to the strong-land farmers, and this opinion I take to be erroneous. Under the present system the light-land barleys are only selected for malting purposes: the excise regulations require a limited and exact process in malting; no ingenuity can be exercised or improvement made by the maltster. There is but little doubt but that the strong-land barleys would make better malt, had they more time allowed in the process. But, in fact, the exciseman is the maltster. I do not believe the repeal of the malt-tax would increase the proportionate value of barley. I believe that strong lands would grow a considerable quantity of barley, and it would lead to an improved system of cropping on such lands. I am not going to assert that the strong-land barleys will ever make better malt than the light land; but I do assert, that it would enhance the price of barleys off strong lands more than the barleys off light lands. Every acre of barley that is now sown for malting purposes, assuming you to have 5 quarters to the acre, is subjected to the enormous tax of £5 10s. per acre. Suppose that at harvest time a Government officer came and assessed you to pay £5 10s. an acre in six months' time for every acre of barley you had growing upon your farms, you would think this a great injustice. But that barley, if made into malt, pays this tax. Last year the produce of my farm would pay £200 in malt-tax. Gentlemen I have yet to learn that the farmers are not large consumers of beer (excepting the cider districts,) and that it bears more heavily upon them than upon any other class in its direct application. My calculation is that every acre of arable land properly cultivated requires a consumption of beer that entails upon the occupier a direct tax of 2s. 6d. an acre. I know that this varies according to the mode of cultivation adopted and the amount of labour employed, so that the better you farm, the greater amount of labour you employ, the greater amount of the malt-tax you pay: great encouragement this to good farming! especially when you meet the fashionable foreigner's corn in your markets, that was gathered into the barns with beer at three-halfpence a quart when yours costs 3d. to 4d. I ask where do you find so much beer drunk as in a farm-house, excepting the signs you see "to be drunk on the premises." The manufacturers have not to provide their operatives with beer; if they had, I know full well

the malt-tax would soon be repealed. One word as to the partial bearing of the malt-tax, even on the occupiers of land; and this will account, in some measure, for the want of unanimity amongst farmers on this subject. Take an arable farm at £1 an acre rent, and you will have to pay at least 1s. 6d. an acre in direct malt-tax; but take grazing land at £2 an acre, and you will not have to pay more than 3d. an acre, hence the poor arable lands are paying twelve times more than the best grazing land according to value. I protest against the amount of revenue being made an argument against its repeal. If it is unjust—and I defy any man to prove the contrary—the greater the amount of revenue, the greater the injustice. It is the offspring of war, the pet child of oppression.

Mr. Oldacres sat down amidst the hearty applause of the company.

Mr. SAMUEL PILGRIM, of Burbage, then came forward, and said:—Mr. Chairman and gentlemen, I consider the malt-tax unjust and indefensible, and I will call your attention to some calculations made by Mr. Hudson as to the relative value of oilcake and malt for feeding purposes, which have appeared in the *Farmer's Magazine*. In a work upon Vegetable Chemistry, published by Dr. Thompson in 1839, we have the estimation of the real loss in the weight of barley by malting to be 8 per cent.; and there is also an analysis of barley, and the malt made from it, in which a loss of 2 parts of gluten and 19 parts of starch is replaced by a gain of 12 parts of sugar and 9 parts of gum; by this change of qualities in the malting, there is an exchange of 21 parts of gluten and starch for 21 parts of sugar and gum, and the feeding properties increased, as chemists state that gum and sugar are far more nutritious than gluten and starch. But presuming malt to be both a stimulant and a tonic, it must require some skill and care in the using of it, for the feeding of cattle, till better understood: it would then, I have no doubt, answer our most sanguine expectations, at the same time taking the place of other artificial food, which many of us are obliged to have recourse to in the higher feeding and rearing of our stock. The inferior qualities of barley which we could then use for the purpose is now almost unsaleable in consequence of the malt-tax; so that large portions of the stiffer soils, capable of growing abundant crops of a coarse quality, cease to grow barley at all; and the price of oilcake and other foreign artificial food is thereby enhanced, and consequently a check given to the progress of agriculture. Thus the malt-tax diminishes the consumption of malt, disarranges the best modes of cultivation, increases the price of artificial food for stock and cattle, whereby the fertility of the soil is deteriorated, the

demand for labour lessened, and the comforts of the people greatly impaired: for it would be invariably found that the better class of labourers were those who enjoyed their beer by their own fire-sides, and the most depraved and dissolute those only who were destitute of all social and domestic comforts: and it does appear to me unjust to deprive the toiling labourer of those means of support the best calculated to ameliorate his toil. We cannot but come to the conclusion that this tax is wholly indefensible, and ought to be abolished; and, considering we have now a property and income tax; a total repeal of the corn laws; liberty to use sugar, *duty free*, in our breweries; and a desertion of the would-be-called farmer's friends, who have left us to seek justice wherever we can find it; it is for us all here, mutually, hand-in-hand, with other similar societies, to press upon Government to give the farmer an equal freedom to his industry, and security to his capital. (Hear, hear).

Mr. RICHARD WARNER, of Weston Hill, then moved the following resolution, which was seconded by Mr. John Toone, of High Cross:—

“That this meeting views with indignation the existence of the malt-tax, and pledges itself to take all constitutional means to obtain its total repeal. That it is impolitic, unjust in principle, and oppressive in its operation. That it curtails the consumption of our produce, interferes with the best rotation of cropping our land, debilitates our labourers, withholding the best restoratives from our diseased stock, and preventing the feeding of our cattle with our own produce.”

The resolution was adopted unanimously.

Mr. C. D. BRETTON, of Elmsthorpe, next addressed the meeting, and after a short but forcible speech, urging the farmers of England to put their shoulders to the wheel till they made it turn round, and impressing upon men, whether great or small, to unite to obtain the total repeal of the malt-tax, proposed the following resolution:—

“That it is the opinion of this meeting that the malt-tax is oppressive and unjust to the labouring classes of this country, and rendered far more oppressive to agricultural labourers since the withdrawal of protection from their labour. That it tends to their demoralization, lessens the means of employment, compelling the poor man to resort to those dens of infamy and wickedness—the beer houses.”

Mr. ROBERT SWINNERTON seconded the resolution, which was carried unanimously.

Mr. TOONE then proposed that Messrs. Oldacres and Campion be a deputation to wait on the Central Association in London, to represent this Society.

The motion was seconded by Mr. Warner, and

supported by Mr. Edward Morris, and carried unanimously.

Mr. OLDACRES then begged to call the attention of the meeting to the opinions of the Members of the Southern Division of Leicestershire, at the Meeting of the Leicestershire Agricultural Society, Dec. 1st, 1848. Sir Henry Halford said, “He knew that it pressed heavily upon the poor man in his beer; and upon the farmer, because it prevented him from malting his barley to feed his cattle with; and that there was consequently, so far, a great hardship. There was one point in which he fully agreed, and that was as to the Custom's duties. If instead of repealing the Custom's duties, Parliament had repealed the malt-tax, they would have done a better thing. They had remitted taxes paid by the foreigner, and had riveted them upon our countrymen.” My answer to Sir H. Halford is, Let us have this better thing you speak of, and it is a great question if the repeal of the malt-tax would not compel any Government to resort to Custom's duties for revenue. Mr. Packe said, “With regard to the repeal of the malt-tax he had frequently said here before, that if it was exclusively for the benefit of the Agricultural Interest, he for one would give that tax his opposition, and he would then see whether some other proposition, or some other species of taxation might not be adopted in its stead. But he had yet to learn whether nine-tenths of that tax did not come out of the pockets of the consumer, and he believed most decidedly that the consumer of malt liquor was the great payer of that tax.” I would answer Mr. Packe by asking him if a duty of 1s. 6d. a dozen was laid upon stockings, the hosiers of Leicestershire would be satisfied with being told that the people who bought and wore the stockings were the great payers of the tax. Neither, gentlemen, am I satisfied; and I declare to you, were I called upon to-morrow to exercise my elective franchise, I would vote for no man who would not declare himself in favour of a repeal of the malt-tax. (Loud applause).

Mr. Oldacres also remarked that it was not only in not brewing that the labourer suffered, but in baking also. From the scarcity of private brewings, yeast to make the home-made bread was so hard to meet with, that many poor men, with flour in their houses, had to resort to the baker for their bread. Ninepence a pint had been paid for yeast in his village this winter, and seldom to be had even at that price; and he was told that the loss to a labouring man, with a family, by being obliged to buy baker's bread, was 1s. 6d. a week as compared with home-made.

Mr. GILBERT, of Hinckley, said his opposition to the malt-tax was because it was not based upon that even-handed justice which ought to charac-

terize all the transactions and regulations of a great and important nation. Now, gentlemen, you grow wool; and when that is manufactured, soap is required to scour it. To encourage the manufacturer of wool, he is allowed a drawback of the duty on all the soap he uses in the process of manufacture, (a halfpenny per lb.); and I am told there are parties in this county who have received some hundreds per annum as a drawback of duty. There is no drawback of malt-tax on the malt consumed by you in manufacturing beef and mutton; no return of duty on the beer consumed by your labourers in the cultivation of the soil, and that seems almost as necessary to them as oil for machinery, or soap to scour the wool. No encouragement is held out to the farmer, although the protective duties on his produce are taken away. Therefore, I say, make all the use you can of the only Parliamentary letter you possess, and agitate, and petition, until you obtain a total repeal of the abominable and iniquitous malt-tax. We have

learned that of late years a pressure from without must occur before any notice will be taken within the walls of the Commons House of Parliament; I, therefore, propose that a petition be prepared, and that Messrs. Thomas Swinnerton, Matthew Oldacres, R. Warner, S. Pilgrim, and J. Champion, jun., be a committee to draw up the prayer of the petition.

This was seconded by Mr. Kendall, of Hog Hall, and carried unanimously.

It was then announced to the Meeting, that the subject for discussion on Monday, April 2nd, would be on "Tenant Right, and the importance of securing a better understanding between landlord and tenant for the unexhausted improvements on the farm." To be held at the George Inn, at 5 for half-past precisely.

A vote of thanks was passed to the Chairman, for his able and courteous conduct therein, and carried with loud applause.

DARLINGTON FARMERS' CLUB.

A meeting of the Darlington Farmers' Club was held in the offices of Mr. Dixon, land agent, on Monday the 12th ult.

JAMES COOKSON, Esq., of Neasham Hall, occupied the chair. He opened the business of the meeting by stating that they were met to resume the discussion on the subject of tenant-right. He understood that Mr. Trotter and Mr. Smurthwaite had spoken on the subject at the last meeting; it would therefore very naturally be expected that those gentlemen should now resume their observations, and favour the meeting with a further statement of their views.

Mr. TROTTER, said his opinion was still the same as that which he stated last meeting. He thought there was no necessity for people taking their farms under leases, provided they were well protected by Act of Parliament, for the permanent improvements they made upon their farms, by draining, lining, and artificial manures. He considered that yearly tenants should be remunerated for their improvement, without being bound by leases, and that there should be a legislative enactment to provide for this. It was not always advisable to take long leases. At one time wheat might be 12s. per boll, and afterwards it might fall to 8s., and the tenant ought to be at liberty to leave his farm, when he could no longer reap advantage from it; and when he left he ought to be remunerated for the permanent improvements he had made on his farm. He therefore proposed that the way-going tenant should be paid by

the in-coming tenant for every ton of manure that he makes upon his farm during the last six months of his occupation. It was very well known that way-going tenants, under the present system, frequently wasted their straw during the last few months of their occupation; but under the system which he recommended they would be induced to be economical, and preserve their manure, as they would be confident of receiving remuneration for their good management, at the expiration of their term of occupation. He also considered that the way-going tenant should be remunerated for the lime which he had used upon his land for the last three years of his occupation. Of course in three years the tenant would have enjoyed part advantage from the lime; but his labour should be considered as an equivalent for that. He should be glad to hear the opinions of other gentlemen on the subject.

Mr. SMURTHWAITE said—if it would be of any service in encouraging Mr. Emmerson or any other gentleman present to speak their sentiments, he had no objection whatever to follow out what he had said at the last meeting. He was still of opinion, that all the advantages spoken of by Mr. Trotter could be provided for by a lease; and if so, what was the use of going to the legislature to ask for an Act of Parliament? There were many places already in which the way-going tenant was remunerated for the straw and manure which he left on his farm. In such cases this was provided for by a contract between the parties; and why could not

he also be secured remuneration for his extra outlay in improvements, by a simple mutual contract or lease, as well as by an Act of Parliament? He should be a madman to oppose any measure to remunerate the tenant-farmer for his trouble and expense; but he did consider that leases were preferable to any Act of Parliament that could be framed. There were four great sources of expense to an improving tenant—namely, buildings, draining, manure of different kinds, and fences. With reference to buildings, he expressed himself pretty strongly at their last meeting, but as facts are stronger than arguments he would inform them of some in his own experience. He had at the present time ten stalls on his farm that he did not use at all. He had also a cart-house and some other buildings, unoccupied. Those buildings might all be very useful to the tenant who preceded him, but to himself they were of no use whatever, and would it not have been very hard for him (Mr. Smurthwaite) to have had to pay for the erection of those buildings on entering his farm. He, therefore, considered leases preferable to Acts of Parliament. Acts of Parliament spoke in general, and consequently every particular case could not be provided for in them; but leases could be framed to suit every particular case. As to draining, he would suppose himself in the position of a tenant succeeding another by whom the farm had been drained by drains cut twenty inches deep and six yards apart. Owing to some peculiarity of subsoil, perhaps the drains ought to be five or six feet deep, so that the other drains would be of no use. Would it not be a hard case for him to have to pay for all this inefficient drainage? Again, with respect to manures (and farmers perhaps had been more clamorous on this subject than on almost any other) who was to be the judge as to when a farm had been over-limed or over-guanoed? To show the mischief of any enactment providing for the remuneration of the way-going tenant for lime and guano, he supposed a case. Perhaps the way-going tenant had a friend who sold lime or guano. The out-going tenant, knowing that he would be remunerated, would then purchase of his friend a large quantity of lime or guano, and employ his teams in leading it on to his farm. Would it not be an injustice to the incoming tenant who had to pay for this, especially as there were differences of opinion as to the quantity and quality of the manures which ought to be used? With regard to fences—any one adopting Mr. Mechi's view on the subject would set himself against fences altogether, and wish to be remunerated by the incoming tenant for his labour and expense for removing the fences set up by his predecessor. The next tenant, perhaps would wish to be remunerated for replacing the fences; and would it

not be absurd for the incoming tenant in such case to be compelled to pay the out-going tenant, for his alleged improvements? It appeared to him therefore, quite absurd to legislate upon the subject—as absurd as it would be to tell the householder or the fundholder in what particular way they ought to spend their money. At their last meeting an experienced land-agent told them that it was almost impracticable to grant leases upon small, poor farms. He had considered the subject, and he thought he could not point out a way in which this contingency could be provided for. He proposed that the landlord himself should take these farms into his own hands till they are fit to let by lease to respectable tenants. Those small farms were least improved of any. Men with a capital to manage 50 or 100 acres undertook farms containing two or three hundred acres; and in consequence of having their hands always tied behind them, the farm was no better when they left it than it was when they entered upon it, and the landlord in many instances was glad to sacrifice his half-year's rent to get rid of his tenant. Mr. Smurthwaite concluded by reiterating his conviction that there was no benefit to be derived from an Act of Parliament, which could not be provided for by a lease, or a simple contract between the landlord and his tenant. He also stated that in some counties there was already a system of tenant-right similar to that which was proposed to be effected by Act of Parliament, and that in those counties the land was worse managed than in any other place that he knew of.

MR. OUTHWAITE said, the farmer was not protected by law in the same way as other men. A farmer, when he entered upon a farm, perhaps saw that it would be a great benefit to him to erect a steam engine upon it to grind his corn, and for other useful purposes. He erected the steam engine, but on leaving his farm he was not allowed to take down the building which he had erected for the engine, nor to receive any remuneration for it. He might remove the inside of the machine, but the law did not allow him to remove anything fixed in the wall. The tenant of a house was allowed to introduce what he considered improvements, and he was perfectly at liberty to withdraw those improvements when he left the house. He thought the agricultural tenant ought to enjoy the same privilege as any other description of tenant. He quite agreed with Mr. Smurthwaite that it would be unjust for the outgoing tenant to levy upon the incoming tenant the expense of buildings which he had erected for his own convenience. The Tenant Right Bill would provide that the tenant should not erect buildings without the consent of his landlord or his landlord's agent in writing, so that at the ex-

piration of his term he could claim remuneration, if he had not occupied long enough to be remunerated already. He was quite aware that an agreement could be framed providing for the remuneration of the tenant; but he would ask, was there one out of a hundred provided for in this way? In reply to Mr. Smurthwaite's remark, that a tenant who had a friend a dealer in guano, who for the benefit of his friend used large quantities of guano on his farm, whether it was necessary or not, he (Mr. O.) said that the legislature would employ proper men to investigate such matters, and to report whether those alleged improvements were necessary; and if they were not considered necessary, the outgoing tenant would not be remunerated. It would only be for real improvements that the outgoing tenant would be remunerated. When a tenant took his farm in a good condition and left it in a bad one, the landlord was loser; but if they had a proper system, the interests of the landlord would be guarded as well as those of the tenant. When a tenant entered on a farm in a bad state, and left it in a good state, the enactment would provide that he be remunerated—not according to what he thought proper to charge, but according to the valuation made by the proper parties appointed by government, or mutual arrangement between the parties. It did not appear to him desirable that the landlord should be obliged to take small farms of poor land into his own hand; he thought that it ought to be left to the tenant, and that he should be remunerated for the improvements he introduced. The tenant could not legally claim for all his outlay, for during his occupation he would enjoy part of the benefits; but it should be provided that in cases where he has not enjoyed the full benefit during his occupation, he should be remunerated by the incoming tenant or the landlord for the improvements he had made. With respect to fences; that also, in cases of dispute, would be settled by the government commissioners. It would be decided by them whether the landlord could claim remuneration from the tenant, or the tenant remuneration from the landlord. According to a correct system of tenant right, the tenant would not be allowed to erect buildings on another person's premises, without the consent of the landlord or steward. With regard to artificial manures also, he thought that where a person had been at much trouble and expense in purchasing oilcake, &c., for his cattle to improve his manure, he ought to be remunerated. In cases where a tenant impoverished his farm by growing potatoes and the like, he thought the landlord would have a claim upon the tenant for damages, and that there should be a clause in the Tenant Right Bill to provide for such cases. In many parts of Lincolnshire there

was a system of tenant right established, which was introduced about thirty years since. At that time Lincolnshire was in a very bad state of cultivation, caused by the want of an equitable system of tenant right; and since such a system had been introduced, the agriculture of the county had flourished, and he did not know of any part of the country in which agriculture is in a more flourishing state than in Lincolnshire. If the tenant did not manage his farm in a proper manner; if he did not leave it in such a good condition as that in which it was taken when he went to it, the landlord had a claim upon him for damages; and would not that be a better system than the landlord taking small farms into his own hands? He himself, he was happy to say, was under an excellent landlord who would not take advantage of him; but there were many landlords who did not consider the interests of their tenants, and who, when they saw that the tenant had his farm in a good state of cultivation, would raise the rent; and if the tenant would not pay it, they would give him notice to quit, and get another in his place. This was a hard case, and it was very desirable that there should be some enactment to protect the tenant against such treatment. It was his opinion that a legislative enactment, such as he recommended, would be as beneficial to the landlord (if he wished to do right) as it would to the tenant; for the landlord could claim for damages, when the tenant did not cultivate his land in a proper manner. Again—suppose a tenant has got his discharge from his farm. It was very natural in the present state of things for a tenant, when he has got his discharge, to expend as little labour as possible on his farm, and to get as much profit as possible from it. Under a system of tenant right, if a tenant did not leave his farm in as good a condition as it was when he went upon it, he would have to pay damages; and on the other hand, he would be remunerated for the improvements he had made. The parties appointed by government would be able to give a just estimate of the remuneration a tenant ought to receive for improvements. He quite agreed with Mr. Trotter, that a tenant, on leaving his farm, should be remunerated for his pains and expense in purchasing oilcake and linseed to feed his cattle, in order to improve his manure. The tenant, under a system of tenant right, would not have his own charge, unless the incoming tenant thought it was a just charge; the parties appointed by government to adjust such matters would guard against fraud. He had now told them freely his opinions on the subject, and he had said to them the same in substance as he had said in giving evidence before a committee of the House of Commons some time since. Before sitting down, he wished to remark

that if any one wished to ask him any questions, he should be glad to answer him to the best of his ability.

Mr. SMURTHWAITE then asked Mr. Outhwaite a number of questions, which he replied to in a very satisfactory manner.

Mr. DIXON said, it appeared to him that though there had been a good deal of discussion between Mr. Smurthwaite and Mr. Outhwaite, the difference of opinion was very much less than might at first be imagined. Mr. Outhwaite had said that he had no objection to leases, but he alluded to the difficulty of bringing about a general system of leasing, and certainly the difficulty did appear great, and in no place greater perhaps than in the county of Durham. Those who let the land to the tenant farmers were in many cases lessees themselves, and could not grant leases. Even the copyhold landlords could not grant leases. Hence the great difficulty in bringing about a system of leasing; and this was a strong fact in favour of a tenant right bill. He, however, thought the long lease system preferable to a tenant right enactment. It was profit that a tenant farmer looked and laboured for, and not for remuneration for his outlay merely. Under a long lease a tenant had a far greater inducement to labour freely to bring his farm into a perfect state of cultivation than under any tenant right bill. He had no objection to an equitable system of tenant-right, but he thought the long lease system preferable, inasmuch as when a man took a long lease of a farm he would be likely to go to work freely to improve it, and bring it into as good a state of cultivation as possible, with the assurance that he should have an adequate return. Under a yearly tenancy there was always some uncertainty, so that the tenant could not go to work so freely to make improvements in cultivation as he would when sure of staying upon his farm. At the present time, unfortunately, there was neither a system of tenant right nor a system of lease. A bad farmer would often offer a greater rent than a good farmer (hear, hear); and in some cases where a good manager would offer £300 for a farm, a bad manager would offer £350; and when a farm got into the hands of the bad manager it was pulled to pieces, spoiled, and ruined. It was, therefore, highly desirable that there should be a better system of holding between landlord and tenant, so that both tenant and landlord should be bound to do their duties to each other, so that neither could take advantage of the other.

After a little further discussion, in which Mr. Outhwaite, Mr. Dixon, and Mr. Smurthwaite, took part,

Mr. EMERSON said, tenant right was not the custom of the country in Yorkshire. From the ex-

amination of different gentlemen before a committee of the House of Commons, it appeared that there was a certain landed proprietor in Lincolnshire who let his tenant a farm upon these conditions—that he was to drain the land, that there was to be a certain quantity of artificial manure applied to it, and that he had to purchase a considerable quantity of oilcake for his cattle, and that he should be remunerated. In consequence of the good effects of this plan, it became the custom of the county of Lincolnshire, and Lincolnshire was now in a better state of cultivation than the county of York. He maintained, that if they had an act of parliament for tenant's right, that in the first place it would be an advantage to the labourer, next to the tenant farmer, next to the landlord, and next to the country at large. If a tenant took a wet land farm in Durham or in Yorkshire, it was a well known fact that it needed draining, and for that draining he ought to be remunerated, or at least enjoy the benefit of it. He considered that Mr. Outhwaite had treated the subject in a very able manner; and that he had done the tenant right question ample justice, and had left very little for him to say. It was his humble opinion that it would be for the advantage of all parties if we had an act of parliament for tenant right. For himself, as an individual, he cared very little about tenant right, for his landlords were coming forward in a very liberal manner in erecting buildings, &c., on his farm. For the benefit of others, however, he advocated the system of tenant right, feeling assured that by a proper system great improvements would be made in produce and in agriculture generally.

The CHAIRMAN expressed his approbation of the manner in which the discussion had proceeded, but declined offering any opinion on the subject,—at the same time stating that there had been much said on both sides with which he entirely concurred. He then read a letter, put into his hands by the Secretary of the Club, from F. Mewburn, Esq., chief bailiff, in which that gentleman regretted his inability, through indisposition, to attend the discussion, and intimated a desire, if it should be convenient to the club, that the discussion on the same subject should be resumed at a future time, when he hoped to be able to attend, and take part in the proceedings.

In deference to Mr. Mewburn's wish, the discussion was adjourned for a fortnight, and the meeting separated.

An adjourned meeting of this club was held in the office of Mr. T. Dixon, on Monday afternoon last, for the purpose of discussing the subject of tenant-right.

In the absence of the President, Mr. CHAYTOR

occupied the chair. He observed that he had not had the pleasure of attending the former meetings of the club when the subject of tenant-right was discussed, so that he did not know at what point the debate had been last concluded, nor how it had proceeded. As the discussion had been adjourned at the request of Mr. Mewburn, perhaps that gentleman would be kind enough to state his opinions.

James Cookson, Esq., the President of the club, arrived immediately after these introductory remarks, and Mr. Chaytor vacated the chair in his favour.

F. MEWBURN, Esq., chief bailiff, said, he regretted that he was not able to attend the previous discussions on this very interesting question in consequence of indisposition; but, having now entirely recovered, he was enabled to attend this meeting, and he was desirous of stating to them the opinions he had formed after great deliberation on the subject under discussion. Whilst confined to his house he had devoted a portion of his time to reading the evidence that was given before the committee on Mr. Pusey's bill, and he had also thought a great deal on the question to be discussed by them that day, namely, the Act of Parliament which was sought for the purpose of securing tenant-right. It occurred to him, on reading the evidence he had named, that it was a great misfortune that the farmers should have adopted tenant-right as the title for the measure in discussion. This title, in his opinion, had caused the great indifference which, it was not to be denied, the landlords in general manifested with regard to this question. The farmers had unwisely affirmed a proposition which had yet to be established; whereas, in his humble judgment, they ought to have launched the question:—What are the best means of inducing capital to be invested in farming? That was the question the farmers were anxious to have solved; and then comes afterwards the question—How is this capital to be secured? It appeared to him, after much consideration of the subject, that the question should be discussed under two propositions. The first was, that leases for the term of 21 years, *with a reservation of corn-rents*, are the best means. The other proposition was, that yearly holdings, with the privilege annexed of the out-going tenant being paid for unexhausted improvements on his land, is the best means of inducing capital to be invested in farming. He would discuss these two propositions in detail. First, as regards leases. Unless the lease was for a term of twenty-one years or upwards he had nothing to say; and unless corn-rents were reserved he also had nothing to say, because now, that all protection was withdrawn from the landlord and tenant, they were in this situation, that although they were

told by the philosophers and soothsayers, the freetraders, that the price of corn would, on an average, be more equal than under the system of protection, they knew that philosophers were sometimes mistaken, and, therefore, corn-rents were just and equitable and proper alike for the landlord and tenant, as a security against the vicissitudes which might befall them. If the prices of corn were more equal and less fluctuating under the free-trade system, then rents would be more certain; but if prices were more fluctuating under the free-trade than under the protective system, then it was only reasonable that the landlord should share the risk with the tenant. These were the reasons for his advocacy of the principle that corn-rents ought to be reserved. He took the affirmative of the proposition, that leases are the best inducement for the investment of capital in farming. The grounds upon which he recommended that proposition were these. In the first place, the lease being for the term of twenty-one years gave security to the tenant for his capital. Under such a lease the tenant was not subject to the caprices of his landlord. If they quarrelled, the tenant was still secure in the possession of his farm. If the landlord died, the tenant was undisturbed; or if the landlord sold the estate, he could only sell the reversion; thus it is evident that a term would be a safe security for capital invested. But, to make this more clear, it would be worth while to inquire a little into the course pursued by a tenant in taking a farm for 21 years. He would view it, in order to ascertain the nature of the soils and their productive qualities—he would inquire into the amount of local burthens, and next the locality of the farm with reference to the different markets to which his produce would have to be sent for sale. Having satisfied himself on these points, he would fix the rent which the farm could afford, and the next consideration would be the covenants of the lease as regards the cultivation. When all these matters are arranged, the lease is executed. After having got his lease the tenant would say to himself, "Now, I have taken this farm, and, on examining it more minutely, I see that if I expend two or three thousand pounds in draining, in erecting new buildings, and making and improving fences and roads, I shall greatly improve the farm, at the same time I shall largely increase its productions. But before I expend so large a sum let me ascertain what number of years it will require to reimburse it—that is to say, what *additional* annual sum beyond the rent shall I receive from my farm, as the result of my improvements, to be placed out at compound interest? In other words, shall I be repaid principal and interest before the expiration of my term?

Having satisfied himself that he was safe in his speculation he would expend his money and improve his farm, and would employ more labourers : and whilst the nation would be benefited by the increase of the production, the tenant would be repaid the capital he had invested. Whether a tenant under a yearly holding, with the advantage of protection by act of parliament, would be equally safe, is for the committee to decide. Now, we will assume the term to have expired, and the tenant to have got back his £2,000 or £3,000 expended on the farm, what more could he demand of his landlord ? Would he have any claim upon him for the erection of buildings and draining ? Of course not, for the cost of the buildings and draining would be included in the sum he had expended. If he had improved the land by any new system of agriculture he had got the benefit of it. What more claim could he have than the man who takes a building site for 99 years and erects a house upon it ? In the latter instance, at the expiration of the term of 99 years, the house goes to the reversioner, and nobody ever heard of such a thing as the person who then held the lease demanding remuneration for the purchase money, he paid for his lease. But it is said the tenant has greatly improved the farm. Granted, but remember he had reaped all the benefit of his improvements and got back his capital. What more could he honestly require ? If he miscalculated or failed in his speculations is the landlord to make good his losses ? Having discussed the first proposition, Mr. Mewburn next proceeded to examine the grounds on which the second rested its claims to legislative interference, viz., yearly holdings, with the privilege annexed of the out-going tenant being recompensed for unexhausted improvements. That the securing this privilege to the out-going tenant is considered most important, is evident from the frequent discussions it has occasioned in all, or most, of the Farmers' Clubs ; and more especially from the circumstance of Mr. Pusey having obtained the appointment of a committee to investigate the subject. Having read the evidence taken before that committee he was enabled to discuss with greater advantage the second proposition, but more particularly with reference to the condition annexed,—that the privilege shall be secured by an Act of Parliament. That a yearly out-going tenant should be reimbursed for unexhausted improvements is a proposition no one can justly deny ; but the question is—How is he to be secured repayment ? Those who contend for the yearly holdings are bound to show that yearly tenants will be as *secure under an Act of Parliament* as they would be under a lease. He confidently affirmed—though perhaps he might be considered a little too arrogant—that it was utterly impossible

that any Act of Parliament could, under all the surrounding circumstances, be framed to secure the yearly tenant in the same way as a lease, and that he should proceed to show. He had noticed that for the last twenty years there had been a most extraordinary anxiety manifested for Acts of Parliament as a cure for all ills and grievances. When the commercial interests of the country were depressed from over-production or other causes, there was an appeal to Parliament to take their case into consideration and redress their injuries. When the agricultural interest was depressed, the same course was pursued—committees were appointed, reports were made to the House ; and the cry was, " Let Government pass an Act to remedy the evils under which we labour." He fancied that those who made such appeals to Parliament, and cried aloud for Acts of Parliament, must have read De Lolme on the British Constitution. That elegant writer, speaking of an Act of Parliament, says, " An Act of Parliament is wonderful. Its power and its efficacy are beyond all conception, for it can accomplish everything except converting a man into a woman." He thought the advocates for this Act of Parliament went beyond De Lolme—they appeared to think that it could convert a man into a woman—that it possessed all the properties of the *elixir vitæ*, or possibly they might hope to find the philosopher's stone. But, joking apart, let us consider the practicability of obtaining this Act of Parliament so much desired to have passed. Now, Mr. Pusey had attempted to obtain an Act, but he failed. Why did he fail ? He did not even go to a second reading. His bill comprised all that could be desired. He should show them that it was utterly hopeless attempting to get an Act of Parliament : but assuming an Act, he would also show that it would be helpless to them, nay, fraught with evils of which at present they could form no idea. The attempt to get an Act of Parliament was hopeless because the landlords, generally speaking, were not with them. The farmers had not gone the right way to work. They should have consulted or enlisted the landlords in their cause—they were important parties to the Act of Parliament, for if the in-coming tenant could not pay the out-going tenant for his improvements, who was to pay ? Why, the landlord, or the land. Mr. Pusey was evidently of opinion that he could not carry his measure in consequence of the landlords not being convinced on the subject, and did not go to a second reading—he has abandoned the first, but brought in another bill, giving tenants for life, trustees, and others, a power to grant leases with certain tenant-privileges annexed. But that bill will fail like the other. Assuming, however, for a moment that an Act was passed conferring

upon the out-going tenant the privileges contended for, he (Mr. M.) undertook to say the amount of litigation which the Act would engender would surpass all comprehension. It appeared from the evidence given on Mr. Pusey's committee, that there are as many and as variable customs of tenant-right in the country as there are counties, and more too; and how were these customs to be dealt with in the act? The farmers of one county would not be likely to give up their old-established customs in favour of those of other counties, and the result would be that at immense amount of litigation would take place, and the remedy would be found worse than the evil. This was a point which had never been touched upon, nor had the farmers, at any of the different clubs in their various discussions, adverted to it. They had never considered how these various customs in different parts of the kingdom were to be dealt with in the act. He would tell them how these customs would be dealt with, and that was the very reason he said the act would be utterly *helpless* to the tenant. The farmers in different counties would clamour and petition for clauses to protect them in their respective rights, and the county members would support them. The consequence would be that Mr. Pusey would either have to withdraw his bill or submit to the introduction of protective clauses. Now, what sort of an act would it be? Would it give security to the out-going tenant? Would it be a greater security than a lease? Are farmers aware of the litigation which modern acts of parliament engender? And what right have they to expect exemption from that calamity? In truth the act would be so crude and incongruous, the clauses would be so contradictory, that it would resemble the Kaleidoscope, and would be known as "the Kaleidoscope Act of Parliament." He would give them a few specimens of acts of parliament. But first, he would remind them of what Mr. Baron Alderson said about them at the last Durham assizes. In speaking of some recent acts of parliament respecting criminal justice, the Baron said—"Acts of Parliament now-a-days are passed to puzzle, and not to enlighten the community." They would recollect that in the 3rd of George IV., the General Turnpike Act was passed. That act did not pass until two successive committees in two successive sessions sat upon it and deliberated and considered it in all its bearings, in order to make it as perfect as possible. When the act did pass it was published with notes by Mr. Bateman, a barrister, and who, in his preface, speaks of it as the most perfect act that ever was passed. Yet, so imperfectly was it drawn, that several acts have been passed to cure the defects of this act, and the blots are not all hit, and if it had not been for the intro-

duction of railways it is more than probable that twenty acts would have had to be passed to improve upon it. But he would come to a more recent set of acts that were drawn with great care by most eminent lawyers, he meant the Real Property Acts. When they were passed Mr. Shelford published them with notes in a *thin* volume. Yet there had been numerous and contradictory decisions on these acts, and Mr. Shelford's last edition of these statutes has increased to a portly volume. One more reference, and he should be done with acts of parliament. In the last session an act was passed called "The Joint Stock Company's Winding up Act." It was passed in consequence of the distressing failure which took place in Newcastle. That act, to his own knowledge, was prepared with great care, and with much anxiety by the gentleman who undertook it, and who was assisted by an eminent member of the legal profession in London. If any act was perfect, it was considered that was. Yet, he himself had been engaged in questions arising out of that act; but so difficult is it to put a correct interpretation upon it, that he believed not less than a hundred opinions had been given upon it, and scarcely any two lawyers could be brought to agree upon it. Contradictory decisions had been given upon this act, and, on one occasion, the Lord Chancellor refused to hear a case until a court of law had given an opinion upon it. Such would be the fate of the farmers' act. He was anxious to warn the farmers, that if such an act as they requested was passed, it would be a harvest for the lawyers. He wished them, whilst they were clamouring for an act of parliament, to consider well what they were doing, and not to involve themselves in a vortex of litigation, out of which they would come, not only with their pockets emptied, but their farm-yards likewise. His opinion, as he had told them, had been formed upon great and mature deliberation of the subject in all its bearings; and he hoped he had succeeded in shewing that leases for twenty-one years, with corn-rents, were the best means of inducing capital to be invested in farming. Under a lease, they had a security which they could not have under an act of parliament. Some objected to leases, because they were afraid of the fluctuations in prices. In reply to those, he had to say that the corn-rents were a sufficient safeguard to the tenant. Some, however, had a dislike to leases which they could never overcome. If the question was put to him, Is it not desirable, just, and honest, that the yearly tenant should be repaid for unexhausted improvements? he would answer, Undoubtedly so, to a certain extent. But some asked how were they to get this remuneration? He answered, Agitate, and discuss the question with the landlords and stewards;

make them understand the subject; every one now has the means of information, and great questions now-a-days are always carried by discussion. When you take your farms, make your contract with your landlord to have a remuneration, and in the course of years a custom will be established. We are told that history is philosophy teaching "by example." Look into the agricultural history of Lincolnshire, it is a case precisely in point, and confirmatory of the opinion he had expressed. Forty years ago, Lincolnshire did not possess a system of tenant-right, but now it had become the custom for yearly tenants to be remunerated for unexhausted improvements; and if it was so in Lincolnshire, why should it not be so in Durham, Northumberland, and Yorkshire? He repeated, it was by discussion that they would accomplish their object, and in doing so, none would be more gratified than himself. Nothing would give him greater pain, nothing would disturb him more than to see an act of parliament passed embracing the tenant-right, but clogged with restrictive provisions and clauses which would be productive of endless and ruinous litigation. Mr. Chaytor had prepared some resolutions which he (Mr. M.) had been allowed the honour of reading. Those resolutions, to a certain extent, were at variance with the opinion he had given; for, if he understood right, Mr Chaytor wished for some legislative enactment to secure tenant-right. His (Mr. Mewburn's) objection was, that any legislative enactment on the subject, would be pernicious. He was disgusted with acts of parliament, and he considered that it would be a great benefit to the country if no act of parliament would be passed for fifty years to come (applause). This might appear a strong opinion to entertain, but he stated it advisedly. Before concluding, he begged them to allow him to give another illustration of the effects of acts of parliament. Some years ago an act was passed respecting servants misappropriating their masters' property. The first prosecution that took place under that act was tried at Durham. A question arose whether the offence, as proved, came under the act? A great deal of argument ensued; the table was covered with law books and reports; and after much consideration, the judge said, as the act was a new one, and the case was doubtful, the prisoner ought to have the benefit of the doubt, and the prisoner was consequently acquitted. A farmer sitting near the prosecutor's attorney, exclaimed, with much vehemence, "D—n those bukes! if it had not been for them, we might have had the prisoner transported." How many books would be resorted to, to show the farmers' act did not afford redress? It only remained for him now to thank the committee for the attention they had given him. He

was only afraid that he had occupied their time too long (applause).

The CHAIRMAN said, he was exceedingly obliged to Mr. Mewburn for his observations, and he would now be glad to hear the opinions of other gentlemen present.

Mr. CHAYTOR said, he thought there could not be the least doubt on the minds of any present, that Mr. Mewburn was a very able authority. He had spoken quite disinterestedly touching the operation of acts of parliament; and he was very likely, from his extensive experience, to know what influence they had exercised upon society. At the same time, he (Mr. C.) must say this, that if they took Mr. Mewburn's opinion to the full extent, they must do away with all laws and acts of parliament whatever. Mr. Mewburn's interpretation went to the extent that no act whatever should be passed, merely because there were errors in it. He quite agreed that it was impossible for the legislature to provide an act to meet every case which might arise. He also agreed that the landlords might object to the term tenant-right, but he was afraid they would object to Mr. Mewburn's term also. The opposition of the landlords had sprung from the very nature of the agitation. The landlords, who ought naturally to have taken the question up for their own benefit, for it would be beneficial to them by bringing capital upon their land, had neglected to take up the question and to consider the state of things; and the consequence was, that the majority in numbers—that is, the tenants—have at last been obliged to bring the subject forward in self-defence, to force the question upon the landlords; and as the movement had originated with the tenants, they had naturally designated it by the term tenant-right. It was very clear that if Mr. Mewburn's designation had been given to the movement, the tenants, generally speaking, would not have interested themselves in the question; they would have said, "This is a landlord's question: it is not ours." This agitation had only originated recently. Why did it not originate twenty years ago? The answer was this, great improvements had taken place in thorough-draining. The new requirements of agriculture required a greater expenditure of capital by tenant farmers; and it was discovered, that unless they were protected and remunerated, they would not make such new improvements as were desirable. They had found out that if they did make those improvements without some protection, they placed themselves in a position to lose a large part of the capital they had expended. They therefore found a necessity for some alteration taking place in the customs or laws which would enable them to have the security they ought to have. There could be no doubt that leases

were desirable. He should go as far as Mr. Mewburn, and say they could not do without them; for no system of tenant-right, no act of parliament, could secure the possession of the land to the occupier for a term of years. Even though he paid his rent regularly, he was still liable to be removed at the instance of the landlord; and all knew that though the tenant were paid for the money he had expended in draining, &c., there was still a great loss in moving from one farm to another. A lease, therefore, was required to secure the tenant in his occupation for a reasonable time. He did not think that yearly holdings with remuneration by act of parliament for improvements would by any means supersede the necessity of leases; at the same time the leases did not supersede the necessity of some law to recognize the position of the tenant, and enable him to recover the damages and remuneration to which he was entitled for improvements, because they were aware that the term of a lease was always decreasing; besides, a man might take a lease, and expend all his money on the farm the first year, and then die, and what then became of his family? Many leases were terminable by the death of the occupant; and, in such a case, a tenant's family on his decease might be ruined. Under leases, therefore, it was necessary that there should be some system of tenant-right to protect the family of a tenant under a lease at his death. Under Mr. Mewburn's system, however, there would be none whatever. Again, they all knew that if they embarked in a business—and what was farming but a business?—they looked for something more than merely getting the capital back; they looked for profit. If they got nothing for their risk of capital, where was the inducement to improve cultivation? The landlord was necessarily benefited by the improvement, and surely the tenant should have a share of the benefit. Properly speaking, it was the landlord's duty to make improvements in draining, &c.; but tenants were willing, on certain conditions, to undertake those improvements themselves, and it was right that they should be remunerated. Of course, it came within the scope of a private arrangement with his landlord that the tenant, at his removal, should receive the value of the unexhausted improvements he had made; but it was found that this custom, which already existed in Lincolnshire, could not be extended to the county of Durham until a very large change took place in the tenantry and the mode of farming. The description of the soil was different from Lincolnshire, and the modes of cultivation varied accordingly. The tenants of Lincolnshire had sufficiently understood the subject to prove that it was desirable that some private covenant should be made with their landlords with regard to

remuneration. Their landlords had concurred; and no doubt it could be managed in other parts of the country as well, if landlords and tenants were a little better informed, and more conciliatory. As that, however, was not the case, he did consider himself that there should be some enactment on the subject. Mr. Mewburn had made some excellent remarks on the advantages of discussion; and certainly discussion on the subject would be productive of good, even if it did not result in any act of parliament, or in any national measure. He did not think the case of a person who bought a lease of building land was exactly parallel to that of one who occupied a farm for a series of years: the profits derived by the tenant in the former case were of such a nature, that he could afford to lay out his money with the certainty that by the time his lease was expired he would both redeem the capital he had expended and have a handsome profit. There was no question that legislation on minute particulars with regard to tenant-right would be productive of litigation and mischief: he therefore should propose that the act should only extend to such general principles as were applicable to everybody, and leave it to be determined in all cases by arbitration, such arbitration to be final. It was perfectly true that an act of parliament, embracing minute particulars, could not be framed to apply to all the country; but the extensive improvements on which he recommended legislation to provide for the remuneration of the tenant were the same all the world over. The general principles of draining were the same in every country; the same might be said of tiles and the articles of building. Manures, also, were nearly the same all over the country, and he did not apprehend that much difficulty would arise with regard to them: the remuneration which a tenant ought to receive would, in most cases, be easily and satisfactorily adjusted by arbitration; and in a short time such a good understanding would take place between landlord and tenant, as would effectually prevent vexatious litigation. Mr. Chaytor then read over the resolutions he had to propose, which will be found in their proper places. On the whole, he did not think that he differed so widely from Mr. Mewburn in this matter: he, too, considered leases as being preferable to an act of parliament, but he said that neither plan was perfect without the other. The operation of leases with regard to improvements was this—that if a tenant had just four or five years of his lease to go at the present time, when such great improvements are everywhere being introduced, the landlord would not make changes or erect buildings for the good of the tenant. The consequence was, that the tenant must either introduce the improvements, or erect

the buildings, or be content to go without them, and to lag behind his neighbours in the culture of his farm. If he did erect the buildings the present law did not allow him to remove them at the end of his term, nor could he claim remuneration for his expenditure of capital and labour. He concluded by stating that he was quite satisfied that an act descending to minute details would bring upon the country evils worse than those which were sought to be remedied; he therefore deprecated any legislative interference extending beyond general principles, and the affirmation of the right to compensation for unexhausted improvements, such compensation to be settled by arbitration.

Mr. MEWBURN said, that Mr. Chaytor, in his observations on leases, had forgot that the interest of the tenant in the lease being absolute, could not be taken from his family in the manner described at his death. The family could sell the lease for every shilling it was worth; and if the proprietor chose to sell the property, he could only sell the reversion.

Mr. CHAYTOR said, he knew landlords that would not grant leases on these terms.

Mr. MEWBURN said, he had assumed that the lease should be taken for 21 years, so that the proprietor could neither mortgage nor sell it. In the Scotch leases which he had had an opportunity of perusing, he found it expressly recognized that the term should be secured for his family if the tenant should die. On the whole he had not much objection to the resolutions of Mr. Chaytor, though he was opposed to any legislative interference whatever. He quite agreed that the tenant should be remunerated for unexhausted improvements, but the amount of compensation should be settled between him and his landlord; for he was perfectly convinced that legislative interference would end in nothing but vexation and sorrow.

Mr. CHAYTOR said, as soon as they got every tenant fully to understand, not only what the land required, but what was necessary to his own protection and interest, they would not require any legislative enactment. If, however, they chose to wait till every one was enlightened, they might wait till the end of time. They ought to accelerate the arrival of that time by putting the tenant in a more fair position to deal with his capital. It was very well known that in matters of business tradesmen had all the facilities they could reasonably hope for laws for recovering their just claims. With tenant farmers it was otherwise. If the landlord had a claim upon his tenant, he could recover easily; but, if a tenant had a claim upon his landlord, in point of fact he had no remedy at all. He thought that under the system of arbitration he had recommended, vexatious litigation might be ob-

viated. The arbitrators would be well acquainted with the customs of that part of the country in which they went, and their decisions would therefore in general be equitable and satisfactory. He thought they ought to come to some resolution on the subject before they parted. He therefore proposed the resolutions he had drawn up, though of course any gentleman would be at liberty to propose others more in accordance with their sentiments.

The CHAIRMAN then read the resolutions proposed by Mr. Chaytor; they were as follows:—

Resolved—1. That legislative enactments, recognising the capital of the tenant, and which will facilitate his recovery of just claims for compensation or damage to be settled by arbitration, and which will enable him to remove buildings, of whatever description, of his own erection, are, in the present advanced state of husbandry, absolutely necessary to the national welfare.

2. That a more minute interference by the legislature with details, further than to settle the general principles on which compensation shall be awarded, is not desirable.

3. That whereas no system of tenant-right will entirely supersede the advantages of leases, and as landlords and tenants have, in general, the power to grant and demand them, that no enactment on this point is desirable, except to enable all landowners at present without such powers to grant leases as far as 21 years, as there is reason to hope and believe that the spread of knowledge will enable parties to discern and act upon their true interests by private contract.

Mr. MEWBURN said he should not object to the resolutions.

Mr. SMURTHWAITE could not see any great advantage in being allowed to remove buildings. There would be only stone and timber, and, without remuneration, of what value would be the privilege of removing them?

Mr. CHAYTOR said, if the tenant did not think it would be advantageous to him to take the buildings away, he would be at liberty to leave them.

Mr. MEWBURN said, it had been found practicable in many cases to remove buildings without displacing a single stone.

Mr. NEASHAM said, that in many cases arbitrators would be found to differ on the matters they were called in to decide upon.

Mr. CHAYTOR said, the umpire would then settle between them.

Mr. SMURTHWAITE said, they had the example of Lincolnshire before their eyes, and why could not the same system be introduced here?

Mr. MEWBURN said, the answer to that is, you must enlighten the landlords.

After some further discussion on compensation for improvements, remuneration for or the removal of buildings, the propriety of legislative interference, and the respective merits and defects of a system of arbitration, in which Mr. Mewburn, Mr. Chaytor, Mr. Addison, and Mr. Smurthwaite joined, the resolutions which had been proposed by Mr. Chaytor were seconded by Mr. Mewburn, and unanimously carried.

The meeting then separated.

TENANT-RIGHT.

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS,
WITH THE EVIDENCE.*(Continued.)**Evidence of Mr. THOMAS SWINNERTON.*

CHAIRMAN.] You are a farmer, resident at Caldecot, in Warwickshire?—Yes.

What is the extent of your occupation?—About 480 acres.

What is the time of entry upon farms in Warwickshire?—Generally Lady-day.

Where is your farm?—In the north division, on the side of Leicestershire.

The entry being at Lady-day, who takes the following crop of wheat, the out-going or the in-coming tenant?—The out-going tenant takes the following crop, except an arrangement is made for payment; the agreements are now generally made so that the out-going tenant cannot hold it, but it must be valued to the in-coming tenant.

Mr. HENLEY.] By custom the out-going tenant takes it?—He takes the value of it, whether it be in the crop in money.

If there is no agreement he takes it?—Yes, if there is no arrangement between the two tenants.

CHAIRMAN.] Whom does the manure belong to that is on the premises?—To the landlord, we should call it so, or to the in-coming tenant.

If the out-going tenant has spent cake upon the feeding his beasts does he receive compensation?—I do not think that has been generally done in my neighbourhood. I do not think he could claim under the present custom anything.

If he has used bones, has he any compensation?—Bones are not much used except on the sandy lands; where they are beginning to use them, some little alterations are made in the agreements, so that there shall be compensation for the bones for a series of years afterwards.

Is land generally held from year to year with you, or upon lease?—A lease is very rare indeed; the holding generally is from year to year.

Mr. EGERTON.] Over what number of years would the compensation for bones on your land extend?—I should think about to five years; I think they improve to five years upon our land.

Have you used bones?—A small quantity myself; they are not generally used upon our land.

CHAIRMAN.] Is there any compensation for improvement of the land with you paid by the in-coming tenant?—No, except for draining.

And what is the nature of that compensation?—According to the opinion of many valuers it only extends over three years. I am a land valuer myself, and therefore have had considerable experience in the customs of our neighbourhood for 15 or 20 years.

Are you accustomed to value between out-going and in-coming tenants?—Yes, frequently.

In the opinion of some it only goes for three years; is that the general custom?—Yes, that has been the custom; we are getting it extended to a longer period.

Does that period apply to old bush draining without tiles?—It has been more common to drain without tiles than with; till within the last few years, it used to be

done by turf draining; now that we drain with tiles and deeper it requires a longer period.

It formerly was considered that three years was a sufficient remuneration for turf draining?—I never thought so.

For tile draining you would say decidedly not?—Decidedly not, and particularly upon grass land; it wants a longer period for grass land than ploughed land.

It does not answer so well upon grass land?—It is immediate upon the ploughed land; upon the grass land it is for a time a disadvantage.

How so?—I have seen it change the nature of the grass; it frequently does not produce so much as before, until a different description of grass gets up.

What would be a fair period for compensation for tile draining upon grass land and arable land?—We are draining three feet and three feet six inches upon some of the strong clay lands; over ten years there, certainly not less than seven.

Have you any marling in Warwickshire?—Yes.

Mr. HENLEY.] Is it ten years upon the arable land?—Upon both, if it is deep draining.

Do you put it the same upon both?—Arable might be put at seven, and the grass land at ten; it is only the first year or two that there would be any difference; at the end of two or three years there would not be a different compensation upon grass land from the arable.

CHAIRMAN.] Is there any marling in Warwickshire?—Not so much as there used to be.

Is it better to employ artificial manures?—It has been done till our land is heavy; ours is a strong clayey land; our forefathers, when they marled so much, they got it done cheaply, and now we suffer for it.

They have over-done it?—Yes, in many instances.

Mr. SOTHERON.] That is putting marl upon clay?—Yes.

CHAIRMAN.] They made it too strong?—A small portion might be beneficial; it has been done over and over again, and it is got now too close.

Are your buildings capable of improvement in Warwickshire?—We are improving them very much now; I think they have been capable of very great improvement, and I am glad to see a good spirit among some of the landlords and tenants; they are improved very much upon a good principle, and they are better adapted to make better manure.

They have not improved all the farm buildings in the county?—As a matter of course it depends in a great measure upon the landlord and upon the tenant and their means, in some respects; ours are generally small holdings; on a great many of the estates, I could mention one, near me; I speak of Leicestershire as well as Warwickshire; the custom is similar in my district, some of the buildings are much improved, but some of the smaller farms have not been done anything with.

Would it be desirable to admit the principle of compensation to the outgoing tenants for their reasonable improvements made on the farm?—Yes, it is very desi-

nable, and it would tend to improve the cultivation of the land very much.

In what way?—By a greater outlay of capital, where I think the great check to all improvements is now.

You think the outlay of capital is at present discouraged, from a feeling of want of security?—Yes, that has been the impression upon many occasions when I have valued.

Could you state any cases in point?—I could state cases where it has occurred.

Will you state them without mentioning any names?—I know a case of three brothers, occupying land under one landlord, I believe to the extent of about 670 or 680 acres; they were encouraged by the landlord to lay out their capital, under a promise that they would never be interfered with; they found most of the materials themselves, and found the tiles for some years; the last two or three years of the draining the landlord found them tiles; nearly every foot of the land was well drained. About the period of completion, a notice was given to the tenants, and an intimation that a valuer would be appointed to go over the farms; that was done; what the value was which was put upon them did not transpire, but the rent was increased £1 an acre, but eventually it was compromised for 10s.; that was the hardest case I ever knew of outlay of capital and want of security.

Can you state other cases of a similar character?—I know of several, but not cases so clear as that.

The question is whether you have any doubt that the want of security for the outlay of capital is a discouragement to increased cultivation in Warwickshire?—Most decidedly so.

Is it generally a discouragement of the employment of the agricultural labourers?—Of course it is; it would be mainly instrumental in the employment of labour more than anything else; the great neglect of the proper cultivation of land is from the want of labour being employed upon it.

As a practical man, do you think if the tenants of Warwickshire had a reasonable security for their outlay, they would be disposed to avail themselves of it, and to produce more wheat and employ more labourers?—Many farmers would do it, no doubt, as far as they have the means.

Is there any other point you wish to mention to the committee?—No, except as to the farm buildings; it is necessary that the tenant should have good farm buildings; that is one of the greatest improvements that could be made; tanks are much wanted for the liquid manure and so on; and if the landlord was not willing to give a compensation for them, the tenant should be allowed to remove them, as well as to receive compensation for unexhausted improvements.

There are cases where landlords could not afford to make the improvements out of their own pockets?—Yes, I know that.

Though all farmers would not be able to make improvements, still there are many who would, if they had security?—I am quite sure they would, at their own expense.

Do you think it would be desirable to give security for money laid out upon farm buildings in a reasonable way?—Yes, to secure them, the tenant should be paid for them, or allowed to take them down; at the present time they cannot remove a stone.

You consider that the improvement of the buildings is almost necessary to the improvement of the farming?—I consider it very important indeed; there has been great improvement made in the land where they have had good improved buildings; another thing is, that with respect to the manure there is much loss; if a man knew the loss and waste that there is often in his

farmyard manure, he would not lay out so much in artificial.

Mr. HENLEY.] How long have you known the neighbourhood?—I was born in the house that I occupy; we have occupied that farm 52 years, my father and myself.

Are you acquainted with the custom of the trade with regard to buildings?—I am so; when I speak of acquaintance with it, I am acquainted with our neighbourhood.

Speaking of trade and commercial fixtures, as contradistinguished between commercial and agricultural?—Yes.

Your opinion would be that the farmer should be put upon the same footing as tradesmen, as regards the buildings which he erected?—Yes.

That would be satisfactory?—It would be desirable to have it upon the same plan, either to remove them or be taken to.

That is the case with trade buildings, a man may take them away if he does not agree with the party?—Yes; that has been so where I have been called in.

That would be satisfactory to the farmers?—Yes; I have never heard the farmers express themselves so, but I believe that to be the case.

As to this case which you stated, where the party had his rent increased, how long was it that he had occupied the farm?—There were various periods; some 10 years, others seven years, others five years; they were taken at different times.

In the case of this party you have spoken of, the rent was raised 10s. an acre?—Twenty shillings; it was likely to have come into a court of law; they over-held under the false impression that the landlord would take the 10s.; it was afterwards compromised for 10s.

How long had the party occupied the land, and commenced the draining?—I should think in one instance perhaps 10 years, in another about five, and in another about eight.

Then the draining during the 10 years had gone on partly during each year?—A certain portion in every year, till within the last year; nothing was done on any of the farms during the last year.

Do you speak of such cases as those as exceptional cases, or do you speak of them as common?—I could speak of more, but I have not heard of anything like that upon so large a scale.

Is it not the rule?—No, certainly not.

Then those are the exceptive cases?—They are the exceptive cases.

As a valuer, do you take any notice of the dilapidation of the farm?—I have had a case of that kind, where we have had a very considerable matter left to arbitration; I was an arbitrator upon the point, and a most extremely bad case it was.

Should matters of that kind be set off against any expenditure of the tenant?—As a matter of course where there is a dilapidation I consider that would be a set-off in balancing the account.

At present, unless the tenant holds under a lease with covenants, he has great difficulty, if the land is in a bad state of cultivation, of settling the question of dilapidations of the land?—Yes, it is so ill-defined, and so few people entertain the same opinion about it, that there is always a difficulty about it.

In your experience as a valuer, have you often seen farms given up in very bad condition?—Yes, I have.

And very frequently no recompense has been recovered?—Yes, very frequently.

Are there as many cases on that side of the question as where parties may have had their rent raised unfairly?—No, I think that is the other side of the question; though many leave who have no notice taken of dilapida-

tions, the complaint is, that there is a want of a better knowledge of the rights of landlord and tenant.

That is an exceptional case on both sides, and not the rule?—Yes, perhaps so.

In your judgment, do you think a tenant ought to be paid anything beyond the capital he has outlaid, fair trading interest for the capital laid out, and a sinking fund to get his capital back again?—No, that is the test and the basis of the calculation.

That would be the fair way to reckon this matter?—Yes, that is generally the way we have estimated.

Is there anything in your judgment that prevents a landlord, having the fee-simple interest in land, willing to grant security to his tenant, from being able to give proper security if both parties agree?—No, that is the very best method if you can agree to do it.

There would be an advantage in a law over an agreement of that kind?—An agreement might be, of course, entered into, both parties being willing to make it, and taking the locality it must be better than a general act, taking the general system of the country; they might adapt it to the particular locality.

In your knowledge many landlords from having limited interests in the land cannot give their tenants that advantage?—That may be the case; I have reason to think it is so.

Persons having only a life interest in land?—Yes.

Would it be a great improvement in the law, in your judgment, that persons having such limited interests should have power to grant security to their tenants for a limited number of years?—Yes.

That would enable many agreements felt to be beneficial to be made?—Yes, I think so.

Is guano used with you much?—Not to any great extent; it has been on some estates where the landlord has encouraged the tenant to make use of it, but not generally so.

Has that received at the hands of the valuers any judgment as to the number of years it is to extend over?—No, I think not.

You think it is not sufficiently used?—No, it is not.

In your county, without any tenant-right, marling has been carried to an extent even to be injurious by your forefathers?—That was years ago; I am only speaking of my own description of soils; there are soils I should be glad to get done now, but it is too expensive, the carriage is so heavy, to move it from place to place.

The old marl pits about the country show that has been pretty extensively used by those that have gone before?—Yes.

Mr. COLVILLE.] You say security is desirable for the tenant?—Yes.

How do you propose to get that?—That is a question I am not capable of answering.

Do you think legislative interference desirable?—Yes; I think it is absolutely necessary.

Is it not the fact, that voluntary tenant-right is creeping in in your neighbourhood?—I do not know that it is, further than this, we have been endeavouring, upon calculations, to try and make some alterations where we have felt there has been some evil.

Have you any relations living near No-Man's Heath?—Yes.

Is not it notorious, that a gentleman there is giving very extensive tenant-right upon his estate?—I do not know it personally.

Is not it notorious, that voluntary tenant-right is given there on one of the estates to a great extent?—No, I have not heard it. I suggested it at the time that my relation took that farm; I went to value for him there; and I suggested to him some alterations in the system; but there are, I believe, some of the landlords in that neighbourhood now acting upon a very liberal scale, that

I have reason to believe; indeed, I could speak to that particularly. On that farm of my brother's they have been met extremely well.

Where is that?—Near No-Man's Heath.

Then you have heard that tenant-right is creeping in in that way?—Yes, with the liberal landlords; but you cannot compel them if they will not.

As other landlords see the advantages of tenant-right, will not it extend, do you think?—To a certain extent.

You are aware that it has done so in Lincolnshire?—Yes; it has been a kind of tenant-right for many years.

Is there any difference between Warwickshire and Lincolnshire?—Lincolnshire is, I consider, rather an infant in comparison with Warwickshire; they established a better tenant-right there at first; I know the system is there to be paid for manure, and other things the same as in some parts of Nottinghamshire; I believe it is generally allowed there, and it would be a very good thing if introduced in our neighbourhood; the difficulty is in doing it without compulsion.

Have you any leases in your neighbourhood?—Scarcely any.

Evidence of Mr. JAMES HARDING, of Waterson.

CHAIRMAN.] You are a practical farmer, residing near Dorchester in Dorsetshire?—Yes.

What extent of land do you occupy?—Upwards of 1,000 acres, nearly 1,100 acres.

You are secretary to the Dorsetshire Society?—I have the honour of being so.

Does your land lie on the hill?—On the hill; I have a great deal of chalk land: mine is a variety of kinds, some is very strong; I have a variety of soils, some light sand.

Mr. SOTHERON.] How much down have you?—I cannot here state the exact number of acres; I suppose, at a rough guess, upwards of 400 acres altogether; I occupy two farms.

That is 400 out of the 1,100?—Yes, I lease that with sheep.

CHAIRMAN.] What is the time of entry upon farms in Dorsetshire?—There are various times of entry, but it is generally Lady-day.

When a new tenant comes in at Lady-day, who takes the following wheat or barley crop?—It is generally taken by the outgoing tenant, unless by some special agreement; it is valued on the ground, and taken off; it is generally worked off by the outgoing tenant.

To whom does the manure belong?—To the incoming tenant generally.

The incoming tenant takes it, whether made with oil-cake or whether it is mere straw and water?—Yes.

Is there any compensation for improvements to the outgoing tenants in Dorsetshire?—Not that I am aware of.

Nor for the purchase of artificial manure?—Not that I am aware of; I never heard of any.

Do you think that if compensation were given to the outgoing tenant for various kinds of improvements that the Dorsetshire farmers would be disposed to avail themselves of it?—Yes, they are doing a great deal now, and I have no doubt they would still do more if such was the case.

Is not chalking one of the principal means of improvement in your part of Dorsetshire?—There is a great deal of chalking in our neighbourhood.

What is the cost per acre of that?—There are prices according to the depth and situation; I think the fair

average would be, to take one with the other, say 40s. an acre; it could be done well for 40s.; there are various ways of doing it; we occasionally get it done for 35s.; of course it is in some measure according to the quantity you put on per acre.

Is there a great deal of land that would be benefited for a considerable time by chalking in Dorsetshire?—There is a great deal of land from which you can scarcely get any crop at all until it is chalked.

Should you be glad to find employment for the Dorchester labourers?—Yes, it is a very great advantage to the labourer, because it employs him when work is very scarce; it is generally done in the winter months.

I suppose the farmers in Dorsetshire find a difficulty in employing their men in winter?—When corn is low, labourers have more difficulty than when it sells well, to get work; our poor-rates have been very large when things are low.

Do you think it would be very desirable to give farmers protection for the outlay of their capital?—Yes; I am not one of those that want to go to the extreme; I think a just protection would do a great deal of good. I here mean protection to the capital of the tenant's outlay.

Do you think that from the loss of protection against the foreign producer, it is particularly desirable, looking forward to the possible contingency of low prices, to arm the farmer with the means of meeting low markets by increased produce?—Certainly. I think this one cause why the tenant should still continue to lay out capital with some chance of saving the capital before invested. It is generally the practice of gentlemen to cry out "Cultivate! cultivate!" Farmers say, "We do cultivate; we are anxious to cultivate; we will cultivate; but we must have some protection now for the money we lay out."

You can state that the farmers say so?—Yes, they do indeed, and I think with just reason under present circumstances.

Is that the general opinion of the Dorsetshire farmers?—Many I have consulted are of the same opinion, that they ought to have protection for capital expended, and some means of making sure that by having notice to quit, that capital shall not be left behind unrepaid. There is now no law to enable us to claim that money which has been expended on the farms we occupy; therefore upon any sudden notice to quit, or anything of that kind, that which I am alluding to would happen. For instance, on chalking, if a person lays out £100, from that perhaps he does not derive benefit as a farmer occupying the land under three years, a very little benefit at all; the fourth year he does, and if it goes on for some years after. It would be a very hard case for the farmer, supposing anything occurred, to have notice to quit before those three years; that he should leave all that he has expended, say £100, for the incoming tenant, and yet for which he would have no claim as matters stand at present.

Has any case of that kind arisen within your knowledge?—I cannot doubt that such would be the case. Suppose, again, I chalk 50 acres the second year, that would be £100; that would be £200 which I should get no benefit from if I were to quit that farm, if within the three years I had notice to quit.

You mean that chalk in your neighbourhood is not found so beneficial at first as it is after two or three years have passed?—Chalk generally must take some time to get mixed with the soil before we get any benefit to any extent or any remuneration from it: I should say the third year.

What plan would you propose to remunerate the

outgoing tenant for chalking?—If I take a farm I consider my money is laid out for the three first years; that is the first year's chalking. I go on one, two, three, and four, and then drop to landlord one-fourth; the next year one-fourth, the next year one-fourth, and perhaps you would be chalking the following year in the same rotation; then go from the second year one, two, three, four, dropping to landlord one-fourth, and every seven years the landlord would be free: still you are going on with the improvements.

Mr. HENLEY.] It would be thrown over seven years to be paid the full amount for the first three years and be proportionately deducted after?—It would fall regularly in its turn from the first year.

Mr. MOODY.] Do you renew your chalk on the same land?—Not for some number of years.

CHAIRMAN.] The benefit continues 20 years, does not it?—It is considered to last for 15 to 20 years. I have seen myself, where part of a ground has been as different as possible, which had been chalked some years before in a square, and after chalking all that round and about, three to four years after has made that ground as good as the other, although before it would not bear so much by a third.

You consider that a tenant's claim would be fully satisfied at the end of seven years, and that the landlord would derive a benefit more or less for the other 13 out of the 20?—Yes, and would have nothing to pay after the seven years on such improvement made the first year.

On those terms you think the farmers would be disposed to make improvements?—I should for one be glad to do so, and I know many others would also, although we continue to do so without such law.

To turn to another part of Dorsetshire, towards the west, is not there a great deal of draining wanted there?—In the Blackmore Vale.

And there, you think, draining would be very beneficial?—Yes.

Would it tend to increase the produce?—Yes; it is very generally carried on more or less. I do not understand much about draining; I live in a part where no drainage is required.

Is there any other point you wish to mention to the committee?—No, nothing more than respecting buildings. I am of opinion, where the tenant is obliged to put up buildings at his own cost, that certainly he ought to have it in his power, if he should have notice to quit, on leaving, to be remunerated by the taking of those buildings by the incoming tenant or landlord, or have liberty to remove them himself.

And you think there are farms in your part of the country where improved buildings are necessary for improved cultivation?—There are farms that have not got the number of outbuildings for stock and implements which are desirable to carry on the farming with advantage. With respect to tanks, it is a pity to see in the old farm-yards the essence of manures running away. I think in regard to building tanks, if the landlord will not do so, the tenant ought to be allowed to do it; and when he leaves, it is very reasonable that he should have a remuneration, that he should have the value of them when he leaves. It is a substantial improvement, and it is improving the property for the benefit of the landlord, as well as for that of the tenant. It would be very fair for the tenant to have remuneration for such.

Mr. MOODY.] How long have you occupied your farm?—My father's occupation and my own has been upwards of 50 years on Waterson Farm.

You stated it to be 1,100 acres?—That is with another farm I have since taken, since my uncle's decease. I have occupied Waterson between eight and

nine years since my father's death; I followed my father as tenant.

What was the proportion of the down land to the tillage when you first came to the farm; you say it is reduced now to 400?—That is on the two farms.

Speaking of the 1,100 acres altogether?—Where I am living, at Waterson Farm, full 140 acres have been broken up; I have got more than 200 acres of pasture now on that farm, my father and myself have broken up to the extent of 140 acres, a great portion of which was furze.

Did you do that unassisted by the landlord?—Yes, which I should have to give up in grass, or in preparation for turnips.

Must you lay it down again?—Or give up other land in proportion.

You have broken that land up with the consent of the landlord, of course?—Yes.

And were you at all assisted by him in the expense of that?—No, only the first banking, plants, and fence.

Then you considered yourself repaid by benefit of its conversion into tillage?—It was not so valuable before as since it has been broken, certainly; it has been chalked.

Do you hold on lease?—No, by the year.

Lord Portman is a considerable owner of land in Dorsetshire; are you aware that he has adopted a new lease lately?—My brother-in-law has got a large farm under his Lordship; I believe he has taken it on lease; I know nothing of the purport of the document.

You do not know that in his new leases his Lordship has introduced protection for the outgoing tenant?—I am not aware of that; if I were so I would state it; I know my relation has taken a farm by lease, but what the nature of that lease is I do not know.

Mr. BURROUGHES.] Are there any agreements in which a compensation has been made for chalking in the manner in which you propose it should be done by legislation?—I have not seen any such agreement.

Would it not be very easy to make an arrangement by agreement to allow remuneration in the manner you have described for chalking?—I think it is very simple so to do, and I think other outlays by tenant might be carried out on the same scale, as to bones and guano, and the tenant going on with improvements. The same with fences and orchards.

Could not that arrangement you allude to be as well done by agreement as by legislation?—It could be done; but I suppose there are many landlords who may not feel inclined to do it. I consider that remuneration for unexhausted outlay by tenant would be justice between parties; it is taking no advantage of the landlord.

The question was simply whether you see any difficulty in the way of making that arrangement by private agreement?—Yes; I expect there would be great difficulties in making it the general rule, at all events.

Mr. HENLEY.] Would there be any difficulty besides that of the landlord not choosing to do it?—There ought to be none.

Do you know of any difficulty except that either one party or the other would not be willing to make such an agreement?—I know of no reason besides that; it is justice; it is, in my opinion, taking no advantage. I am not one of those who wish to see advantage taken; I only want fairness between landlord and tenant. I have the honour of holding under a good landlord.

Have you yourself asked, or do you know of parties asking to have agreements in the way you describe?—No.

Whether the landlords would grant them or not, you cannot tell?—No.

Why do not the farmers ask for them if they would be of so much advantage?—That is very true. I do not know of any reason why, except, perhaps, not thought of before; farmers do not like to ask too much.

Where it is for the mutual advantage, is it not a strange thing that the farmer cannot ask a plain question of that kind; you say that in your own case you have gone on from father to son, without any agreement from year to year?—Yes, no agreement of this sort.

And could not you ask your landlord, seeing that this is so great an advantage as you say, to come to some sort of arrangement?—It is a sort of security against any sudden notice to quit. If I laid out in the last year or two the sum of £300 and I have no benefit from it, and the incoming tenant has the benefit, it is but justice, I think, that I should have compensation.

It is a good reason why you should have it, but what is the reason why you do not ask the landlord for it?—Because, I suppose, I do not wish to be the first to do it. With good landlords it is not so much needed.

Should you like a law to settle the rent between the landlord and the tenant?—I should like a law to make it more easy to pay.

Should you like a law to do it?—I am afraid that a time will come when we shall have greater difficulty, and for that reason I think we ought to have protection on our outlay.

Would you like a law to be made to settle what rent the tenant was to pay and the landlord to receive?—I do not see how it could be done.

You would sooner have that settled between the farmer and the landlord?—Yes, most certainly.

Why cannot you now go and settle all these questions yourselves?—Because there would be difficulties unless it was a general thing, and then we should be about the same.

You say that you have not asked the landlord, and you do not know any one who has asked the landlord to give a six or seven years' security?—Yes, I repeat that. Since I received the letter to come here, this plan has struck me as a very simple plan; I had not thought of it before.

Mr. SOTHERON.] Is not it the fact, that with a liberal landlord you do not think it necessary; and that where you have not a liberal landlord, you do not like to go and ask for it?—That no doubt would be the feeling of many.

Is not that the reason why it is not generally done?—I cannot give any reason why it is not generally done. Until I received the letter, within this week, it never struck me about looking so much into it as I have since.

Mr. BURROUGHES.] Has that suggestion of yours originated within the last week or within the last month?—Within this last week.

Then your idea of compensating for chalking has suggested itself to you since you received the letter summoning you to attend this committee?—Yes; and I think with respect to manures, they may be brought up in exactly the same scale with ending in a less number of years.

CHAIRMAN.] Does that paper in your hand contain a calculation for the remuneration for chalking?—Yes; it is a suggestion of my own; and artificial manures may come under the same law.

Mr. SOTHERON.] Have you put into figures the substance of what you have told the committee about the number of years for compensation?—Yes; and on the same principle I think the manures may be put under the same law.

Mr. HENLEY.] Do you apply the same principle to all manures?—Yes, when bought.

Evidence of Mr. THOMAS CARPENTER.

CHAIRMAN.] You were lately a practical farmer near Chipping Norton, in Oxfordshire?—Yes.

What is the time of entry in Oxfordshire?—Michaelmas generally.

Does the incoming tenant pay the outgoing tenant for acts of husbandry?—He pays for the ploughings upon the turnip land, and generally takes a portion of the hay.

At a spending price?—Yes, at a spending price.

He pays for the clover seed sown, with the barley?—Yes, the seeds of course.

Mr. HENLEY.] You are speaking now of the district round Chipping Norton?—Yes, I am speaking now of the district round Chipping Norton.

CHAIRMAN.] To whom does the dung belong?—To the incoming tenant, that which is made from the last crop.

In whatever way it is made it belongs to the incoming tenant?—Yes, the fold-yard manure, of course.

Is any compensation given for any improvements made by the outgoing tenant?—There is very seldom anything of the kind; there has been an instance of that sort.

Of what nature were those cases?—Compensation for bones and guano, when I left my farm.

Generally speaking, there is no compensation?—I never heard of another instance.

Nor for draining?—No.

In your opinion would it be desirable that such compensation should be given?—I think it a very desirable thing indeed; it would very much improve the cultivation of the land.

Taking the different heads of improvement with which you are familiar, in what way do you think the farmers in your neighbourhood would avail themselves of it, if there were binding clauses for compensation?—I think it would be a general thing to use bones and guano for the turnip crops; ours is a very light soil, and does not grow sufficient to manure itself. My custom always was, during a great many years, to sow about one-third of my fallows with artificial manure. Supposing I fallowed 70 acres, I did 24 or 25 acres with bones or guano.

Would that tend to increase the crops of turnips very much?—Very much indeed.

You are not far from the Cotswolds?—No; it is very much the same description of land.

Is the turnip a very casual crop unless it is helped in this way—Yes, very; by buying artificial manure for one-third, we could manure the other part well.

You dunged a part of your turnip land?—Yes.

And bought bones for the rest?—Yes.

If the farmers were encouraged to buy artificial manure for the turnip land, would it tend to increase the production of mutton in the country?—Yes, very much.

Mutton is very scarce now?—We should improve the quantity of feed, and that of course would make mutton.

And it would lead to an increased production of corn?—Yes, it would increase every crop.

Do you know that part of Oxfordshire which requires draining?—Some round our part does require draining.

Would that land be very much benefited by the draining?—There is land there that requires draining; it is the foundation of farming, I fancy.

Should you keep that land in grass or break it up?—It would depend upon the nature and locality of it.

Is there a great deal of grass land that might be put under the plough with advantage?—Yes, it might be broken up with advantage.

Therefore if the tenant had compensation for draining and was allowed to break up that grass land he might give a considerable amount of employment to the labourers in winter?—No doubt of it.

In some parts of Oxfordshire it is difficult for the farmers to find labour in the winter?—There is too much labour in some parts of Oxfordshire.

Would the draining and breaking up of grass land tend to remedy that evil?—Of course it would, in a great measure; it would increase their employment.

Would it be desirable to give a tenant power to put up additional buildings where requisite, and receive compensation for them?—My opinion would be, if a tenant put up additional buildings, that he should either be allowed to remove them or be paid for them.

Would it be a desirable thing?—It would be unfair to compel the landlord to take any buildings.

Then if a tenant put up buildings without the landlord's consent, you think that he should have the power either of removing them or being paid for them?—Yes.

If he put them up with the landlord's consent, would not it be desirable that a long time should be taken, within which the tenant should consider himself repaid?—Yes, most clearly that would be so if it were done with the consent of both parties.

Is there any other point you wish to mention to the committee?—No; not more than with respect to the use of bones, what time they should extend.

What period would you give for bones?—For bones, four years; and guano, three; my system was two quarters of bones and two quarters of wood-ashes to the acre, and then take off four bushels of each every year.

You consider guano lasts three years?—Yes, and bones four.

Have you seen the effect of guano last so long as that?—I have seen very good turnips grown from guano; and then by feeding turnips off you will receive more in the next crop, an increased quantity of turnips; would increase the barley and seeds both.

You do not consider a turnip crop to be a paying crop in itself, but you look to the greatly increased productiveness of the land arising from a good crop being fed off?—A turnip crop would not pay the expense; but by the increased manure put on, the barley crop would pay it. The guano is not so lasting as the bones.

Mr. HENLEY.] The period that you have spoken of for bones and guano was by arrangement made when you quitted your farm?—Yes.

That, in your judgment, is what is fair between the parties?—Yes, I think so. If I were entering a farm, I would be very willing to pay it rather than not have the manure put on.

Guano has been used but for a few years, and bones not much longer, in your neighbourhood?—Bones have been in use longer than guano.

For what period have they been in use?—Bones have been in use more than 20 years.

Do you know whether any other instances have taken place of arrangements being made in your neighbourhood of the nature you made when you quitted your farm?—No, I do not know of any.

Whether that has been done or not, you do not know?—I never heard of any.

Have you been engaged in valuations?—Yes, as to acts of husbandry, crops and stock.

Ought the breaking up of grass land to be compulsory by law, or ought it to be left to the parties to do as they please in the matter?—I think it ought not to be compulsory. There is one observation I wish to make. I think it is a great injury to the cultivation of the soil

for gentlemen to employ people to value land that take a per-centage upon the rent.

It is a bad mode of paying the valuer?—Yes, it is a bad mode of paying the valuer. I consider he is only a yearly valuer, and if you get a yearly steward and a yearly tenant, the one gets all he can out of the gentleman's pocket, and the other all he can out of his land; that is one of the things we want to get rid of.

You would not hold to valuers not being paid at all?—I should rather not have those sort of men. I know very good men gentlemen's stewards that do justice between landlord and tenant; I do not know any of those men that take so much for valuing a farm that do it.

Mr. SOTHERON.] Is it the stewards whom you propose not to be paid by a per-centage?—The land agent; I think it is a bad custom for him to be paid a per-centage.

Your observations do not apply at all to the stewards?—No, I mean to make no observations against the gentlemen's stewards; they generally do justice.

CHAIRMAN.] You are understood to say that bones have been used for the last 20 years in your neighbourhood?—Yes.

But that you are not aware of any instance in which any compensation has been made to the outgoing tenant, except in your own case?—Yes, just so; I have not heard of any other.

Therefore nothing that can be called a custom has grown up in those 20 years of allowing the outgoing tenant for the bones?—Nothing whatever.

And as a practical man, you are of opinion, that if allowance were made for bones, the use of them would be increased?—I think they would be very extensively used, and, as a farmer, I should be always very glad to pay on entering a farm in the way I state.

You would rather pay for entering a farm in a good condition than come into a starved farm gratis?—Very much rather. It is the same thing as if I should take a new coat at a fair price, or have one out at elbows for nothing.

When you find a farm out of elbows, however spirited your outlay may be, it takes you a long time to get your money out of it?—Yes.

In the meantime you are losing your money?—Yes.

May 15th, 1848.

MEMBERS PRESENT.

Mr. E. Denison	Mr. Newdegate
Mr. Henley	Mr. Pusey
Sir C. Lemon	Sir John Trollope
Mr. Moody.	

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of Mr. HENRY HIGGINS.

CHAIRMAN.] You are a practical farmer residing in Hereford?—I am.

What extent of land do you occupy?—The whole of the land I have under my management is now about 870 acres. I have cultivable land over 600 acres.

What is the time of entry upon farms in Herefordshire?—Chiefly Candlemas Day, the 2nd of February.

What has the outgoing tenant to receive from the incoming tenant?—Nothing whatever.

Are there no acts of husbandry to be paid for?—None.

Will you explain what arrangement is made for giving up farms?—The notice to quit is given on the 1st of August, six months previous to the 2nd of February; then all acts of husbandry for the crops of the succeeding year are finished; that is, the farmer of course has

all his turnip fallows and his wheat land pretty well prepared. His lime and his artificial manure, and the chief of his manure in fact, ought to be in the land by that time, the wheat crops and turnips and everything else; the landlord can then of course take the benefit of all that if he chooses, which I believe is always done in the event of a tenant's quittings.

Does not the incoming tenant come in to plant the wheat?—No, the outgoing tenant plants the wheat as his outgoing crop.

Mr. HENLEY.] There is the awaygoing crop?—There is always the outgoing crop of wheat.

CHAIRMAN.] Then are the awaygoing crops of wheat and barley valued to him?—There is nothing compulsory about it; it is a voluntary act; the bargain is always made between the outgoing tenant and the incoming tenant.

What is the usual course?—That is the usual course.

Is it the usual custom that it should be valued to him?—In general it is, but it is optional.

What do they generally agree upon?—Frequently there is a great deal of contention about it; it is a matter I have always found fault with. In my opinion there ought to be an arrangement with the landlord, compelling the outgoing tenant to sell, and the incoming tenant to purchase. I have seen great trouble originate from the want of this stipulation, because it is in the power of the outgoing tenant to reap all his corn, and not thresh until after Candlemas; if he chooses he has till May to end his crop, consequently he may prevent the incoming tenant having a bit of straw; you may judge the inconvenience.

Mr. HENLEY.] He has the May twelvemonth after he quits to end his crop?—Yes.

What crops does he take; or does not he take anything but the wheat?—He takes nothing but the wheat.

CHAIRMAN.] You say, when the tenant receives notice to quit there are some artificial manures already in the ground?—Of course the artificial manures are already in the ground, or ought to be, I consider, in a well-managed farm.

And does the outgoing tenant get no compensation for them?—None whatever; I never knew a shilling paid in my life for that.

Is there any compensation for draining, or any other kind of improvement, to the outgoing tenant?—No; those are special acts between them. The landlords have some few of them been in the habit, of late, of allowing the tiles, the tenant doing the workmanship; but very little of that has been done until within the last few years.

You say that the landlord allows the tenant tiles, but you are not to be understood to say that the outgoing tenant has any claim for putting in those tiles, or for any draining, from his successors?—None whatever; if he does it, he does it at his own expense.

What is the usual term for which farms are held in Herefordshire?—Twelve months only.

Are there any longer terms than that?—No, I know of very few beyond my own. Leases are the exception, not the rule; I do not know of any lease for 20 years but my own.

Sir C. LEMON.] You do not know of any lease for 14 years?—There are no leases for 14 years; or at least I do not know of such a one.

CHAIRMAN.] Why do you think there are not more leases given in Herefordshire?—I have always attributed it to game preserving, in a great measure, and electioneering movements; I cannot lay it to anything else, myself. My ideas have always been, that the landlord would be consulting his own interest if he granted leases or compensation clauses.

Is there a feeling of insecurity on the part of the Herefordshire farmers as to the outlay of their capital in the improvement of their land?—A very great doubt indeed.

Is that a just doubt?—It is the general feeling.

And it is a just feeling in your opinion?—Yes; I consider it so.

Why do you consider that to be a just feeling?—I consider that it is testing a man's interest and honour too much. It is throwing men into collision with each other, and therefore it frequently is a temptation to landlords, after seeing very great improvements made in their properties, to raise the rents, or at least to tell the tenants if they will not submit to it that they must submit to a valuation; and consequently I consider the man who farms the best is exposed to the greatest danger of having his rent increased.

Have you known such valuations take place?—Certainly; I have known notices on the same property given three times in six years.

Do you mean that there have been three valuations in six years?—Yes; I have known three valuations in six years.

On the same farms?—On the same farms. There are some few exceptions. I am happy to say we have some good landlords.

When have those valuations so taken place?—Within the last six years.

You consider, that although landlords in general are disposed to deal honourably by their tenants, yet such cases as those produce a considerable feeling of insecurity in the minds of the farmers?—Yes, a distrust, particularly in the event of a change of proprietors; then a person is very insecure. I may be perfectly safe under one landlord occupying an estate as tenant at will, but in the event of the property changing hands it is too frequently the case that that property is put under survey by the next owner; and then in all cases, of course, the man who has put the best face on his farm is exposed to the greatest danger of having his rent raised; of course the valuer values as he finds, without looking to the question of whose property it is that has put the face on it.

You have no doubt that this feeling of insecurity prevents the farmers of Herefordshire from cultivating their land so highly as they otherwise would?—I have no doubt of it.

If you were an in-coming tenant should you have no difficulty in advancing ready money to pay for the charges that might be made as compensation for improvements by way of tenant-right?—I should much prefer it; I should much prefer paying for the spirited acts of my predecessor, rather than to have a worn-out farm and to wait six or seven years to get it into cultivation; because it is a work of time. We cannot set about it and build up our improvements like we could machinery; it must be a work of time, and of a regular course of cropping.

And the committee are to understand you to say, that as a man of business, you would rather pay a fair sum out of hand, to have a good farm in good condition, than take a starved farm?—Much rather. I would have the acts of my predecessor submitted to arbitration, to men of business, to say what it was fair for him to receive and me to pay, and then I should get my return quicker.

You consider that the quickness of the return will more than remunerate you for the money you may be immediately out of pocket?—Yes; I could mention an estate that, owing to the badness of its condition at the commencement of the present tenant's term, he has sunk at least £1,500 in about two years in one way or another; the landlord in that time has also expended £800 in

draining, for which the tenant pays 5 per cent., and is glad to do so.

How long do you think it takes a man who has entered upon a farm thoroughly out of order before he can get full crops from it?—From five to seven years; I say seven before he can get round a farm and put it in any thing like condition.

And those years would be losing years to the farmer however spirited he might be in his outlay?—It must be so. I should think it must take from five to seven years; it is not one good meal that will make a poor ox fat.

How would the landlord be affected by this sort of charge upon his farm, when he had to look out for a tenant?—It ought to be a matter between the in-coming and out-going tenants.

And you think the landlord would be able to find an in-coming tenant able to pay the amount?—No doubt of it; I have never had but one opinion, which is that the landlord and tenant would be mutually benefited as well as the community at large. Surely if there were a premium offered for good cultivation there are few men who would not endeavour to obtain it. I think the system of compensation would always ensure farms being left in good condition, which is quite the reverse under the present system.

At present tenants are disposed to take too much out of the land?—Of course when they are about to quit, if they have farmed freely and made great improvements they ought to derive the benefit.

And you are of opinion that this charge for improvements by tenant-right would not have the effect of deterring competition in taking farms?—No, I do not think it would; but I think it would have this good effect, it would beat the mere adventuring farmer out of the market, and a gentleman would be more disposed to take a man of business and of capital capable of developing the capabilities of the soil. With the present system it is too frequently the case that the man who will give the greatest amount of rent is taken in preference to the man who understands what his business is, and gives a fair rent with a prospect of a permanency.

You think it would prevent farmers undertaking to pay rent which it was impossible for them to continue paying, but that it would encourage men of business and of sufficient capital in competing for such farms, and doing justice to them afterwards?—I do; I have always had that opinion; and I think that gentlemen would then be looking for different men to what they do now. I have always thought it would bring about the greatest revolution in agricultural improvements of any-thing that could take place.

You mean to say it would secure the application of those improvements which are well known to farmers, but which under the present state of insecurity for their capital they do not feel justified in carrying out?—Certainly; everything they do now they do grudgingly, or at least they appear to do it grudgingly.

You think the farmers know well enough how to farm, but that they do not feel sufficient security for carrying out their knowledge to the full extent?—There are exceptions, certainly; there are men who do not do as they ought to do, quite. I look at it upon the broad principle; there are men of course whom nothing would induce to make improvements, but they are wearing out very fast, I think.

Will you state to the Committee, from your knowledge of Herefordshire, what are the sorts of improvements that would be made by the farmers of that country if they had sufficient security?—I think the cultivation would be much improved; farmers would be more spirited in using artificial manures, and give their cattle and sheep a better quality of food, which would of course greatly benefit the quality of the manure and in-

crease it also ; nor do I think, if security were offered, the fences would be left in the slovenly way they now too frequently are, nor would there be so much waste lands about farms as at present.

What sort of waste land do you speak of?—That which is under the hedges ; there is a great deal of waste land in that way.

Is Herefordshire a county that requires much draining?—A great deal.

There is a great deal of land undrained in the county?—Yes ; I should say three parts of it would be benefited by drainage.

Is there much arable land which, if it were drained, would be capable of carrying stock?—Yes, the greater part of it ; for instance, my own farm.

Is there much arable land that is now waste and undrained, and incapable of carrying sheep, which could grow root crops if it were drained?—Certainly ; my own farm is an instance of that. When we commenced draining it, some parts were so wet that a cat could scarcely go across it at times ; but since it has been thoroughly drained it has altogether changed the nature of the soil, which enables me to grow pretty good crops of turnips.

And what do you do with them?—Eat them off the land, and find benefit from it.

Do you keep many more sheep than your predecessor did?—I have not held the farm sufficiently long to test its capabilities as to what flock of sheep it will carry. I hope to have it in the four-course system, the same as my last farm, and expect I shall succeed.

You mean that you are a young tenant on this particular farm?—Yes ; I have been at farming all my lifetime ; I mean that I am a young tenant to this property.

Can you form any calculation of how many sheep you could keep upon this farm, in comparison with what were kept before?—I cannot say ; I do not wish to speak on that head ; it may be unpleasant to my predecessor for me to mention what I can do more than he did on this particular farm ; but of course it is a great advantage where a farmer can finish off his sheep on turnips in many ways.

You are a breeder of Herefords?—I am.

You do not want to increase your stock merely in sheep?—I wish to increase it in cattle also. I am feeding sheep on turnips, which is a thing that I believe has never been done there before, on the tillage.

Do you think that if the system of tenant-right were carried out in Herefordshire, there would be an increased production of meat there?—I have very little doubt about it, of beef and of mutton too ; and I think men would go to work with more spirit. There is now a kind of suspicion and doubt about making improvements.

Has the wheat suffered this year upon the undrained land in Herefordshire?—Very much. I passed yesterday two fields of wheat, and I know that land, if the wet were got out of it, is as good as any we have in the county.

Do you think a quarter of wheat an acre more could have been grown on such land this year if it had been drained?—No doubt about it. I do not consider eight bushels an acre is a very great deal to grow with land thoroughly drained. There is land in the county that is now not growing 13 bushels an acre that would grow double that quantity if it were drained. I think it is a very great question whether the crop of Herefordshire, take it altogether, would average 18 bushels an acre.

What do you think it would average if it were drained and well farmed?—That is a difficult question ; but I am sure the produce may be very much increased ; we have a large proportion of inferior land, which would very much reduce the average of the county.

What should you say would generally be the increase of the growth of wheat per acre in Herefordshire if the

land were well drained?—If the land were thoroughly drained there are districts in Herefordshire that I think I am speaking within compass when I say that the quantity may be doubled ; I mean that there are districts in the county that would do that.

You quitted your former farm partly from the want of security, did you not?—I did, and left one of the most kind and indulgent landlords possible, because he could not grant me security ; he was only tenant for life.

Your landlord was disposed to grant you compensation ; but from the land being in settlement he was unable to do so, and therefore you felt yourself compelled to quit his farm?—Certainly. The gentleman who was to inherit the estate after my landlord's death was a farmer himself, and I knew very well that should any thing happen to my landlord this young man would come to farm the estate himself ; therefore when I knew he was to inherit it, I looked out immediately, because I knew he would be on my heels.

Do your buildings require improvement in Herefordshire?—Yes ; buildings require great improvements in Herefordshire ; our buildings are very bad indeed generally speaking ; they are ill arranged, and very dilapidated, a great part of them.

Do you think it would be desirable, where the landlord has not the means to make all those improvements on buildings, for instance, out of his yearly income, to empower the tenant to improve the buildings on proper security?—I have not a doubt about it.

Do you think the present state of the buildings is an obstruction to improved farming in Herefordshire?—Certainly, greatly so ; for with the present arrangement of our buildings, it is impossible for a man to produce the capabilities of his soil ; his manures cannot by possibility be made properly ; we have scarcely a spouted yard in our county, with the exception of my own, and two or three others I could name.

And you think that though all farmers would not be able to lay out money on building, yet that there would be a fair number to be found who would be disposed to invest their capital in that way, under proper security?—Yes, I think they would ; and as I do not wish to speak one-sidedly upon the question, I think there are many little things that farmers may do that they do not do. I must confess they are rather wise about them ; whether it is from want of security or not I do not know, but it is the only excuse that can be made for it.

Looking at the thing as a whole, have you any doubt that the legalization of tenant-right would encourage the farmers of Herefordshire to invest capital of their own on their land ; one in one way, and another in another?—That is my firm belief, certainly.

Mr. HENLEY.] What part of Herefordshire do you farm in?—I farm six miles beyond Hereford.

Between Hereford and Leominster, and that direction?—Between Hereford and Kington.

You stated that the buildings generally wanted spouting?—Yes,

Is that the main objection, or are they short in number as well?—They are both short in number, ill managed, and, generally speaking, very inconvenient ; most of the fold yards are on a slope, running all the best parts of the manure into the adjoining ditches ; of course this would be much obviated if the buildings were spouted.

Of course those spouts, if they were put round the buildings to take the rain-water away, would be movable, and would not be the property of the landlord?—You could move the spouts, but you must not move the brackets.

The main expense is in the spouts?—The brackets come to a great deal of money, the bracketing and fixing.

If the bracketing was put up capable of being removed, would not that obviate the objection?—That would be an additional expense to a tenant.

Might not the spouts be clearly removed at an almost inconsiderable expense; by screwing up the brackets they might be capable of being removed too?—Screwing on the brackets would be attended with a greater expense.

You stated a case of expenditure of £1,500 on a farm in two years; what was the extent of that farm upon which the £1,500 were so expended?—The extent of land that property was expended upon was about 552 acres; then there was the additional land. I was speaking of the land upon which that expenditure was made.

And the £800 that were expended, was that upon the same extent of land?—That was on the same extent of land. I cannot exactly speak as to the acreage of the drainage, but I believe it was about 250 acres, which were thoroughly drained.

Upon the same farm?—Yes, upon the same farm.

And under the same holding?—Yes, and under the same holding.

In round numbers, what is, speaking generally, the nature of the improvements that the £1,500 has been done upon; has any part of it been in buildings?—No; that the landlord did, and the tenant kept the buildings in repair afterwards.

Has he done the buildings besides the £800?—Yes, principally.

To what extent do you suppose that has been?—I think the valuation was £600 or £700.

Did the landlord find the timber besides the £600?—I think not.

That included every thing?—Yes; when the tenant took the estate it was put under survey; he took it for twenty years on a lease, and he covenanted to keep it in repair; and leave it in repair it was very much out of order, and it was agreed to put it under survey; the landlord chose one surveyor and the tenant chose another; the matter was arranged, and everything was thoroughly repaired.

There being no building forming any part of the £1,500, you mentioned fencing as forming one item of the expenditure?—I wish to correct myself on that point; a considerable part of that amount was expended in building for the tenant's convenience; I know he paid the person who contracted to repair the building a large amount for extras: fencing, stocking up old hedges and trees, remodelling the fields, reclaiming waste land, and artificial manures, with many other matters connected with the farm, has formed this expenditure. The expense of hauling of course forms a large item.

You say there was fencing, remodelling the fields, and artificial manure; was there any other item?—There had been paring and burning,

That is an ordinary act of husbandry, is not it?—It is a very expensive operation.

But it is an ordinary act of husbandry?—No; it is an extraordinary act with us.

It is not the custom with you?—No.

It varies in different places?—The first year the tenant went to this farm he had no corn; there were about twenty acres of beans and about five acres of peas; that was all he had, which did not pay the expenses.

That was because the farm was so out of condition when he took it?—Yes, it was out of condition when he took it; and the season was very much against him too.

The tenant who had gone away took the wheat, did not he?—He had the off-growing crop of wheat, which the on-coming tenant had to pay him for.

This was a farm of twenty years' holding?—Yes.

Was it taken upon an improving rent?—It was taken upon a corn rent; part as a fixed rent and part as a corn rent.

Supposing that the tenant were to go on in the next ten years in the same spirited course of husbandry that he is now going on with upon this farm, would the farm be worth more rent at the end of the ten years?—Of course it would be worth more rent now; that is, it would be valued at more rent now; if it were put under a valuation, I do not consider myself it would be worth more rent. I think that quite the full rent is paid for it.

Suppose the same spirited course of husbandry were to go on, and it were to be valued at the end of the 10 years, would the valuer put a higher rent upon it?—No doubt of it; the valuer values land as he finds it; that is where I consider the harlship, that after a tenant has laid out his money in putting a face upon the farm, that a landlord should be empowered to send a valuer over it and value those improvements, and take the benefit of them.

In your judgment, a valuer would put a higher value upon it?—Yes, no doubt.

In your judgment, what increased value would the valuer put upon it?—I cannot say, men differ so much in opinion.

Would he put 10 per cent. upon it?—Probably he would.

Would he put 20 per cent. upon it?—No, times are fluctuating a great deal; it would depend in a great measure upon the price of corn.

Suppose the times to remain as they now are, and the tenant to pay upon a corn rent, the value would be with reference to the produce more than the price of corn, speaking of 10 years hence?—It is impossible for me to answer that question, men so differ in opinions. It is very frequently the case that a man is brought from a distance to value land.

You say he values according as he sees?—Yes, according as he finds.

What would be the increased value of such a farm in the eyes of a valuer, looking at it as he found it?—Would it be fair of a landlord to take the benefit of the increased value?

The question is not whether it is fair or not, he question is what, in your judgment, a valuer would put upon a farm that has been so treated?—You must allow me not to answer that.

You have stated, in answer to former questions put by the chairman, that a valuer came and put an increased value upon lands and that persons were frequently turned out or obliged to leave, and therefore it is necessary the committee should have what your judgment is upon the increased amount a valuer would put on such a farm?—I am looking principally as regards my own.

Suppose a farm to be in bad condition to be drained and farmed in the most spirited manner for 10 years, what in your judgment would be the difference that a valuer would put upon such a farm?—It would depend upon the state it was in at the commencement; if it was very much out of condition the probability is, he would put 5s. to 10s. an acre upon it.

How much per cent. would that be?—Probably he may put on 30 per cent. in the thoroughly drained land.

In your judgment is the committee to understand that 30 per cent. increase of value is the greatest amount of increase that can be made between a farm out of condition, and when put in the highest state of condition?—No.

What is the most, in your judgment?—I think I could find estates that may be raised in value more than that;

I could find estates that may be increased certainly, to a maximum of 30 per cent.

You cannot go further than that?—There are exceptions of course; I certainly know land that may be raised 50 per cent. by the application of capital.

Mr. E. DENISON.] You stated in your evidence not long ago, that a good deal of land in Herefordshire, if properly drained, would double the produce?—Then it is to be supposed it is all on wheat or corn then.

Of course the land takes its regular turn?—There is land now in the county of Hereford that I believe is literally worth nothing to cultivate at prices. I am convinced there is land in the county that I would not have if it were given me to cultivate as a yearly tenant.

That is not the sort of land you were speaking of, is it?—That was the land that would increase double the crop.

Pretty good land, that is saturated with water, would be more improved by thorough draining than bad land, would not it?—Yes.

Then good land in quality that is thoroughly set free from water, would be the land in which the produce will be more increased than it would be upon poor, cold, bad land?—I would not go to such extremes as that. There is some land now that, as I before stated, is literally worth nothing to cultivate; but I think if the wet were got out of it, it may be made of some value.

But you have just answered the question put to you, that that is not the land from which the greatest benefit would be derived from draining?—No.

You said that land of good quality, but which is starved with water, would give a better return for draining than mere bad, cold land; is it not so?—Good land that is saturated with water of course would be very much benefited by taking the water off it; and my belief is, it is not any use a man putting manure into the land that has a lot of stagnant water in it.

Mr. HENLEY.] Do you think it is possible that any land, by being in a wet state when it is commenced with, and being highly farmed for 10 years, may be made worth 50 per cent. more rent?—Land that is in a very bad state may, I have no doubt of it.

The question is not whether it is fair to the tenant to pay it, but whether you think the valuer would be likely to put it?—Yes.

If it were to go on 10 years more, at the end of the 20 years would it be worth any more rent?—No, I should think it would be got pretty nearly to the top of the tree then.

Suppose a tenant being about to run out a 20 years' lease, would it be his interest to pay the 50 per cent. increase for the next 20 years, if he proposed to renew his lease?—I think it would be a very hard case to do so, because he could not have reimbursed himself in 10 years for his outlay.

The question was 20 years after; you say after 10 years it may be got to 50 per cent., and you think in the second 10 years it might be kept at the same?—Yes.

Then at the expiration of 20 years, would a tenant like to pay for the second 20 years an increase of 50 per cent. upon his rent?—I should think not.

Probably to avoid paying that 50 per cent. increase, he might run his farm out the last four or five years?—Yes.

His inducement to run it out would be to prevent the 50 per cent. increase being put upon the farm in the next 20 years?—Yes, unless he had a compensation given him for the last four or five years.

Of course, if he continued to farm himself, he would have no right to compensation?—Of course not.

If £1,500 had been laid out in the first two years of the tenancy, would the outgoing tenant have a claim upon the incoming tenant for that?—If the money had been

laid out judiciously, and the tenant turned out, his improvements ought to be submitted to arbitration certainly.

Would that portion expended upon the fences have returned its profit?—Yes, in the course of 20 years it ought to do so.

Then there would be no claim for it?—No.

In the ordinary cultivation of such a farm, what in your judgment would be the annual outlay for artificial manure to keep it in its best state?—We must put the value upon cake, of course.

Take manure first, and go to food afterwards if you please?—You may reckon £100 a year, perhaps, for that.

For artificial manure?—It would depend a great deal upon the division of the farm.

Mr. E. DENISON.] You speak of the four-course system?—I speak of the proportion of green land and tillage.

Mr. HENLEY.] You say upon the farm which the question refers to it would be £100 a year?—This allowance would be moderate.

Of artificial manure?—Very small indeed. I am speaking as though it were my own; I have a great portion of green land, and my crop of turnips is something like 50 acres. I am only speaking with regard to turnips; I have laid out about £2 an acre, that is what I calculate for artificial manures.

Of course after a farm has been in a high state of cultivation for 14 or 15 years, the quantity of manure raised upon the farm would be every year increasing?—Yes, a farm would begin to be something like basting itself then.

And the necessity of purchasing artificial manure would decrease?—Yes, to some extent.

Therefore £100 a year expended in the last four years would purchase as much artificial manure as the farm would need?—Yes, if a farm were kept up in a high state of cultivation for the previous years.

How many years, in your judgment, should the artificial manure be thrown over and repaid for by the incoming tenant?—That would depend upon the kind used.

What was in your own mind when you were speaking of £100 a year?—Bone, guano, and lime.

Do you put lime for turnips?—Yes.

How many years would you throw lime over?—I would throw lime over three years, or four.

How many years would you throw guano over?—Guano I should not throw over so many years; I do not think that is so permanent a manure.

How many years would you throw guano over?—Say two years; bones I should give a longer time than guano.

How long would you give bones?—I think there would be a benefit of three years, of course, in bones.

Coming now to the article of food, what proportion of artificial purchased food should you suppose would be consumed on such a farm; do you use any food except oilcake, in the nature of purchased food?—I should imagine I have this year eaten something like £150 worth, or nearly £200 worth of flour, and oilcake, and one thing and another upon my farm.

And is that an extra quantity in consequence of the farm being now out of condition?—Certainly it is for the improvement of my manure.

What at the end of the tenancy of such a farm as you have been speaking of would be about the average purchase of oilcake, or artificial food for cattle?—It would cost a man about £150 a year to keep the farm up to the mark.

In your judgment, over what space of time, supposing £150 a year were expended in oilcake, should that be thrown?—That is a question of benefit.

Supposing a tenant to expend £150 the year that he leaves the farm, what proportion of that should the incoming tenant pay, in your judgment; that is, supposing oilcake to be consumed by the outgoing tenant in the last year of his tenancy, what proportion of that expense should the incoming tenant pay, or in other words, how much of the oilcake goes to the farm, and how much to the credit of the beast that eats it?—Suppose we say one-third should be paid by the incoming tenant.

And of any oilcake that should be consumed by the outgoing tenant in the year but one before he quits the farm, should the incoming tenant pay any share of that, and if any, what share should he pay of it?—I think he ought to pay a share of it, because he must receive the benefit of it to some extent.

What share, in your judgment, should he pay of it?—It is a sort of thing that I have not studied much; it is going rather close.

If you have one-third a year before the man quits, would one-sixth be a just proportion for the year before that?—I think it would hardly be sufficient.

Would you take it at one-fourth or one-fifth?—Suppose we say one-fourth.

Do you think a payment for oil-cake ought to go any further back than the second year before a man's quitting?—No; that would be about fair I think.

Then it would stand thus: there would be £100 a year of artificial manure for three years, which would be £300; there would be one-third of £150 of cake?—Yes, that would be £50.

There would be one-fourth of £150; that would be between £30 and £40; supposing the farm to have been drained at the commencement, would the outgoing tenant have any fair claim for compensation for any other acts done?—Yes; I think for the general management of the property altogether.

These questions are put to you supposing the same custom continued to prevail in Herefordshire of the outgoing tenant taking the away going crop?—I think the general management of the farm, and the general state of the farm, ought to be taken into consideration.

What in your judgment ought he to be entitled to receive for that, and under what heads?—Supposing a tenant was found be the landlord to pursue a particular course of cropping different to what the outgoing tenant did, that he should be bound for the last three or four years to a particular course of cropping which was different to what his predecessor's was, then I think that the outgoing tenant ought to have an allowance commensurate with the difference between that system of cropping and his predecessor's.

That is to say, if he were bound to sow a less quantity of corn in the last three or four years of his tenancy than the average of the four-course system, that he ought to be compensated for it?—Yes.

Supposing there is no such clause as that, is there any other act, and if any, what, that the outgoing tenant would have a fair claim for?—I think as I have stated, the general management of the farm.

How is that to be ascertained without coming to particulars?—It might be ascertained.

Mr. E. DENISON.] How would you ascertain that if you were a valuer yourself?—By general management.

Mr. HENLEY.] What particulars would you specify as being under general management?—I have before stated the general management of the farm ought to be taken into consideration by the valuers, such as the condition of the turnip land, and the expense of making the fallows for this particular crop, *i. e.* if the turnip land is cropped by the on-coming tenant.

But that would be breaking all system of good husbandry, would it not?—But he may do so.

The question does not presume a course of cross-

cropping at all; the question refers to the regular course of husbandry which all spirited and good farmers would observe without being told. Assume first the four-course system husbandry continued to the end of the tenancy, would the tenant be entitled to receive anything, in your judgment, upon it, beyond what you have stated?—He would be entitled to receive for his artificial grasses.

Is he entitled now, in Herefordshire, to receive for his grass seeds?—Yes.

Is there anything else, in your judgment, that the outgoing tenant would be entitled to receive?—I cannot charge my memory with anything now, certainly; what I started from was with regard to the difference in cropping; I have a clause to that effect in my own lease.

If there are special cases, speaking generally, assuming the four-course system of husbandry to be that which on the whole most people seem to approve of, and speaking with reference to that, do you think there is anything else that the outgoing tenant ought to receive from the incoming tenant?—I cannot charge my memory with anything else just now.

The question of buildings will arise presently; the question is now only as to the management of the farm that would secure good cultivation?—I cannot charge my memory at present with anything more than I have before stated.

Supposing a farm were cultivated upon the four-years system with spirit only for the four years, ought it to have a good face upon it?—Yes; but it would depend on its original condition.

With regard to buildings, would it be sufficient protection to the tenant to be allowed to remove the buildings he had put up, if the incoming tenant did not choose to take them at the end of the tenancy?—I think not; probably in regard to a building that had been put up 20 years, it might be useless to remove it; it may be of considerable value to the incoming tenant; but in taking it down it may be knocked to pieces, and made worth very little.

In your judgment, that would not be sufficient protection?—No.

What would in your judgment be sufficient protection?—To have it submitted to valuation, as to what number of years the outgoing tenant has been benefited by those buildings.

It ought to be made a subject of valuation?—Yes, I think so; and also whether the tenant has had benefit commensurate with the expense that he has been at during his 20 years' occupancy.

Do you think that with that view the landlord ought to have any option in permitting the buildings to be put up?—Yes, I think so; I think the landlord ought to be consulted. I should not like to allow a tenant, if I were a landlord, to put up what buildings he chose, and then to charge me afterwards for them.

You are perhaps aware that tradesmen have now the privilege, by law, of removing buildings that they put up for trade purposes at the end of their tenancies if they are not taken to?—I was not aware of that; that is not a law with regard to the farmer.

According to your judgment, upon such a farm as this, there would be then something like £390 capable of being claimed from the outgoing tenant by the incoming tenant?—Yes.

What upon such a farm as that, upon the commencement of a Herefordshire farm, out of condition, that is, such a farm as you have been speaking of, would be the probable rent per acre?—Perhaps 20s. to 25s. an acre.

Taking it at 20s., if it were to be increased 50 per cent. at the end it would be worth 30s. an acre?—Yes.

Which would be the greater inducement to a man, provided he was looking forward to take another 25

years' lease, to be secure of getting this £390 or of getting the farm at 20s. an acre rent for the next 20 years?—I hardly can answer that question.

You have been talking of a farm of 550 acres of land; you have supposed it to be worth £550 a year at the beginning of the tenancy, and by very spirited husbandry you say it might be made worth at the end, in the valuer's eyes, 50 per cent. more; that would be £820 a year instead of £550, and the acts of husbandry, those tenant rights you have spoken of, would amount to £390; is not that so?—Yes; but of course that would depend on the price of produce.

You are now asked which would be the greatest inducement to the outgoing tenant, to have a chance of receiving £390, or to have a chance of occupying that farm at £550 a year, instead of paying £820 to prevent his running the farm down the last four years?—I should prefer occupying the farm, of course, at my former rent.

That you would prefer it at 20s. an acre?—Yes.

The tenant right you have been speaking of would not secure the farm being cultivated up to the mark during the last four years?—Perhaps not, if the tenant expected his rent to be risen £270 per year.

You would sooner stand the chance of losing £390 than have to pay £270 a year the next 20 years?—I think I should. When a man is fixed in an estate, he does not like quitting.

You have said that if there was a tenant right it would work a revolution in agriculture; did you mean a revolution in the modes of managing the farm, or in the class of men who hold the farms?—In both.

Then all the smaller men would be squeezed out?—No, I do not mean to say that; but I think it would work improvements.

It would have a great tendency to squeeze out men of small capital?—Perhaps the little men would take such farms as their capital would be able to manage advantageously.

Do you think a landlord would be disposed to put up farm homesteads to suit the little farmers, or that they would be squeezed out of the market altogether?—I do not foresee that; I do not think the landlords would be so cruel as that to the present occupiers. I think, in the event of a change of tenancy, they would be more particular in taking tenants who had the capabilities, rather than those who would give the greatest amount of rent.

Then the smaller ones, who desired to put their children out upon farms upon short or insufficient capital, would not have a chance of getting their children into business?—They would have the same chance of getting their children into business, so far as their capital would be capable of managing.

They would not have the same chance of getting their children into business upon this expensive mode of husbandry?—Then I think they ought not to go into it, because I think the community would suffer. If a tradesman neglects his business, he only suffers; but if a farmer neglects producing all that the capabilities of the soil would warrant, I consider the community suffers.

Now that the community may go anywhere they like, and buy corn where they please, there is not so much claim to raise so much at home?—I do not know; I think it is only by one system that farming can be made to pay in any way whatever, and that is by the very best system of management.

Are the Herefordshire farmers, speaking generally, men of large capital, or not?—I should say not; there are some wealthy men amongst them; but taking them as a body, I should say they were not; we are none of us very wealthy men.

Do you think, speaking generally, that they have got capital adequate to the improved system of

management of husbandry, or that they would be short of capital?—In some cases there are deficiencies of capital, no doubt; in most cases I think there is property sufficient.

Herefordshire is a cider county, is not it?—Yes.

What is the practice of Hereford with regard to fixtures for cider making; presses and such things?—Those in general belong to the landlord.

If a tenant put them up, has he the power of removing them?—No; only the screw, he could take the screw out.

Are the machines that are used for making cider, generally speaking, fixtures, or not?—They are in general fixtures.

And, generally speaking, the property of the landlord?—Yes, generally speaking, the property of the landlord.

The produce of cider is an uncertain produce?—Very.

And that leads very often to the occupation of land by persons who rely a good deal upon the produce of cider?—It does; I think that a great misfortune.

And that leads to indifferent cultivation of crops upon the rest of the farm?—Perhaps it may.

Is that so in your judgment?—In some cases it is, but not very many.

Mr. E. DENISON.] You said just now, when asked whether, under the system that you had been speaking of, the allowances for tenant-right, small men would not be squeezed out of the market; do you think in the present state of affairs, with the markets of the world open, that small men, deficient in capital, are likely to do well in farming as matters stand?—I do not think they are with present prospects.

Is the farming in Herefordshire, generally speaking, on the present system good or bad?—I could not say much in favour of it.

Are there many farmers within your acquaintance who are improving their cultivation under the present state of things?—Where it is not done it is owing to the want of a better understanding between the landlord and the tenant. I know with respect to the county of Hereford, in some districts where farming is done as well as in other places; but that is only under peculiar circumstances.

You have spoken yourself of having left one estate on account of the landlord not being able to give security for improvements made, and of having entered upon another estate where you had a lease?—Yes.

Was that lease accompanied with compensation for improvements at the end of the lease or not?—Yes, it was.

Would you have any objection to state the nature of that compensation?—The nature of it was this, that all the artificial manures that I made use of in putting in any green crops for the last twelve months, are to be submitted to arbitration at the end of the term. And I have another clause in the lease, that wherever I put up buildings at my own expense, with the permission of the landlord, those buildings are to be submitted also to arbitration at the end of the time; and I am also to have compensation for a different mode of cropping, which I am tied to for the last four years of my holding, as being different to the mode of cropping by my predecessors. The last four years I am tied to a particular course of cropping.

Do you think that compensation for improvements would meet the general requirements of farmers, or that they must also be accompanied by leases?—No; I think that compensation would in many cases be preferable. I think it is no use putting a lease in a man's hand that would not make use of it, but you may en-

courage him by compensation, as a spirited agriculturist.

Are you acquainted with the farming in the parts of England where the principle of enlarged tenant-right prevails?—I have seen the farming in Norfolk, and I have heard the opinions of the tenants there, with reference to that; and from passing through Norfolk any person would soon find out when he got off property where leases were in existence.

Are you acquainted with the farming in any part of the wolds of Lincolnshire, or the heath?—I am not.

Have you any doubt that it would be a benefit, both to the owners of the land and the occupiers of land, that compensation, in the nature of improved tenant-right, should be allowed?—I have not the least doubt about it.

It might be done satisfactorily now, by agreements between landlord and tenant, might not it?—Yes, if it could be done voluntarily.

It may be done satisfactorily at present, by voluntary agreement?—Yes, if they will enter into it; but the thing is that people will not enter into it; I know of no landlord who will enter into an agreement of that sort.

Mr. HENLEY.] Except your own?—Except my own.

Mr. E. DENISON.] It might be done satisfactorily by private agreement between landlord and tenant?—It is not impossible to be done by parties where agreeable.

And you have stated that in your opinion it would be a benefit both to the landlord and the tenant?—Yes.

Why then do not the parties to whom the thing would be a mutual benefit enter into such an agreement?—I cannot state that; I cannot answer why gentlemen will be so obstinate as not to see their own interests.

Sir C. LEMON.] You said in the early part of your evidence you were not aware in any instance except your own, of a lease of 20 years?—I am not.

You were asked whether you knew of a lease of 14 years in your neighbourhood, and you said you did not?—No.

Do you know of any lease for seven years?—I cannot call to my recollection now any lease for seven years.

What would be the feeling of the farmers as to leases, would they be ready to accept leases if the landlord would give them?—Not under the present prospects, I think, unless it were on a fluctuating rent; it would not be wise to take a lease.

Suppose the landlord would insert the same covenants as in your lease, would the farmers then be disposed to take leases?—I think they would, probably.

Still it is a matter that they are indifferent about?—Inasmuch as very great changes have been made in the prices of corn in the last 12 months, it would be a dangerous thing for a man to embark on anything of that kind, unless it were on a fluctuating rent; I should not like to enter upon it, unless at a very low rent.

If you had to make your own bargain over again, you would not take a lease for 20 years?—Not unless it was under a fluctuating rent, as my own is.

There is no reason why it should not be upon a corn rent?—No.

Supposing that was the practice of the country, would the tenants be generally willing to take long leases?—I think many would; many of them do not understand the advantages of them, and therefore I think those are the only parties to object.

Would they be satisfied to look to that length of time as a compensation for the money laid out?—Perhaps they would.

Mr. DENISON.] The question is now whether, without compensation, they would take them?—Just so.

Sir C. LEMON.] The question now is with reference to a lease, the rent fluctuating according to the price of corn, and giving no compensation except this certainty of time, whether they would be willing to take the leases; that is, a lease the terms of which are dependent upon the price of corn, but having a fixed duration of time?—Upon the offer of a fixed duration of time, with a fluctuating rent, without compensation at the end, it is impossible to say what the feelings of the farmers in general would be upon that question.

Mr. NEWDEGATE.] Take the case of two men, one having a lease and the other a yearly tenancy, and supposing that both of those men became entitled to compensation for improvements, to which of those men would it be the greatest advantage, to the yearly tenant who is liable to six months' notice, or to the man who could only claim a compensation at the end of his lease?—I should think it would be a mutual benefit.

Which man would be most likely to be a gainer by the compensation, the man who might claim a compensation at the expiration of any six months, when he had notice, or the man who could only claim it at the expiration of his lease running 20 years?—I am sure I cannot say which would have the advantage, but I should think the yearly tenant would, under present circumstances.

Then, in your opinion, would compensation tend to the security of the landlord and of the tenant?—To a great extent it would, I think.

Do you consider the capital of the yearly tenant as secure as the capital of the tenant under lease?—For my own part I should prefer a lease; but many I dare say would rather have compensation, because if the farm were unprofitable the yearly tenant could give it up.

Would not a compensation clause be a greater object to a tenant at will than to a tenant under lease?—I think it would.

CHAIRMAN.] A tenant at will, holding under a 21 years' lease, during the first part of the term can of course take care of himself?—Yes.

During the latter part of the term it becomes rather a question for the landlord?—Yes.

It is a question for the landlord to see whether he shall get his farm back in condition or not?—Yes, whether he should receive the farm at the expiration of the lease in a good or bad condition.

Mr. NEWDEGATE.] If a tenant has a lease he can, in a great measure, get the capital expended back during the latter years?—Yes, he would have time. If I had a 20 years' lease, and without a compensation at the end of it, I should have four or five years to make the best of it I could; I should say, Now I am about to quit this farm at the expiration of five years; I have no compensation allowed me, I shall therefore go to work and make the most I can.

If you were a yearly tenant you would not have an opportunity of doing that?—No; if I were a yearly tenant I should be liable to be turned out at six months' notice.

Supposing that you were a yearly tenant, would not the compensation under custom, or by agreement, or by law, be a greater object than now it is that you have a lease?—I do not think that you could give a tenant compensation where he had taken to a farm under very bad circumstances, and he were turned out in the course of two or three years; no valuation that would be put upon it would be sufficient to compensate him for the outlay he had made: he might be eased, of course.

Sir J. TROLLOPE.] That would depend upon how he managed it, whether he did lay out a great deal of

money or not?—Yes; I should say if he had gone very spiritedly to work upon a very much exhausted farm, no valuation would be sufficient to compensate him.

Mr. NEWDEGATE.] It is not that you doubt that compensation would in such a case be needed, but you think that the amount would be larger than would be obtained?—The amount would be larger, in all probability, than would be obtained.

But whatever was gained would be so much to his advantage?—It would be easing him, of course; it would be different to what he has now: to turn out, after investing his property, to turn out without a shilling being given to him.

Would not he then be a greater gainer by such an arrangement, than a man is who can by an alteration of his system of cultivation towards the end of the lease compensate himself?—Perhaps so; I think he would.

CHAIRMAN.] You have been asked questions as to the amount of compensation likely to arise upon a certain farm; upon that farm the expenditure on artificials would not be so large as on many others, on account of the grass land?—No.

So that a farm of that size is not to be taken as a fair criterion?—No, it is not to be taken as a fair criterion.

As a man of business, is it your opinion that a spirited person with a 21 years' lease, and ample compensation at the end of that lease, would be so likely to run out his farm as another with no compensation at all?—I think not.

You have been asked questions as to whether a man would with a 20 years' lease be compensated by any claim at the end; you are now asked whether you think those claims for compensation at the end of a 21 years' lease would not be likely to encourage a man with a lease to keep up the cultivation fairly?—Certainly.

That is the way in which you would act yourself?—Yes, that is the way in which I would act myself, and that is the agreement I have.

You have also stated to the committee that the greater part of the farms in Herefordshire are held from year to year, and are likely to be continued so?—Yes, and they are likely to be continued so.

Then do you consider that protection for money laid out for artificial food and draining, and so forth, would be likely to encourage the farmers of Herefordshire to still continue a spirited system of cultivation?—I am of that opinion.

Sir J. TROLLOPE.] In speaking of acts of husbandry, you have named some as being extraordinary acts, and amongst them you mentioned paring and burning land; you have done so yourself?—Yes.

To pare and burn, you break up ancient pasture?—Yes.

Do you consider yourself, under those circumstances, if you have left your farm, and if you have taken one or two or three crops afterwards, entitled to any remuneration for the extra expenses?—It would depend upon the crop that was taken from it; if there had been only a green crop, the incoming tenant would have the benefit.

You fallow it with a green crop or turnips?—Yes, turnips.

Then a white crop?—Yes; either barley or oats.

What would follow the oats?—A crop of seeds.

Would you only take one white crop?—That would depend upon the nature of the soil.

Have you done so?—I am now breaking up land of that kind.

Do you consider it a good plan to lay down in seeds before giving it a course of cultivation?—No, not if

it is good land after burning with a large quantity of ashes.

You lay on a great number of loads of ashes per acre?—Yes.

Would not it bear a good many corn crops?—Two. Not more than two?—It would bear another crop, but we do not like to run it out.

You would then be paid for all that extra husbandry, paring and burning?—Yes.

What is the expense of paring and burning in Herefordshire?—About 40s. an acre.

Could not you do it for less than that?—No; our land pares very hard.

You breast-plough it, and heap and spread it?—Yes.

And the man takes that in the contract?—Yes; for which he receives about £2 an acre, taking the value of the drink and altogether.

That drink is cider?—Yes.

If you have had one corn crop after that process, should not you consider yourself amply repaid?—Query if I should.

What can you grow per acre, of oats?—I have never grown any oats; I have not been an oat grower.

Do not you take oats for newly-broken-up land?—Yes, but I have not got to that yet.

You were not acquainted previously with the breaking up of pasture land?—No.

Have you broken any before?—I have not done much of it, but I can see the advantages of it. I think half the land in the country wants breaking up; that is my idea; it is quite a mistaken notion not to allow that to be done.

Is it heavy clay land you would like to break up?—Yes, I should break up the heavy clay land, or bad pasture land, with thorough drainage; that would assist the drainage very much.

You would drain it before you broke it up?—Yes, drain it and break it up; you would get double the produce, or treble the produce you do now; poor grass land produces very little.

That would enable you to employ more labourers?—Yes, a great many. Our sward land will not grow five cwt. of hay an acre.

That land, probably, has been mown a number of years in succession, without manure?—It is poisoned with wet.

CHAIRMAN.] You were asked how soon you would be paid after breaking up grass land, for paring and burning, and other expenses; should you be quite safe from the wire-worm in your white crop, after one crop of turnips?—That would depend upon whether the land was subject to them.

Is not the risk of the wire-worm, for the first one or two white crops, a great deduction from the amount of real profit that arises from breaking up grass land?—Yes; sometimes the wire-worm will destroy a crop of oats altogether.

Evidence of Mr. SAMUEL MOGG.

CHAIRMAN.] You are a land agent, residing at Bathpool, near Taunton, in Somersetshire?—Yes, and a tenant farmer as well.

Are you also a valuer between farmers?—For tenant farmers, when about to take farms.

What is the time of entry?—About Taunton and westward, about Michaelmas; Glastonbury and Wells, and that district, generally Lady-day, because there is the pasture and grazing district.

Taking the Michaelmas entry, what does the outgoing tenant receive from the incoming tenant, or rather, under what heads does he receive anything?—

There is no rule or system for any compensation whatever, because it is very often made the cause of litigation between the landlord and tenant; there was a case of *Beaden v. Trimlett*, at the assizes, and afterwards the Judges referred it to arbitration; and I wrote a letter before I came to town inquiring of Mr. Trimlett about the expenses. I have heard the expenses of both parties altogether in taking it to the court and arbitration, is about £1,500 or £2,000; and that was for the want of a system being laid down for them.

Has the incoming tenant any right of entry for cultivation before Michaelmas?—No, there is no prescribed rule laid down to allow him to do so; he generally gets in to plough the turnip fallows; sometimes it is a provision in the lease, but not generally.

Whom does the manure belong to?—The manure is generally used by the outgoing tenant for his potatoes and so on.

So that there is very little dung to be found in the farm-yard?—That was the cause of the law-suit.

Is there any compensation for purchased manure or cakes used in the fattening of cattle?—None.

For draining, and any other improvements?—None at all laid down.

Then what is the allowance for?—There is no allowance made that the outgoing tenant shall receive any sum, unless he can get the landlord to allow it; but sometimes he cannot.

Sir J. TROLLOPE.] Is there any custom of the country?—No; there were 11 different customs spoken to, in the case I have referred to; one spoke to one thing, and another to another.

And there might be in each in different parts of the county?—Yes, there might be as many in different parts of the county; there is no rule laid down.

Mr. HENLEY.] And each part of the country has its peculiar custom?—Yes.

And as the tenants come in they expect to go out?—Yes; and if they get a seven years' lease they scrow the farm down as much as they can, and run down the farm as hard as they can, to put the money in their pockets which they laid out the first two or three years.

CHAIRMAN.] Is there much land that requires drainage in Somersetshire?—A great deal in the different localities, and all of it land that would pay for drainage.

How are your buildings in Somersetshire?—A disgrace to the county generally.

Do you speak generally of Somersetshire?—Yes, generally of Somersetshire.

Are there some parts of Somersetshire where the buildings are worse than others?—I suppose those about Taunton are the best; by artificial manure and food, and otherwise, the farming is carried on best there.

Sir J. TROLLOPE.] It is the best land, is not it?—No; there is better land than that.

CHAIRMAN.] Are you acquainted with the best part?—Yes; round Bridgewater and Dunster, and that part of the country.

Are the buildings generally bad?—They are not, generally speaking, what they ought to be.

Does the old system exist in some parts of Somersetshire of carrying three white crops, and then laying down the ground two or three years?—They crop according to circumstances; if they are going to change they run the land as hard as they can, there being no security.

Can you state to the committee, that in a case where the owner of the property is unwilling to lay out money for improvements generally, their unwillingness is a discouragement to the tenant to improve?—I know

one or two cases of that sort, where, if a system of compensation could be brought to bear by act of parliament, those tenants who are wealthy men will make the necessary outlay.

The landlord being unwilling to make the outlay?—Yes.

Is that unwillingness a great discouragement to the tenants?—It certainly is a discouragement to the tenants; because they have no security to do it themselves.

In the present state of the farm buildings, it is a very difficult thing to adopt improved modes of agriculture?—It is; we want tanks to save the liquid as well as the solid manure; there are no such premises in the county; we ought to farm so as to save every pound of liquid manure; but, as I have just said, I do not think there are any such premises in the county. In many cases where tenants have capital and security for the outlay, they would make such premises themselves.

Do you think the tenant farmers in Somersetshire are discouraged from making outlays, from the want of security?—Yes.

Is it a reasonable doubt in their minds whether they would be justified by prudence in making such an outlay?—Yes.

Can you state any cases of the kind to the Committee?—I know a case where a tenant took a farm as tenant-at-will in 1835, and carried everything out spiritedly till 1845; he put up a steam-engine, and had 40 or 50 bullocks grazing on 140 acres, feeding them on artificial food; and about the year 1845 he had notice to quit or pay 10s. an acre more for the estate, and consequently he agreed to pay some increase of rent; I did not hear how much.

If he had gone out he would have had no compensation for those improvements?—None whatever.

You have stated that very great improvements are required in the farming of Somersetshire, and that under the present system and the want of confidence they are not likely to be carried out. Is it your opinion that if the legislature gave security to the tenants for their capital, they would be disposed to lay out their money in a more spirited way?—I have no doubt about it generally; and when those spirited men marched on the way, the others would see it, and that would give confidence to those who would not otherwise be disposed to do so.

Farmers are more disposed, you find, to follow other farmers than merely speculative improvers?—They like to see the thing carried out practically first.

And you think there would be a sufficient number of practical farmers who would adopt the best methods, and induce the others to follow them, with proper security?—Yes.

Do you think it would lead to an increase of employment of the agricultural labourers?—Yes, five would be employed in the place of four; and instead of being inmates of the union workhouse they would be earning a maintenance, and thus there would not be broken down that sense of independence which there is in all men when they can earn their own maintenance.

Is the state of the agricultural labourers in Somersetshire such as requires attention and improvement?—Yes, and all the country generally with which I have been acquainted.

Have the farmers difficulty in finding employment for the labourers now?—The best labourers are all picked out, but they would be all better employed; those who are not quite so good as the best become inmates of the union house; others are obliged to get work the best way they can; they get employment

upon the roads at a sacrifice sometimes, because they will keep at work.

And is it the feeling of the farmers generally, so far as you know of it, that with an increased security for their capital, they would make an increased outlay upon their farms?—There is no doubt about it, and that would confer the greatest benefit upon the labourer, because he would receive his wages and be bettered in his condition.

Would the farmers keep more stock?—Yes, because if they improve the tillage of the farm, they must grow more green crops, and consequently they would produce more beef and mutton.

And more corn?—Yes, certainly, because they would get more in one crop; as much as one and a half before.

You think on some farms there would be an increase of the produce 50 per cent., or even double that, with proper security?—That depends so much upon the different fields, and upon different farms and localities; taking the farms together, you would not make so large an increase as upon certain localities.

You speak of fields, not of farms?—Yes.

Sir J. TROLLOPE.] Are the farms small in Somersetshire?—No; they are a good size, generally speaking; they are smaller where the land is better.

What do you consider a large farm in Somersetshire?—Six hundred or seven hundred acres.

Have you farms of that size in your part of the country?—Yes.

Being farms under the plough, or sheep walks?—Sheep walks.

They are chiefly down lands?—Yes.

Have you large arable lands?—Some, but not a great many.

Are the farmers, generally speaking, poor in capital, or wealthy?—Like the generality of the county; there are some spirited men with capital, and some who are not so.

CHAIRMAN.] Are you acquainted with the country between Wilscombe and Durstone?—I have been over it.

Would there be a capability of making catch meadows there?—Yes, extensive improvements have been made by one gentleman there.

You are speaking now of a farm on very high land there?—Yes. Another gentleman told me that he let, some years ago, 180 acres for £12 10s. a year; and now by the outlay, I think of the landlord, of about £600, it is now at £120 a year on that hill.

Mr. HENLEY.] He turned it into water meadows?—Arable and seed land; they take very little corn from land of that sort; it is a great expense on the first outset.

CHAIRMAN.] Liming is essential on that wild hill land?—Yes, to make the vegetable matter decay, to be food for the plant.

Do you know the cost of a good dose of lime an acre?—Not exactly; in that neighbourhood the lime, without the carriage, is about 30s. an acre.

Sir J. TROLLOPE.] How many bushels do you put on an acre?—We do it in hogsheds.

Do you know what a hogsheds holds?—I cannot say; the hogsheds vary very much in different villages.

Mr. HENLEY.] How many hogsheds will a waggon and four horses bring?—I never heard the calculation made.

It is eight bushels, then?—Yes.

Sir J. TROLLOPE.] How many hogsheds do you put on an acre?—The tubs are of a different size; at one place they have got three, and at another place they have got four; they vary their hogsheds; there

are only three-fourths of a hogsheds at one place, and at another four.

CHAIRMAN.] It would cost £3 or £4 an acre upon the hills, to give it a good dose of lime at starting?—£3, I should think.

Sometimes they have to carry the lime on horses' backs?—Yes.

And go 15 miles to fetch it?—It would cost £4 or £5 perhaps, carriage included.

Sir J. TROLLOPE.] Does Somersetshire produce no lime of a quality and capability of improving the land, or is it brought by sea?—They produce lime from the lias and sandstone of different places.

It is the produce of your own county?—Yes, there is some obtained from the sand rock about Taunton, and from the blue lias.

That is the best?—It is greatly used about Taunton. Is it not the best?—It is good in that neighbourhood.

CHAIRMAN.] The committee are to understand that there is great room for the outlay of capital in different ways, in that part of Somersetshire that you are acquainted with; that is, that at present the landlords are not able or willing to lay out, and that the tenants in many cases would do so if they had proper security for their capital?—No doubt they would.

Sir J. TROLLOPE.] Do you make water meadows in any part of the land you know of?—Yes, where we get land available.

Who does that, the landlord or the tenant?—They always make the best bargain they can, of course.

Do you get compensation for making water meadows, for the levelling and cutting the land, on leaving?—We have no claim; we are not satisfied we shall get compensated; we may chance to make a bargain.

And if you do not make a bargain, you are not entitled to any compensation?—No; we get nothing.

Do you drain at all those fields?—Yes.

The landlord finding the tiles?—There we make the best bargain we can; upon my land my landlord agreed to lay out £100 in improving the buildings, and drainage too, upon about 120 acres of land.

That would not go far?—No; I wanted about treble that sum.

Have you sufficient confidence to lay out the other £200 yourself?—Not under present circumstances.

What are the circumstances that deter you?—There is not sufficient security at the end.

How many years is your lease for?—Fourteen years.

Did you not bargain for any covenants in your lease?—No, I could not get them.

Did you try?—No. We can drain for about from £3 to £3 10s. an acre in the neighbourhood of Taunton, where we get the tiles, and Bridgewater.

At what depth do you drain?—That does not matter; if you drain six feet deep, you do not drain so frequently; I think it is much the same expense whether you drain six feet or three.

What you expend in workmanship in the one case, you would expend in tiles on the other?—Yes.

What is the expense of that draining?—About £3 10s. an acre.

To do the whole entirely with tiles or pipes?—To do the whole entirely with pipes; and some with stones, where we are near a good stone quarry.

In a lease of fourteen years, would you not be repaid your outlay for doing that the first two or three years?—You cannot do it at all in one year; it does not come in rotation; you cannot go into every field.

You drain the fallows?—I do it when down in grass because then I can see what I am doing. We generally go upon the four-course system, if we have any confidence at all in our holdings.

Mr. NEWDEGATE.] You said there had been a very large expense; that £1,500 or £2,000 had been expended in a trial in regard to compensation?—Yes, and that would not have been so if there had been a rule laid down for compensation. The tenant endeavoured to take everything himself, and then the landlord brought his action.

If there had been an established custom, the expense would not have been so great?—It would have been avoided.

Do you think it is necessary to alter the law in any way, to give compensation through a court of law, if the custom exists?—I do think it is necessary to alter the law; I cannot understand any law to compel compensation at the present time.

That is owing to your not having custom?—I have understood there is custom in Lincolnshire, or there is compensation.

And there the law is decisive?—Yes.

Mr. HENLEY.] Was this action you have spoken of, that cost so much money, commenced by the landlord because the tenant had cross cropped or run out the farm?—The tenant would not sign the lease; then the landlord turned round and gave him notice to quit at Lady-day. At Michaelmas he was obliged to take all his crops off; he could not eat them; and he did so, and the landlord brought an action against him because he did so.

Then this litigation was not consequent upon any want of tenant-right, but in consequence of a quarrel between the landlord and tenant?—If there had been a tenant-right that would have been avoided.

The action was for carrying the corn off the farm?—Yes, but the tenant understood that he was to rid his farm at six months' end; he was to do so, but then the landlord brought an action because he did so.

No tenant-right enabling the tenant to be paid for draining, or artificial manure, or artificial food, that he had spent upon the farm, could have prevented an action of that sort, if the tenant had carried all the corn away?—He would not have done so.

If he was wrong-headed in the one case, why should not he be wrong-headed in the other?—He was not wrong-headed; he was obliged to do so.

Why was he obliged to do it?—He had a six months' notice to quit and deliver up everything.

His right to be paid for draining and artificial food, and so forth, would not have interfered with his right of carrying his corn and straw off the farm?—He would not have made that attempt to do so if he had been sure of compensation.

Mr. MOODY.] Did he bring it upon himself by not signing the lease?—I do not know; one thing I know, they were both hot-headed men.

Mr. HENLEY.] This did not arise from any claim on the part of the tenant?—I only brought out that to show the necessity of a system being laid down.

As you stated it, the Committee would have been led to believe that the action arose about a dispute the tenant had for compensation?—I stated it to show the necessity of compensation; because if there had been an existing law to compensate the tenant, he would have let it stay on as it was before.

Is there much land in Somersetshire drained?—There is a little drained, not so much as there ought to be by seven-tenths.

There may be three-tenths of the land drained, and seven-tenths to do?—Three-tenths is rather more than there is drained, taking the county throughout.

You have stated, in your judgment, that tanks for the saving of manure are very much needed?—Yes.

The attention of the public has been called to the

subject of liquid manure very much within the last two years?—Yes.

Is that a thing that has been much used or understood by the large body of farmers?—Men have been talking about it; more the last four or five years.

Generally the public attention has been more directed to that within the last four or five years than for twenty years past?—Yes.

That may be some reason why those things have not been so much done as may appear necessary?—That may be the case in a great measure.

Is not the land about Taunton very rich?—Not so rich as it is generally considered to be.

It has the general reputation of being rich?—Yes, it is, near the gravel.

You hold land there?—I do; there is a good deal of exaggeration about Taunton land.

Is not it, generally speaking, the richness of the land that has caused it to pass almost into a proverb as to the Golden Vale?—Yes; there is some very good land about Taunton, and there is some within five miles of Taunton that I would not give more than 5s. an acre for.

There is a difference in the land?—Yes.

Taking some of the best land entitled to the term "golden," if that land, which is full of water, were drained, do you not think that it would repay the tenant for draining it in less than fourteen years?—It may do so.

Speaking of the "golden" land?—Good land saturated with water would pay in less time than bad land.

In what time in your judgment, would this "golden" land pay for the draining?—That which is termed "golden" would be improved very greatly by draining.

Would a man get his money back in four years?—No, not in four.

Would he get his money back in six?—He may in land of that description, very good land, but very wet; he may get it back in two courses of cropping, eight years.

And not in less time than that, in your judgment?—No.

Should you alter your opinion in that respect if you found in Lincolnshire, where there has been longer experience, that a man has got paid in less time?—No; I should form my own opinion of what I have seen before me, and practically know.

And in land that is not "golden" but only silver or brass land, perhaps it would take ten, or twelve, or fourteen years, or three courses of crops?—It would work out in fourteen.

Twelve years would be three courses?—Yes.

Do you think the generality of land would get back in three courses?—Not in what we call heavy land, but with wet it would want a longer time than in the best land.

There is a great deal of valuable grass land in Somersetshire?—Yes.

The land that the Cheddar cheese is made from is valuable land?—The land from Bridgewater to Cross is grazing land.

Is it very valuable land?—It is generally considered so.

Does not a very great deal of it want drainage?—It would be much improved by drainage.

Upon grass land of that description, what would your opinion be as to the time that drainage ought to run over to repay the tenant for the outlay?—That depends upon the quality and the position; in some it would take six or eight years, because in the neighbourhood of Bridgewater to Cross, and that locality, there is great facility for getting draining pipes. Brown and Seely, of Bridgewater, do a very spirited trade in it.

The facility only makes the drainage cheaper, it does

not alter the principle and number of years run over?—The less money you lay out the quicker you get it back; if you lay out £3, you would get £3 in a less number of years than if you laid out £4.

And the tiles are much cheaper in that neighbourhood?—The carriage would not operate against the drainage in the district generally.

Do you think the drainage in that country is not done on account of the want of outfall, because the artificial outfalls are mostly made under the Commissioners of Sewers?—They are.

Is that the reason that the under-drainage has not been carried to a greater extent than it is now?—Partly so, and partly from want of security; those two things operate against it.

You think both those elements operate against it?—I do.

Are the tenants in that part of Somersetshire men of capital generally?—Generally speaking, in that neighbourhood.

Quite sufficient to undertake it, if the circumstances permitted it?—Yes, no doubt of it; that is what they call a marsh district.

Would draining the land affect its quality for cheese making?—The better the herbage you produce, the better you have to feed; better herbage would produce better goods.

Sometimes a very trifling alteration in the land has a peculiar effect upon the cheese?—The better the herbage, the better the goods.

Is that always so?—Certainly. I know one estate where a sort of weed comes up and spoils all the cheese.

The buildings in Somersetshire are bad?—They are not worse than the generality. I say that in all counties they are worse than they ought to be.

What in your judgment would be a proper security for buildings to the tenant?—I suppose twenty to twenty-five years.

Do you think that the same security which tradesmen receive now would be sufficient to an agricultural tenant?—To take them down and carry them away?

If not arranged for?—No; because if you pulled those buildings down, they would not be worth one-third.

Then, in your judgment, an agricultural tenant ought to be put in a different position from a tradesman?—Yes.

That would be your judgment?—Yes.

Do you think that it ought to be so, that buildings ought to be put up with the consent of the landlord?—Yes, he ought to be consulted, and ought to enter into an agreement.

Should the tenant have a right of putting them up without the consent of the landlord?—If sufficient parties were called in by the landlord, tending to prove that those buildings were necessary, then I would put him out of the question.

Then you would not leave the landlord the option?—I would give him notice that I should like to put up such and such buildings, and let him name an arbitrator, and then if he did not I would have power to name an arbitrator in another sort of way; I would let him have a discretion of that sort, but I should not like him to put his veto upon it.

What discretion would you give him?—I would let him speak through his arbitrator, and he should be compelled to do it if the arbitrator decided that it was an improvement.

If the arbitrator decided that it was an improvement whether the landlord liked it or not, the tenant should be authorized to do it?—Whether the landlord liked it or not, the tenant should be authorized to do it.

What period of years should the right to be paid for the buildings run over?—Twenty to twenty-five years.

Do you think that the landlords and tenants ought to have power to settle that by private agreement between themselves?—I do not; they could not settle it in that sort of way.

Do you think the landlord and tenant ought to have a right to enter into a bargain to exempt themselves from such a law?—No, the law ought to be imperative.

That would be your judgment?—That would be my judgment.

Do you think that the tenant upon going away ought to be responsible for the dilapidation of the farm?—That depends upon the arrangement, whether the tenant was to keep the buildings in repair.

The question refers to the farm?—If he is paid for the improvements, it ought to be in sufficient repair.

Whether he is paid for the improvements or not, if at the end of the holding the farm is in a bad condition ought the tenant to be responsible to the landlord?—He ought not to leave it in a worse state than he found it.

If he had made an agreement to cultivate the farm in a proper husbandlike manner, without reference to the condition it was in when he took it, ought he at the end of the fourteen years to be liable for dilapidations?—What one man would call a good and clean state another man would say was not so.

Supposing that to be the case, that the tenant undertakes to keep the farm in a clean and sufficient state, ought he to be responsible?—If he found it so he ought to leave it so, to do his duty as a tenant.

If he takes a farm in a bad condition, in consequence of which he takes it at a low rent for fourteen or twenty years, that is, at a lower rent than he otherwise would have paid, and gets the farm into a bad condition when he goes away, ought he to pay for the bad condition of that farm?—If he improved the farm generally on the first outset, the difficulty would be to let it back to that condition again.

The question is not whether it is difficult; the question is, if he did let it back, ought he to pay for it?—He ought to be made to pay the landlord if he injured the property.

The question is, whether he lets the farm go back into a bad state?—If it is not in a worse state than he found it, he ought not to be made responsible.

Your notion is, so long as a man does not leave a farm in a worse state than he takes it, he ought not to be responsible for its condition?—Certainly not.

The Committee are to understand that as being your opinion?—Yes.

Would that be just?—It would be just if he left his farm as good as he found it.

You say that he ought to have a claim upon the landlord for his improvements?—Certainly.

And therefore if he dilapidates the farm, would not it be equally just that he should be made to pay for it?—I consider the landlord ought to be paid if a tenant leaves a farm worse than he found it.

Not unless he leaves it worse?—Not unless he leaves it worse.

Supposing a man takes a farm in a bad condition, worth 20s. an acre in consequence of being in a bad condition, he covenants to farm it in a clean husbandlike manner, and leaves it at the end of fourteen years in a bad condition, do you think then he ought not to be answerable for the bad condition of the farm?—If he leaves a good and sufficient clean husbandry, then you ought not to make a man responsible for anything of that sort.

Is that your judgment?—Yes; because if he brought up the farm beyond what it was when he entered it, he

ought to have a right to bring it back, unless he were compensated.

The question does not relate to compensation; but if, instead of bringing it up by clean husbandry, which he has covenanted to do upon it, he lets it go back into the same bad state that he found it, ought he to be responsible for that?—No; because he did not leave it worse than he found it.

Then there need be no improvement in land?—Yes; but I think every man ought to sit down satisfied: if I made an improvement I ought to be satisfied with it.

Go one step further; you say, in your judgment, if a man comes into a farm in a bad state he ought not to be responsible if he leaves it in a bad state when he goes out?—No.

Have not many of the farmers of Somersetshire come into farms with some unexhausted improvements in them?—Yes, I should think some have come in with unexhausted improvements.

Should you think it right to make a law that those men having come into farms with unexhausted improvements in them, by a sudden operation of law should be enabled to go out, and for the incoming tenant to pay them for what they have got in the land?—Yes, of the improved land.

Yet if they deteriorate the land they ought not to be responsible for it?—The question put to me was, if they did not make it worse than they found it; that is, if they made it worse than when they entered it they ought to be made to pay the outlay, and the landlord ought to distrain for it as for his rent.

Yet you say that a man taking land at a low rent, and in consideration of that low rent conditioning to farm it in a husbandlike manner, ought not to be made to pay if he leaves the farm no worse when he goes out than he found it when he comes in, he having held it at a low rent because of its being in a bad condition?—That I never entered into; that is left to the arrangement of the parties at a market price, and the man who gives the most takes it.

In such a state as that ought the tenant to be responsible?—Not if he left it in as good condition as he found it.

Mr. NEWDEGATE.] Supposing a man had a farm held by a bad tenant, and he let his land to a man who he thought would be an improving tenant, that is, supposing he let it him at 10s. an acre less than its value in order that he might improve it, and he held that farm for seven years, but he did not improve it although he had it at 10s. an acre under its value, ought not that man to pay dilapidations, or rather pay for not having improved according to his contract?—You do not see business transacted in that sort of way. I see that perfectly well; you must make a special agreement to say he shall improve it.

Mr. HENLEY.] The question is this: a contract being made with a tenant that he shall have a farm at a low rent because he is considered to be a good farmer, and will farm the land in a clean husbandlike manner, if the man who covenants to farm that land in a clean husbandlike manner leaves it at the end of the term unimproved, ought not the landlord to have a claim upon the tenant on that account?—Yes, if he makes a special agreement.

Did you ever know an agreement entered into in which that was not one of the covenants, that it should be farmed in a husbandlike manner?—I would not take a lease saying how I should crop the land.

You are asked whether you ever knew a lease without a covenant in it that the farm shall be farmed in a husbandlike manner?—No, never without a clause of that kind in it.

When persons let land without a lease from year to year, do not they generally stipulate that it shall be farmed in a proper manner, according to the custom of

the country, or something to that effect?—Generally, but it is done in a loose manner.

But being done in a loose manner, there is an understanding that the man is to farm it properly?—That is not generally understood, what is called properly, because there is no custom existing to lay down a system upon which it shall be done.

It is not generally admitted to be proper to keep land clean?—Yes.

Suppose a man takes it foul, and has it at a low rent upon the supposition that he is a better farmer and will keep it clean, do you think he ought to be answerable if he left it as foul as when he found it?—Certainly, if he went away and left it unimproved, by special agreement; a man ought to do what he signs to do.

Not else?—No; if he takes it to do what he can, if he is not tied to it, he ought not to do it.

You say you think the landlords and tenants ought not to be allowed to exempt themselves from the operation of any law about buildings?—Certainly not.

Do you think there is any covenant that ought to be made between landlord and tenant, in which they ought not to have the power of exempting themselves from that; is there any part of the bargain between landlord and tenant that the law ought to make for them and not for themselves?—I do think so.

What parts do you refer to?—I think that where the tenant should give the landlord notice that he wished to make any permanent improvement, draining, or building, or road-making, if he gave notice of such improvements it is necessary that there should be arbitration without the landlord having any discretion at all; if arbitrators were appointed, and they agreed that it was an improvement, then the landlord should not have the right to say it is not.

That is as to draining and road-making; is there anything else you would specify, not of a permanent nature?—No; but the landlord should not have discretion; because I think if you gave a law, there are many landlords would say, "It answers my purpose to get my rent," and they will not care anything about improving their property.

You say they should not have a discretion in road-making, draining, and buildings; will you specify the articles which you think they ought to have discretion in?—To make the best of their property. I would not interfere with the landlord letting his property; if there be an opportunity of calling in two or three disinterested men, I do not see what the landlord wants discretion for.

You say they should not have a discretion in road-making, draining, and buildings; will you specify the articles which you think they ought to have discretion in?—They ought to have no discretion in any improvement, provided the arbitrators agree that it is an improvement; they ought not to stop any improvement. I have put it in this way: I have drawn draughts up that you can refer to the Inclosure Commissioners, or some other authority; and if the landlord would not name his arbitrator, they should name one, and the occupier should name one; and if the arbitrators agreed that it was an improvement, the landlord should have no discretion whatever.

Now you state a general and not a specified improvement?—That is if the landlord did not choose to name his umpire; he could speak through his umpire if he thought proper; and if he did not do it, I would authorize some other person in authority to appoint an umpire for the landlord.

You have said that the landlord should have no discretion in any improvement that the arbitrator thought was an improvement?—Certainly not.

Which, in your opinion, is the greatest consequence to

the tenant, the improvement to the estate by the mode you have named, or the rent he pays?—Having a farm in a bad state and having it in a good state is a very great deal of difference, no doubt; and I think the tenant would better pay a greater rent, and have a farm in a state that he could make it again, than have a farm wet, and bad buildings, so that he could not make his money.

Which do you consider to be of greater consequence to the tenant, to have improvements of this kind that you named made, or the amount of his rent fixed; I do not understand what you mean by the difference of rent fixed; I understand the question like this, do I consider that the tenant would be better able to pay an increased rent with those improvements?

The question means this, do you think it of great consequence to the tenant to be allowed to expend such money as he pleases with the certainty of being repaid by the operation of the law; do you think that of greater consequence to him than the amount of rent per acre he pays for his farm?—The market value of the thing would regulate it; when the farm came to be valued it would be a consideration.

When you speak of the market value, how is that to be ascertained?—You find a great many gentlemen throw their farms open to tender; I know a case in which the whole tenantry was valued.

Are the committee to understand your opinion to be that the landlords ought to ascertain the value of their farms by tender?—No; let a fair man value their estates.

You think it ought to be a fair man valuing?—Yes; let the man ascertain the value of his estate and then let it, and then it a man goes and improves the estate let him be paid for his improvement.

You would not like the law to settle the rent?—No.

Why not?—I would not interfere with private property in that way.

For instance, a tenant giving notice that he wanted to lay out a very large sum of money, say £1,000, on an estate, you would not give the landlord power to prevent it?—Unless there is an arbitrator.

Would you deprive the landlord of the power of giving notice to quit?—No.

That would stop the money being laid out?—Certainly.

Would not it be a simpler process to give the landlord a veto upon laying out the money in the first instance?—I was only answering the question with reference to a lease.

Supposing a man made a covenant in a lease that the tenant should put up no buildings without his consent, do you think that the law ought to override that covenant?—I do.

Then in point of fact, a tenant having entered into an agreement that he wanted to set aside, would be neither more nor less than a deception upon the landlord?—I do not understand that to be so.

You say a tenant having a covenant with his landlord on taking a farm that he should not be entitled to put up buildings without the consent of his landlord, in your judgment ought the law to override that covenant?—Yes, because you would not get them put up at all.

Then the committee are to understand, in your judgment, a man having made an express bargain with his landlord, and got possession of a farm for a term of years under a certain condition, there ought to be a law made to do those things he has expressly intended not to do?—I do not think the tenant ought to sign a lease of that sort.

Confine the answer to the question put to you?—If he gives an agreement he must stick to it.

Then the committee are not to understand that the

law ought to override the agreement?—Not in that respect; if a man has signed an agreement, he is not a reasonable man not to act up to it.

That is his discretion?—Yes.

Mr. MOODY.] Do you consider the property in Somersetshire to have been greatly improved?—Yes.

And the improvement that has taken place has taken place by mutual agreement between landlord and tenant?—Yes, that is so.

And that improvement has taken place by a good understanding between the landlord and the tenant?—Yes.

CHAIRMAN.] You say, in some cases it is desirable for tenants to have power to make roads?—Yes.

With compensation?—Yes; in all cases the improvement ought to be authorized before the work is commenced.

The question was not as to the thing to be done; the question was put whether you think that in some cases it would be for the advantage of the farm that the tenant should be allowed to make roads, with compensation?—That is where you have to go through a field on headlands; if the road were stoned that would be a great improvement, and all those things ought to be gone into before they are done, because if the arbitration was held at the end of the lease perhaps you would get into a great litigation; but if you first of all see your way to do it and how you are to be paid, the thing would go on more smoothly. I wish to be understood about landlords having discretion; I mean they should have a discretion if they chose to appoint an arbitrator; but if they like to be sulky, and would not appoint an arbitrator, empower some other authority to do so.

May 18th, 1848.

MEMBERS PRESENT.

Mr. Bouverie	Mr. Moody
Mr. E. Cole	Mr. Newdegate
Mr. E. Demison	Mr. Pusey
Mr. Tatton Egerton	Mr. Sotheron
Mr. Hayter	Sir John Trollope

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of Mr. FRANCIS WOODWARD.

CHAIRMAN.] You are a farmer in Worcestershire?—At Little Comberton.

What is the extent of your farm?—About 1,100 acres.

Has that farm been much improved in any way since you entered upon it?—My friends say so; it is not for me to say; I have expended a very considerable sum of money upon it.

Has it been drained?—Thoroughly; very superiorly drained.

Has the effect of the improvements been satisfactory?—Very much so, indeed; it has raised the produce of wheat and improved the farm from 24 bushels an acre to 48. I do not mean to say that the general average years would be 48; it was last year, and perhaps will be this.

Has that enabled you to increase the quantity of stock upon the farm?—To a very great extent; it carries at least one-third more.

Has that enabled you to have sheep on land which would not bear sheep before?—Decidedly, and enabled me to plant a great portion of the mixed strong land with turnips, which I could not do before it was drained.

On what tenure do you hold your farm?—About half is my own, and the other is land under lease for 21 years; indeed it is two holdings; one is a lease renew-

able every seven years, and the other is 21 years. The farms are rather small with us; I have two of my own, and two I rent.

With regard to the custom of Worcestershire, what is the usual time for the incoming tenant to enter upon the farm?—There is no definite period; at all seasons; some at Michaelmas; I think the majority may be said at Michaelmas and some at Lady-day, others at Candlemas.

Is there any compensation made to the outgoing tenant for improvements he has made?—Decidedly not.

Not for artificial manures, such as oil-cake used for cattle?—Not anything of the sort that I have ever heard of.

How are the farms generally held?—They are yearly holdings generally speaking; in a few instances there are leases.

Is the land in Worcestershire generally drained?—There is a great deal being drained lately, but a great portion is undrained, and in fact not more I should say than one-fourth of the county is drained now.

Is there room for increase of produce in Worcestershire generally?—The average is about 24 bushels per acre of wheat; it is very possible to increase it at least 10 bushels per acre by draining and a good system of tenant-right, if the tenants could be compensated for the outlay of their capital. Worcestershire is a strong deep soil; generally speaking a very tenacious wet soil; it might be at least improved to the extent of 10 bushels an acre.

Besides the increased produce of corn, is the land of Worcestershire which requires drainage, though strong, capable, do you think, of carrying stock if it were drained?—Yes, decidedly.

Should you look to a greatly increased produce of meat?—No doubt of it; in fact, where the land has been drained there are large flocks of sheep, 500 sheep perhaps on some farms where there were not 100 head formerly, in consequence of the drainage and soil burning.

Will you describe to the committee the process of soil burning?—We do it principally on very strong, wet, tenacious land; we plough it up very shallow, or skim it about two inches deep, and burn the whole of the surface, at a cost of about £3 10s. to £4 an acre; that would give a very greatly increased quantity of produce of every description, particularly beans, seeds, and all green crops, and on some land it increases the produce of wheat very much. You ought to get a green crop after burning, before wheat; it sometimes leaves the land a little too hollow for wheat.

Is this a durable improvement?—Yes.

Is it one for which the outgoing tenant, if he had not held the farm long enough to obtain a profitable return, should be allowed compensation?—Yes, decidedly so. I had some done eight or nine years since; it answers remarkably well to the present day; in fact it makes strong land, so that you can grow turnips upon it, and eat them off with sheep; there is a description of land (sandy soils) which it is not any service to; it is not required there; but if it is done judiciously it is a very great improvement on strong land.

What sort of farm buildings have you in Worcestershire?—Very bad upon the whole.

Are they so bad as to be an impediment upon the farmer's adopting the best course of improved husbandry?—Yes, and in many instances the landlords are so poor that they cannot afford, or will not put up the buildings.

Where the landlords are unable to afford those heavy expenses for improvements out of their income, do you think it desirable that the tenants should be allowed to

do so?—In many instances the tenantry would do it if they could be allowed for it on leaving the farm.

As a practical man you are of opinion that many of the Worcestershire farmers have capital enough to undertake the outlay?—Not generally speaking, but there are instances; in many they would borrow money no doubt for the purpose.

Do you think that if the Worcestershire farmers had tenant right they would increase the employment of their labourers?—No doubt, to a very great extent.

Is that a point of any importance in Worcestershire?—Yes, decidedly so.

Have you found any difficulty in getting employment for your labourers?—Very great; in some years our Board of Guardians, of which I am chairman, find great difficulty in some seasons; we have not this last 12 months.

Do you anticipate that difficulty in time to come?—I have known as many as 20 or 30 in a day; men who wish work if they could have it.

You have stated that the farms in Worcestershire are generally held from year to year?—Generally speaking.

Is it your opinion that the holding from year to year with tenant right would be acceptable to the farmers of Worcestershire generally?—No, doubt; but landlords are so tenacious in general in granting leases. I do not wonder at it; you may get a man close up to a gentleman's door, and he may choose to be a nuisance, and may annoy him for years. If you had a good tenant right, there would be no difficulty in getting a good practical man to lay out a large sum of money, because if the landlord wished to get rid of him he could then do so by repaying him for his outlay.

Do the farmers of Worcestershire wish for long leases or tenant right?—They do not care about long leases if they have tenant right; they only want compensation in case they leave their farms.

Have any of them a misgiving as to binding themselves by a long lease?—I think they have at the present day; since the corn laws were repealed the tenants are not so anxious to get leases as they were, and therefore farming will go back unless we legislate in some way; they are afraid to take leases in many instances.

Is there any other point that occurs to you to mention to the committee?—I could mention an instance of a farm in Worcestershire where a person took the land three or four years ago on lease for 21 years, and there was a considerable portion of land that had been lying idle for some years, and had done nothing; in fact it was only let to him at 7s. an acre. In consequence of this lease, he set to work and burned a portion of it; perhaps only 100 acres were at 7s. an acre; he farmed it with vetches, and eat those vetches off with oilcake with sheep, and had 48 bushels an acre the first year from land only worth 7s. an acre before that time; I witnessed it with my own eyes.

You say the land had been lying idle?—Yes; the land had been lying idle a number of years, not carrying a sheep to an acre; by this judicious outlay of capital, through having a lease or a tenant right, which would have been equally the same thing, he made that improvement.

Do you mean the land had not been let?—It was not cultivated; it had been let, but not cultivated; it was lying barren; it would not grow seeds, it was so poor; it did not carry a sheep an acre; not a lark to an acre, as the old saying is.

Have you any land so cold that it is difficult to find a tenant for it in its present state?—Yes; a friend of mine had an estate to let last year; it was so cold and wet, and he was so poor, that he could not afford to

underdrain it, and it laid without for some time. There is a very great wish on the part of the landlords in Worcestershire and the adjoining counties, for government to grant them a further sum for under-draining; that has been carried out to a considerable extent, and now there is no money to be had.

And the landlords are not themselves, in many instances, able to advance sums for those improvements out of their own income?—No.

Mr. BOUVERIE.] You spoke of tenant right; what would you define that tenant right to be?—If I were to take an estate, and go and lay out money upon it, I should wish to farm it in the best way I could; and if at the end of six months' notice I were to leave it, I should then wish to have compensation for all the unexhausted improvements in the soil, either by draining or by bones and artificial manure, or whatever I had done upon it.

Have you any stipulations in your leases with reference to improvements of that character?—No; I have not.

You made those improvements with the prospect of obtaining a profit during the period of your lease?—Yes. Where there are leases in Worcestershire, the last three or four years the land is run out very frequently; there are two reasons for that: a man says, if I wish to continue this farm again in a high state of cultivation, there will be 20 people wishing to take it; but if I allow this land to run out and do nothing to it the last few years, so that I can just escape the provisions in my lease that I am obliged to fulfil, I can take my farm again: and I think with a good system of tenant-right a man would farm as well to the last moment as at the first, knowing that he should be compensated when he left.

If a farm under those circumstances is improved generally in value up to the period of the termination of the tenancy, there would be the same competition to get the farm?—There may be certainly competition, but still I think a man would get remunerated for his outlay.

You have said that many of the landlords of Worcestershire could not afford to make an outlay for building?—Yes, a great many of them.

Are you aware of any cases where the tenants have asked for stipulations and covenants allowing them to remove the buildings or receive compensation?—Yes, I could mention such cases.

Have you known them refused?—Yes.

You say that there are cases in which the tenants have asked permission to erect buildings, with stipulations for their remuneration when the tenancy ceased?—Yes.

Have you known those arrangements entered into?—No.

And you say that the landlords have refused to allow such things to be done?—Yes.

Sir J. TROLLOPE.] Are they never allowed for buildings at all?—Nothing whatever.

Not even when put up with the permission of the landlord?—I never knew a case.

Do you hold a lease?—Yes.

Are there conditions in that lease?—Yes.

What is the nature of those conditions?—The conditions are principally these: I am to leave the land in a certain state; a certain number of acres in fallow, and a certain number of acres seeds; I am to be paid the prices of the ploughings and fallows of the last year.

That is a compensation, then?—It is a compensation.

Is that the only compensation?—Yes.

Was not it in your power to have made terms with

the landlord or his agent, such as would have suited your view of the case, that you should have been paid for drainage or buildings?—It was not the custom.

Did you ask for such terms?—I asked for several things which I did not obtain.

Then if you had a tenant right with a lease, would not it invalidate some of the conditions of your lease?—No.

It is contrary to the tenure of your lease to be paid for drainage or building; if you had a tenant right you would demand to give that up at the termination of the lease?—It would not interfere with the existing leases.

Do you not think it would do so?—It ought not to interfere with existing leases.

Then your legislation would be entirely prospective, and to take effect at the termination of the present agreements?—Yes.

You would not wish to disturb existing agreements?—No, not existing agreements.

You spoke of cultivation by burning?—Yes.

Do you repeat that process on some lands?—I have not had occasion to repeat it; it is a new process done within the last eight or ten years.

Is it always pasture land you burn?—No, decidedly not.

Do you burn fallows?—Yes.

It is, in short, clay burning?—Yes, clay burning.

Have you ever breast-ploughed and burnt grass land?—No; I should not allow that if I were a landlord, as I think burning turf injudicious.

Is it good husbandry to repeat burning?—We have scarcely had a trial of that, my land does not require it, it is quite light enough with once burning.

Ashes, are they a permanent manure?—Yes.

For what period?—I have found benefit for six or seven years.

Is not that benefit great from the greater porosity of the land making it more friable and workable than as a manuring principle?—Both; it acts as a manure; there is ammonia in the ashes.

Does not that ammonia fly off in the first crop?—No.

Is it more permanent than for one crop?—Yes.

How many years would you be paid for it?—Probably it would extend to a period of seven years.

As far as that for ashes?—I think so.

Would you extend it as far as for lime?—Yes; it does not eat in the land like lime; lime will go down.

Have you used lime?—Formerly; not since I have known the process of burning.

Do you prefer the burning?—Yes, on a strong land.

Then is it from the greater weight of the lime that it sinks down?—No, not altogether; lime is a cold thing, and it makes it so very porous that some of the cold clay will blow away almost; it is bad for wheat.

Have you drained extensively?—The whole of my land.

At your own expense for labour and tiles?—Yes, at my own expense entirely; that was the condition on which I had a long lease.

For what period is that lease?—Twenty-one years.

And you began at the commencement?—Yes.

Do you think you would be repaid at the end of 21 years?—Yes.

Mr. BOUVERIE.] You had a stipulation in the lease as to that drainage?—Yes.

Mr. HAYTER.] You prefer a tenant right to the granting of a lease; you think it a better mode of cultivation?—A better mode for the country, generally speaking. I do not mean individually speaking. I should prefer a 21 years' lease.

Do you know practically where there is any mode of tenant right existing?—No.

Have you considered the mode by which practically that right could be worked out as between the owner of the land and the tenant?—I have seen nothing of it till within the last few days, and have heard very little.

Would you leave it entirely to the discretion of the tenant to put as much lime, or to marl or chalk to as great an extent, or to drain to as great an extent as he pleased, without any control on the part of the owner of the land?—No, certainly not.

What degree of control would you give to the owners of the land?—I would always have men fully capable of ascertaining and valuing what the tenant should be paid for; but I would guard the landlord so far as this, that though the tenant may spend a great deal of the landlord's money, he should not be paid for all that; in fact, it is more between the incoming and going-out tenant, than between the landlord and tenant; this bill would very little interfere with the landlords.

Sir J. TROLLOPE.] Would you not make the landlord the guarantee?—Yes, he must be the party guaranteeing.

And the party you deal with?—Yes.

Mr. HAYTER.] The landlord is a person, who on the occasion of a change of lease, is represented by the tenant incoming upon the old tenant?—Yes.

It is in fact between the landlord and the outgoing tenant?—Yes.

And it is in that state of circumstances you are asked whether you have considered the mode by which those compensations can be practically worked out. You are not understood to say that you have?—No.

But you have some general notion, that the right may be worked out pretty beneficially by means of arbitration?—I have no doubt of it.

Mr. T. EGERTON.] Does your arbitration apply to the termination of a lease, or during the time the improvements are taking place. You were understood to say, that arbitration was to settle the matter between the landlord and tenant?—Yes.

Do you apply that to both the power and extent of carrying out improvements?—Yes.

That is to say, if a tenant says, I wish to lay out a large sum upon lime or ashes in burning a considerable part of my land, would you give the landlord the power of saying, You shall not carry it out to such an extent?—No, but I would not pay that tenant for more than was thought necessary by competent persons.

Then according to that, every time that a tenant wished to carry out an improvement an arbitration must take place at once between him and his landlord?—No, I would allow the tenant to go on and do as he pleased to the end of his term, then I would have proper parties called in to say what compensation he ought to receive.

Mr. HAYTER.] That would be a compensation with reference to the improvement that the land had actually received?—Yes.

Not a compensation having reference to the quantity of money he had expended, but whether it had been expended beneficially?—Yes.

Mr. T. EGERTON.] How would an arbitrator know the state of the farm when the tenant entered upon it?—I think it would be taken generally some account of; the landlord or the agent would take some account of it, and generally the neighbours would know the state of the farm when it was taken; every one can see the improvement I have made for years, they all know it, and the increase of produce and various things.

Should the arbitration have regard to the amount you have laid out upon the farm, or the increased value of the farm at the termination of the tenancy?—He should look at it in both ways. I fancy of course the arbitrator would hear the evidence from the tenant upon the increased value of the farm, and from the landlord's agent; he would hear all the evidence upon both sides, and judge accordingly.

Mr. BOUVERIE.] If you laid out a pound, and that pound increased the value of the land a pound a year an acre, are you to be paid the amount which you have laid out, or the amount of improvement so many years' purchase when you quit?—I should say the principle would be the general improvement upon the farm, not of any one particular portion, but if you laid out a certain portion in bones, and that may be beneficially done, so that the poorest grass land may be made superior by laying out £5 an acre in bones, but the first and second years the improvement is scarcely visible; in fact it does not do any good the first year; the longer period the bones are upon the land the better the advantage is, therefore it should be extended over a period of years.

Do you think the landlord ought to be paid upon the cost of putting in the improvement, or upon the increased value that the improvement has given to the land; that is, on what principle is the arbitrator to go?—Upon the first principle.

The cost?—Yes, the cost.

Mr. T. EGERTON.] Then you would to a certain degree qualify the answer given before, that the arbitrators are to judge of the increased value of the farm?—Yes.

Mr. SOTHERON.] Unless that cost is produced in improvement the difference of cost is not to be carried into account; if it has done good the cost is to be the basis of the calculation?—Yes; if a man laid out money injudiciously, I would not pay him for it.

Mr. T. EGERTON.] Supposing a person has laid out a sum of money judiciously, and he has been paid both principal and interest by the end of seven years for instance, then at the end of the ninth year would he be entitled to receive any compensation?—No, decidedly not.

Although there might be an increasing value in the property?—No, I should say not; but what I want is for a man to receive the benefit of his outlay; if he has received that, then give him nothing; I should say you have got your compensation.

Mr. SOTHERON.] Suppose then, for instance, this improvement may have been drainage in the case suggested, do you at the end of nine years think that that drainage is as good as it was the first year; are the committee to understand no compensation ought to be given for that drainage in that case?—No, I should extend drainage to 10 years; it would be one-tenth each year.

Take then the 11th year?—I should say at the end of 10 years he is fully compensated. I have done a large quantity, and it has repaid me every expense the first year in some instances; I have received benefit the first year. I have 10 bushels an acre more, and expended £3 an acre in drainage, we did not then drain so deep as we do now; I have drained part of a field and left the other part undrained, and from that part drained I have got 10 bushels of wheat extra per acre the first year, which would repay me in that first year. I should say, generally speaking, if you go to the period of 10 years for under-draining it is quite sufficient.

And the cost of the improvement is the basis of your calculation, and that is diminished by the number of years that the profitable use of it has been possessed by the tenant?—Certainly.

Therefore at the end of the term of 11 years or 15

years, or whatever it may be, although the improvement may be just as valuable as it was the day it was put in, according to your principle there is to be no compensation?—No, there is no compensation required.

Mr. E. DENISON.] You are probably aware that in Lincolnshire and other parts where this tenant right for unexhausted improvement prevails, that is the principle upon which all the calculations are made?—I am not aware of the system in Lincolnshire.

Are you not aware that that custom which prevails in that part of the country is generally satisfactory, as between outgoing and incoming tenants?—Yes; I have heard so; I am going into Lincolnshire this summer to see the different customs; being unacquainted with them.

In answer to a question put to you, you said you thought that the tenant ought not to be allowed to enter upon a range of improvements without consultation with his landlord in the first instance?—Yes.

And subsequently you gave an answer that qualified that right, because you said you would allow the tenant to carry on his farm according to his own judgment, and that a valuation should be made at the conclusion of the tenancy?—Perhaps I did not clearly express myself at the time.

Do you think that it would be desirable that before improvements were made, communication should take place between the landlord and the tenant, and that the wish of the landlord should be consulted?—I think it would be perfectly right; if a tenant were to go and take a farm he should say, I shall make such and such improvements; I expect to be remunerated if you part with me at any period, if I do not hold my farm sufficient time to remunerate me.

Suppose there were to be some specific improvement in contemplation, that the tenant should say, I wish to lay out such a sum of money in drainage of such a land, supposing that the landlord should have a different opinion and should dissent from it, then what course would you propose?—I should then allow the tenant to go on.

Then if you would allow the tenant to go on, supposing the landlord dissented, there does not appear to be much use in consulting the landlord?—I do not think the landlords will generally object to it; they generally wish to see their estates improved.

But what course do you think would be the course that should be the prevailing one?—I would give it in favour of the tenant if you get landlords of that description who would say, "I will let my farm so and so, and you may do little or nothing upon it; I do not care so that I get my rent, whether the land is improved or not;" that would not answer the purpose aimed at, the improvement of the land to employ the labourers, and the growing of a larger quantity of corn.

The case has been put to you where excessive outlay has been made on the part of the tenant that has not answered its purpose; do you think excessive outlay of that kind on the part of the tenant would be ordinary cases or exceptional cases?—Exceptional cases, decidedly.

The ordinary and general course would be that the tenant looking at the probable occupation of his land would not be likely to lay out more money than he had a good idea would bring in its return?—Certainly you do now and then get an injudicious tenant, but generally speaking it is not the case.

Such a tenant right for unexhausted improvements would be in your opinion a good thing for the tenant; do you not think it would be a good thing for the landlord also?—Yes, more so for him than for the tenant.

Then those arrangements might be made perfectly well if both parties were agreeable, by agreement

between the parties?—No, I think not; I do not think they would be likely to agree; I recommend arbitration.

They might be?—Yes, they might be, it is possible to make them, but I do not think, generally speaking, they would do it.

The question is, whether those arrangements might not be made by voluntary agreement, if both entertained the same views?—They may be.

Then if they are beneficial both for landlord and tenant, how do you account for there being such an indisposition generally to enter into those arrangements?—The landlords, generally speaking, do not understand the thing.

Then do you think there is a reasonable prospect of those agreements being arrived at without some interposition on the part of the legislature?—Certainly not; there are a few country gentlemen who are fond of farming, and seeing their estates well managed; but there are others who care nothing about it, they live in town half the year, and labourers are half starving on the estates for want of employment.

The matters in dispute upon this point must be settled by valuers?—Yes, decidedly.

Considering the state of the country at present, with regard to valuers, do you think such important matters would be left satisfactorily to the present class of valuers throughout the country?—Yes; I think in the different localities the valuers would be well selected, or otherwise, if government were to appoint parties it might be more satisfactory in one sense, but to send a man down out of Kent to value in Worcestershire would be a difficult thing.

Taking the class of local valuers at present, do you think that those enlarged and extensive matters of arbitration could be satisfactorily left to them?—Yes, decidedly, I do think so; I think there might be men found; many respectable men make a profession of it at the present day; if government legislate upon the subject they ought to fix the terms upon which they should value, and what they should have.

Do you think it would be possible to fix the terms for different points of improvement in a bill, such terms as would answer for all counties and all soils?—Yes, I think it might be based upon a fixed and general principle, and that the arbitration should be left to the local valuers.

Do you think that draining and artificial manures could be fixed by law as being equally valuable, that they should extend over the same number of years in all localities and under all circumstances?—I do not think the soil of England varies so much but what you might fix it; if you use a certain quantity of bones in one part of England, I see no reason why they should not be as beneficial, and remain as long in the soil as in any other part of England; I do not see why burnt soils should not be extended, nor why drainage should not be as beneficial in one part of England as another; of course if you have local valuers, they would be enabled to make any little difference if there were any.

That is the point; would you leave those matters to the arbitration of local valuers, or try and fix them by the act?—I would leave them to the local valuers.

You have said that your experience is very great in burnt soils?—Yes, I have laid out some hundreds in it.

You have just said that you see no reason why the benefit of burnt soils should not prevail equally upon all strong lands, but have you not had experience that persons who have been sent by you to burn soils in other parts of the country have done so, and that very different results as to the benefit of it have arisen?—I think it depends entirely upon the soil that is burnt; on a very

strong tenacious clay it would be very beneficial in all parts of England.

If the benefit depends very much upon the sort of soil which is burnt, equal benefit could not be produced upon all soils?—No.

Mr. BOUVERIE.] You have stated that you would not think of applying this principle of tenant right to existing agreements?—No, not where the lease is long. I do not see how you could interfere with long leases, there are very few in existence.

What would you call a long lease?—Twenty-one years I call a long lease.

For anything less than that you would apply this principle for existing agreements?—No; I do not mean to say that. I do not think you would find one-tenth of England, or Scotland either, under lease; taking England, and Scotland, and Wales, I am sure you will not find one-tenth under lease.

It is more from year to year?—Yes, from year to year.

Then would you make it obligatory upon all future agreements to have this tenant right?—Yes.

And would you have no power on the part of the tenants and landlords to agree that those statutory enactments should not apply?—Yes, it should be applied generally and made compulsory.

So that if the landlord and tenant say, We do not wish to have this regulation as to our agreement, we would rather go on according to a fashion of our own, you would not allow them to do it?—No.

Mr. NEWDEGATE.] You have stated that the custom is very limited?—Yes, it is very limited.

Who does the manure belong to?—The landlord, when the tenant leaves.

Who does the off-going crop belong to?—The straw is left on the farm for the benefit of the succeeding tenant; generally speaking, that is the custom of the country.

Then the custom extends to this, that the last crop belongs to the off-going tenant?—Yes, to the off-going tenant, unless there is some specific agreement.

Does it apply to all grain?—It applies to all grain.

Then what liberty has the tenant coming on with reference to entry for the purposes of valuing the land; does any custom of that kind exist?—No general principle is laid down; I have known estates very much injured; there is a great deal of glebe land where there are no buildings upon; for instance, take a glebe farm; whether it is from the clergyman being so poor, or what, I know not, but there have been cases where there have been no buildings upon the farm; the produce is taken to the man's own estate or the estate which he occupies adjoining to it; if that man dies the produce is all sold from that glebe land and there is no manure whatever to go back; I have known the crops sold by auction, and no manure for two years.

That tends to the injury of the property?—Yes, that tends to the injury of the property; but if the tenant had had the power to erect buildings, by being paid for them, he would have gone on farming in the same way as with other land.

Would it be satisfactory to the tenants generally, if they had the same principle applied to buildings for agricultural purposes, as is applied to the buildings for the purposes of trade; that they should have the power of removing them if the landlord declines to take them at a valuation?—Yes, decidedly so; but I think, generally speaking, there would be but little done in the way of buildings.

Then generally the same principle that prevails with reference to buildings for trade would apply to agricultural buildings, and would be satisfactory?—No doubt of it.

Are you aware that many landlords in Worcestershire are only tenants for life, and therefore cannot enter into voluntary agreements for giving compensation beyond their own lifetime as binding upon the estate?—Yes, I am.

Do you conceive that if those landlords had the power to grant compensation they would in many cases avail themselves of it?—I do.

That would be a facility of awarding compensation by voluntary agreement?—Yes.

You stated that you would render the law you contemplated with reference to the extension of leases obligatory upon the landlord?—Yes.

Would you require notice to be served upon him of the improvements which the tenant intends to make?—Yes, I think there ought to be consultation between the landlord and tenant.

Would you adduce that notice as evidence of the improvement having been made?—Yes, I would.

Would you give the landlord power to refuse his assent to those proposed improvements?—No, I would not give him that power, certainly; it might be different as to making an unlimited thing; a landlord may fancy he is going to be put to an expense which he may not approve of: if a man is disposed to improve a farm, I would let him go on with it.

How would you decide whether the improvement has been beneficial or not?—By arbitration.

Would you refer the case to arbitration at the time the notice was served, or postpone it?—I would have an agreement that the tenant should give notice of what was required, and each party keep a copy of the agreement.

The question contemplates a case in which the landlord has declined the improvement; you say you would make the compensation obligatory upon him?—Yes.

What means would you take to decide whether that is an improvement for which the landlord ought to be made responsible, that is, whether the outlay be justifiable for the improvement of the land?—If it was not justifiable I would not give the tenant anything.

How would you decide that?—That the arbitrator would be capable of doing.

Then the arbitrator might be called in when the notice for improvement is agitated?—I do not see that exactly; I do not see that they will be required.

How would you avoid that in case of a landlord determining not to consent to improvements?—That is a question; I suppose the landlord would not do so; I do not think a tenant, unless he had some security, would lay out anything; I think they would part.

You propose by law to give him security?—Yes, I do.

If you propose by law to give him security, must you not decide whether it is advisable that this should be laid out in the first instance, in case the landlord declines?—I think you would scarcely find a case where the landlord would decline anything reasonable.

Cases may arise?—It is possible.

You state that at present the custom of giving compensation does not prevail?—No.

Therefore cases do arise?—Yes.

Would not a compulsory power involve the tenure of land in perpetual reference to arbitration?—Probably it might.

Would not it come to this, that the law would decide by empowering those arbitrators to decide on what conditions the land should be held, and that the owners of the property would cease to have any voice in its arrangement?—If you get very obstinate landlords, in some instances it may have that effect; I want to do away with the probability of being obliged to call in those

arbitrators at great expense in the first instance, if I possibly could.

Have you pointed out any means of doing that?—No, I have not.

Sir J. TROLLOPE.] Would not arbitrators be obliged to be called in still if you had an act of parliament, because you say you would do away with them?—In the first instance.

If you make the tenant right an obligatory thing by law, would not an arbitrator be called in in every case?—It is possible; but I would do away with it if I possibly could.

Mr. NEWDEGATE.] Your view of custom is, that it is more beneficial for a yearly tenant than in cases of tenure under lease?—Yes, exactly so.

And you believe that it will render tenure by the year advantageous by reason of improvement?—No doubt, to a great extent.

Does not this question divide itself into two classes, first, a compensation to the tenant for his outlay, securing him a proper interest and adequate profit, which is a matter of justice; and the second a question of improvement of agriculture generally, which is not a matter of strict justice to the tenant?—Just so.

Do you not think that what the legislature should contemplate is the question of justice only; you state there are two bases upon which the compensation should be ascertained, first the outlay, including the interest of the capital, and an adequate profit?—Yes.

And, secondly, the advantage of the general improvement of the farm?—Yes.

The question then comes to this, do you not think that the interference of the Legislature should be confined to that which is a matter of justice only?—Justice and right, probably.

If the question of improvement is to be contemplated by the Legislature for agricultural property, is there any reason why that principle should not be extended to trade?—No, I do not see why it should not.

Mr. BOUVERIE.] Have you seen the Chairman's Bill?—Yes, I have.

Have you considered its provisions?—Yes, and I approve of them very much.

Evidence of Mr. HENRY TRETHERY.

CHAIRMAN.] You are agent to Lord de Grey on his property in Bedfordshire?—Yes.

Lord de Grey has thought it right to adopt the principle of tenant-right compensation to his tenants?—His Lordship has.

Would you be so good as to state to the Committee what are the agreements which Lord de Grey has given to his tenantry?—Compensation is granted for unexhausted improvements, and it is divided into three heads, as well as I recollect, for drainage or for improvements of that description, and for others of a more lasting character, and for permanent improvements, such as buildings.

Could you state to the Committee the particulars of those different heads of compensation?—I could not detail them, but I could give the principal, which I think are for drainage; we allow ten or twelve years where the tenant finds tiles and labour; and for planting hedges and other such improvements we give ten years; and for marling and artificial manure and those things, which are left rather as an open question, from two to four years; it depends in the marling upon the situation of the marl and the quantity required per acre; and for buildings we give twenty years.

Is it long that this principle has been acted upon?—It has only been recently introduced.

Were those terms which you proposed acceptable to the tenants?—Perfectly so.

Do the tenants receive them in such a way as to show that they are disposed to improve the property?—I think so; in fact they have begun already to a certain extent.

The tenants have begun to act upon that principle?—Yes; with drainage particularly; it has not been in force twelve months yet.

Can you hand in to the Committee the precise agreement?—I have not got one with me.

Could you furnish the Committee with one?—I could furnish the Committee with the principles of them.

Is it your opinion that Lord de Grey incurs any risk as a landlord in granting those compensations?—I think not.

You think it is for the interest of the landlord to grant them?—Yes, I think it is for the interest of the landlord to grant them.

Would you state why?—We have a great many improvements that the landlord is frequently called upon to effect, for which he derives no immediate benefit, and perhaps not until the expiration of the tenancy, or until the death of the tenant, and many of them would be effected by the tenant himself if he was sure he would have the full benefit and the advantages that arise to him from them.

You seem then to think, that instead of a charge upon the landlords, it would be a pecuniary relief to them to grant a tenant-right?—I think it would be an advantage to the landlord.

You think it would tend to relieve the landlords from inconvenient expenses during the continuance of the tenancy; do you think it would be of any injury to them at the close of the tenancy?—No, I think not.

Do you think that although the in-coming tenant might be called upon to repay more than he would otherwise have to pay, that the better condition of the farm would in fact compensate the landlord for that claim?—I think the landlord should pay it himself, and then make arrangements with the in-coming tenant.

Do you think that the superior condition of the farm would render it easier for the landlord to find men of capital as tenants, than under the present system?—I think he would receive an increase of rent if those improvements are done with discretion; if they are really improvements.

If a field is to be drained on a farm, do you require the tenant to consult you previously as to the mode of doing it?—I expect him to give me notice, and if he is a person upon whose judgment I can rely, I do not perhaps give myself the trouble to look at it; but if it comes from a person I do not know much of, I should feel it my duty to see that the farm was drained according to my views.

With regard to marling, do you require a tenant to obtain your consent before he marls a field?—No, I leave it to the tenant's own judgment; I believe in the agreement it is stated he should notice give of all those things.

Then according to the mere letter of the agreement, the tenant is required to give notice; is the landlord's consent necessary?—I do not require it, but I think the landlord's consent is required as far as the letter of the clause runs; he shall be entitled to those compensations subject to the following conditions, and I think the landlord is to have notice of it.

Practically you think you may rely generally upon the judgment of the farmers as to such an operation as marling?—Practically I do.

Have you considered that inasmuch as he incurs the risk of the outlay in the first instance, he would do it in a way to benefit the estate by benefiting himself?—Yes.

It may be then concluded, as to the purchase of bones and cake, you would not require notice to the landlord?—No, if he claimed anything for them, the landlord would have to be satisfied that the tenant had expended the money upon them.

Mr. NEWDEGATE.] Do you think there is much prospect of Earl de Grey's example being followed?—I should hope there is; I think there is.

You think there is sufficient reason for believing that the example of his Lordship will tend to the establishment of such a system in the neighbourhood where it is carried out now?—I think the system would recommend itself.

You have seen very beneficial results from it already?—That has not been admitted, but it is in operation, and I believe such will be the result.

How long has Lord de Grey adopted this system?—About twelve months.

Does his Lordship provide all the buildings?—Yes.

Does he join in the expense of drainage?—Yes, it has been the custom hitherto for his Lordship to find tiles and the tenant labour; it is a system that I think not so good.

What is the present system, that Lord de Grey should undertake the whole expense of drainage?—That is the system I should recommend; the agreement provides for each case; in the event of Lord de Grey finding tiles they have five years, I think, for unexhausted improvements; but as an inducement to the tenant to find tiles and labour, and so relieve his Lordship of the tile for which he receives no compensation, I should give a longer period, say twelve years, if they held it as long, to induce the tenant to take the whole expense upon himself.

From practical observation, how long a period do you think it generally requires to repay the expense of drainage upon the estate you are acquainted with?—It depends so very much upon the description and nature of the land, some land requires much more outlay than others.

What is the present period in which the expense of drainage is returned?—I think in some instances, perhaps, the tenant reaps the benefit of drainage in one or two crops; those are the exceptions; I should not say that as the general rule; I should say eight to twelve years, and I think that is liberal.

What is the longest period before the expiration of which a person is repaid in those soils for the expense of drainage?—I think I have seldom if ever seen any drainage of so very extensive a nature but that the tenant might repay himself in twelve years; there may be some exceptions: I do not know that I have ever witnessed any.

Then you have adopted the ten or twelve years as an extreme period?—Yes, as an extreme period.

Was there any custom in the neighbourhood existing previously to the adoption of this system by Lord de Grey for compensation?—No, none that I have ever heard of.

Does the dung belong to the farm?—I believe it is a rule that the tenant leaves the farm as he finds it; the agreements would make the dung belong to the landlord.

And that agreement is confirmed by the custom?—No, I think not, but I think the custom is (but I have not been long residing in Bedfordshire), that as the tenant finds the farm so he leaves it; if the dung and the straw were valued to him as the property of his predecessor, he would be entitled to receive compensation from the incoming tenant by valuation; I believe that to be the custom of the country.

Then the custom does not extend beyond this?—I believe there are few such cases. I believe that the dung and the straw has generally been bought up by the landlord, so that is now the landlord's property generally.

Then the possession of the dung is not decided by custom?—Yes, it is decided by custom.

As being the landlord's?—It is decided by custom, inasmuch as the tenant, if he bought it when he entered the farm, is entitled to be paid for it when he leaves it; but if the landlord bought it, or it was his previously, then the tenant has no compensation in the event of his leaving it: so that custom guides it.

But only in cases where the practice of a particular property has established it?—I believe that is the custom generally; I do not speak of Lord de Grey's estate: I believe it is the custom generally.

That the dung belongs to the property?—It belongs to the tenant if he purchased the dung when he entered; that the tenant leaves the estate as he finds it: I believe that to be the custom.

Do you recommend any compulsory system of legislation by which a plan similar to that adopted last year by Lord de Grey should be enforced upon landowners generally?—I think that the tenant farmer should have security for any unexhausted improvements he may have made.

You have expressed your approval of the system adopted by Lord de Grey; should you recommend by law, that a similar system should be rendered binding on all landlords?—The details would not suit every estate; I should recommend the principle.

How would you provide for that principle; would you constitute any tribunal to test the efficacy of the improvements, or to decide by arbitration, whether they should be made, and how far the landlords should become liable; that is, do you deem it advisable that any tribunal should be established, which by force of law should decide whether improvements should be made, and how far the landlord should become liable for them?—I should leave that as an open question; I cannot conceive how any tribunal could decide whether any improvements should be made.

You think it would be carrying the operation of the law beyond its proper functions?—I think that practically the system may be laid down; that is, a general principle might be laid down, but the application or details of it must be carried out by other parties.

Then you would leave the application of the details to some other persons?—Yes.

Who would you appoint to decide them?—It must be left to valuers; I would take this opportunity of stating that I think it preferable that the terms of the agreements upon which those improvements are to be made should be settled before-hand by the landlord or his agent.

Supposing the landlord declined to become liable for certain improvements upon the farm, such as drainage, do you think it advisable that the tenant should call in arbitrators or other parties, and that their award should bind the landlord to pay compensation for that improvement?—I think if the landlord objects to any improvements that the tenant would wish to do, it would not be fair for the tenant to persist in the face of the landlord; that would be taking the management of the property out of the landlord's hand; but I do not think that such a case is likely to occur; and if the tenant chooses to do it, and he is a yearly tenant, the landlord may give him six months' notice, and then he could easily get rid of him.

Your opinion is that the result of such legislative interference would be that the landlord, if he objected, would give the tenant notice; speaking of permanent improvements, such as buildings and those things?—I think that in all cases of permanent improvements where the landlord might eventually be called upon to refund a large portion of the expenses, it is only just and reasonable that he should be consulted beforehand.

And if he had not an opportunity he would give the tenant notice?—I do not say he would.

Do you think it is probable that he would?—I would not offer an opinion upon that.

You think that that course is open to him?—No doubt; but I would not tie the tenant's hands so much for general farming.

You think it is desirable to afford facilities for landlords granting and tenants recovering compensation for improvements which they have made by agreement and consent between themselves?—I think it is desirable to afford facilities for doing so.

Mr. E. DENISON.] Do you think it very desirable that capital should be laid out upon land?—Yes.

Do you not think that everything which conduces to the outlay of capital upon land would be beneficial to the landlord as well as to the tenant?—No doubt of it.

Do you think there is any fear, in a general way, of an excessive and unreasonable outlay of capital being made on land, on the part of the tenants?—No, I do not think there is any fear of that whatever.

Mr. SOTHERON.] To what counties does the evidence which you have given with regard to the management of Lord de Grey's estate and the leases upon it apply?—Bedfordshire, Leicestershire, and Wiltshire.

Evidence of Mr. JOSEPH DARBY

CHAIRMAN.] Are you secretary of the Martock Farmers' Club, in Somersetshire?—Yes, I am.

Are you a farmer?—Yes, I am.

To what extent do you farm?—To 195 acres.

What is the usual time of entry upon farms in your part of Somersetshire?—Lady-day, generally.

Does the tenant take the awaygoing crop?—The customs are very different in my neighbourhood as regards that. In some cases they do take the offgoing crop; in some cases there are none.

Are the tenancies generally from year to year, or on terms?—The principal part are from year to year; but in a great many instances they are for short terms, about seven years.

What is the character of the land in your part of Somersetshire?—The character of the land in Martock, which is about 7,000 acres, and the land in the neighbourhood around there, is of a heavy sand and clay.

Is it in want of improvement?—Yes, it is in want of improvement generally, in point of drainage and of good roads.

What roads do you speak of; farm roads?—Yes, roads to the fields.

Roads upon the farm?—Yes; but I should say that the fields are very scattered in that neighbourhood; the farms are not together.

Is the want of roads upon those heavy land farms a serious injury to the farmers?—A very serious injury.

Do you think it would be desirable to give power to the tenants to make roads, with the right of compensation?—Yes, I do.

The present state of those farm roads you are understood to say is a serious injury to the occupiers of the land?—Yes, it is a serious injury; the farmers cannot get over them all. In some cases, for six months out of the year, I have known in very wet weather; even with horses, I have known them scarcely able to get upon their farms.

You say that drainage is very necessary there also?—Yes.

Have you ever known the land in your neighbourhood suffer very much for the want of drainage?—Yes. Two years ago the average yield of wheat, owing to the want of drainage, as I have heard several farmers in the neighbourhood of Martock say, was 12 bushels an acre, which included the drained as well as undrained land, but in many instances where it was undrained it

was not more than five bushels an acre. The land is considered excellent, and is rented at an average of 45s. an acre or more.

The farmers are puzzled sometimes to pay their rents, are they not?—It is not always the case; it depends upon the seasons.

Do you think that if the land were thoroughly well drained, they would be completely free from this loss?—Yes, 40 bushels an acre has been, I believe, in a good dry season, a very frequent occurrence there.

Do you know any case where the tenant-right principle has been adopted in your neighbourhood?—I know in one instance, the instance of Mr. Parsons, the steward of Lord Portman (although his land is not so heavy as the land I have been describing); I have it from his own mouth, that he has a long lease on tenant-right principles, and he is by far the most enterprising man in our neighbourhood.

Has he greatly improved the land?—He has greatly improved it; some of his fields are approaching to garden cultivation: his farm is nearly all drained, and nearly all subsoiled.

Are the farmers of your neighbourhood prevented from making these necessary improvements by the want of security for their capital?—Yes, my opinion is so.

Do you know of any cases where they have made improvements, and then lost their outlay?—Yes, I do; I know of one instance which has occurred very recently, where a tenant farmer in the parish of Martock had drained 12 acres at his own expense, and within four years he was obliged to submit to an increase of his rent of 5s. an acre.

Can you state any other case to the committee?—I know an instance in the neighbourhood of Chard, where a young man had his farm for about two years; he took it at Michaelmas 1845, and at the end of two years the estate fell into land; and he had ploughed one field of 12 acres three times for wheat, and manured it, and he was obliged to give up that without any compensation, and all the manures upon his farm, and he would have been obliged to give up the manure in his yard, but by applying to his solicitor he saved that: his apples also for that year he was obliged to give up.

But, generally speaking, the committee are to understand you that there is great room for permanent improvement in your neighbourhood, and that the tenants cannot undertake to make those improvements unless they have security for their outlay?—Yes, that is my opinion. I know of one instance where the occupier of a very wet farm drained a field of three acres, and then asked his landlord to allow him the outlay. The landlord, after a great deal of hesitation, consented, but told the tenant at the same time that if he drained any more he would be forced to pay for it out of his own pocket. The tenant held his farm on a lease for seven years.

Mr. NEWDEGATE.] You say most of the land is held upon seven years' leases in your neighbourhood?—No, most part of it is held upon tenancies at will, but a considerable part in my neighbourhood is short leases of seven years.

Do you see the land under short leases is better farmed than the land that is held at will?—I do not think it is, generally speaking; I have seen this with the short leases, that the farmers generally take the land at first in a very poor state; they try to put it into a better system of cultivation the first year or two, and then they take out of it the last year or two all that they have put in before, and so it is always returned into the hands of the landlord in a poor state of cultivation.

Is it your opinion that if the tenants had security for being repaid their outlay with proper interest and profit, that a yearly tenure would tend as much to good cultivation as a tenure by lease?—Yes, that is my opinion; with a proper tenant-right law, I think that they would generally improve; a tenant-right agreement would give them security to lay out their capital, and would be as well as leases.

You mentioned one case of a property in which compensation was given?—Yes.

Do you think that the example of that landlord is likely to be followed in the neighbourhood?—I cannot say whether it is likely, it may not be generally known that such is the case. Mr. Parson, the steward of Lord Portman, has a long lease, everyone knows that; he told me he had it on the tenant-right principle.

Then that lease upon the tenant-right principle is of recent date?—I believe so.

The fact is that the question of whether it is right and desirable to give compensation under agreements, has only lately been agitated in your county?—No;

within the last two years I think it has been agitated mostly.

Do you think that the principle is likely to be adopted by landlords, when they see the advantages that have accrued to Lord Portman?—I think it will be likely to be more general than at present. I heard a land agent say some time ago that he had adopted it in the neighbourhood of Taunton on some property.

You mentioned one case in which a farmer was in danger of losing the capital he had invested, and he recovered it on applying to an attorney?—Yes; that is in the case of a young man where his farm fell into hand; he did lose all the manure that he had upon his farm, and he was in danger of losing the manure that was in his yard, but by applying to an attorney, the party that the land fell into hand to was not enabled to deprive him of it.

Then as to that manure, was it by custom?—I do not know whether it was by custom or by law; it turned out to be his.

It turned out to be his when the question was submitted to a lawyer?—Yes.

(To be continued.)

ON THE CULTIVATION OF CARROTS.

SIR,—The cultivation of carrots by farmers in the southern and midland counties of England is in many places very little attended to, though I am aware many of them have an admirable soil for such a crop. Some time ago I had an opportunity of travelling through various counties in the south, when I could scarcely help taking notice of many fields, the soil of which seemed to be of a light, sandy nature, partially mixed with peat earth, lying almost unproductive, having evidently borne a very scanty crop of oats, or some other white crop; and unless such soil (if not sown down with grass seeds) get an extra quantity of very superior manure, a good or remunerative green crop to follow could scarcely be expected. It has, however, again and again occurred to me that carrots might be profitably raised on such a soil, they being unquestionably superior to turnips for feeding either horses, cattle, or pigs, as they produce a much greater quantity of sugar or saccharine matter than is found in Swedish turnips; and though a carrot crop requires a deeper soil than turnips, yet it will be found that they grow luxuriantly on a soil much inferior in quality than is required for turnips; and the reason is, that the tops or shaws are a great deal *lighter* than the tops of turnips, which though fed and nourished partly by the atmosphere, yet require almost as much strength from below as the bulbs.

In your most useful "Farmer's Magazine," the number for November last, which I have just read, I observe inquiry made by a correspondent, "the proper time to take up carrots, whether the green should be wrung off or cut off, and the best method to put them away, so that they may take no damage from heating or from the frost, and how many tons per acre are considered a fair crop of red carrots." As a few remarks with which I beg to trouble you may supply the information wanted by your correspondent, and as these ob-

servations may catch the eye of some enterprising agriculturist, who may be disposed to make a trial of a carrot crop on a small scale in place of turnips, allow me, through the medium of your useful and interesting journal, to state that I myself have seen carrots raised on a very poor, dry, sandy soil (free of stones, of course), which remunerated the farmer better than the best crop of wheat that could grow. This was on a very extensive farm near the small town of Thetford, on the borders of Norfolk, where, for a considerable period, I had, some years ago, an opportunity of acquiring a practical knowledge of the best style of English farming on a light, or barley soil. On that farm were several fields of deep black sandy soil of poor quality; one small field of nine acres had borne but a very poor and scanty crop of oats, averaging certainly not more than about 5 coombs or 20 bushels per acre. This field the farmer thought he would try with a crop of Altringham carrot the following season, and accordingly the field was thoroughly cleaned in the autumn, and afterwards ploughed with a very deep furrow, and allowed to lie over the winter, that the soil might get consolidated. In the spring, the surface, after being harrowed, was covered with a moderate top dressing of very short, well-rotted, farm-yard dung, and then ploughed down with a light furrow. The seed, after being prepared by rubbing it between the hands, and thoroughly mixing with fine sand, put into tubs, and after watering it for two or three days, that it might germinate, was then sown broadcast, and rolled down on the 14th of April, at the rate of 7lbs. to the acre. The crop was thinned and cleaned twice with the hoe during summer at 8s. per acre each time, and on the 1st of November a man with his two sons, to whom the job was let, commenced to take up the whole with three-pronged forks, made for the purpose, at 28s. per acre, including taking off the tops, which should be done with a *knife*;

and in order to prevent any sprouting or growing, a small piece of the carrot, about the thickness of a shilling, should also be cut off with the tops. Except what were required for feeding on the farm (which were carefully put into dry places, and mixed with fine dry sand to preserve them), the whole were carted to certain places on the side of the field, and pitted on the surface in the manner potatoes are done up; then covered with straw, and about six inches of earth. The best judges computed the crop, which was beautifully transparent and free from worms, to be fully 800 bushels, or about 22 tons per acre; and they were sold from time to time chiefly to noblemen and gentlemen who lived in the neighbourhood, to feed their horses, at the low price of only 6d. per *heaped bushel*, the crop, even at that price, being worth, after deducting expense of cleaning and taking up, &c., fully £17 per acre (without estimating the value of the tops, which were eaten very greedily by the cattle), and this on land which certainly was not worth more than 10s. or 11s. per acre as rent.

In place, however, of sowing the seed broadcast, the better plan would undoubtedly be to sow it in narrow drills, as being more convenient for thinning and cleaning, &c. The manure should be well decomposed farm-yard dung; for if only half rotted, the crop is sure to grow short, and probably one-third forked; what are technically called in some places, "fingers and toes." If irrigation by sewerage water from a town, or liquid from a dung-heap and farm-steading, could be applied as manure to a field for carrots, it would do admirably; but, from the situation of many farm-steadings, this would be almost impracticable without a great deal of expense, which few farmers would wish to incur.

The greatest care should be taken in cleaning the field thoroughly previous to sowing the seed, otherwise the weeds are sure to smother the young plants, which appear very small and sickly when they first appear above the surface. The first thinning may be done carefully with the common draw hoe, three inches broad; but the second thinning, or even perhaps a third may be necessary, should be done with the *hand*, and afterwards the sides of the drills cleaned with the *push*, or Dutch hoe.

Many agriculturists may object to the growing of carrots, simply because a proper market for them may be at an inconvenient distance; but every farmer who occupies land of any extent, and with a soil suited for the crop, should grow at any rate a few acres every year, as he will find them, for feeding horses, cattle, milk cows, and pigs, far superior to Swedish turnips; and the little extra expense for seed and labour will be well repaid by the superior fattening qualities of the crop.

I am, &c.,

JAMES D. FERGUSON, Land Agent.

Glasgow.

THE EXCISE AND THE MALTSTERS.

The following general order has just been issued to the officers of excise, or, as we believe they are henceforth to be termed, "the inland revenue officers."

"Ordered,—That in throwing grain out of the couch-frame at maltsters, for the purpose of ascertaining whether it has been illegally compressed, no objection be made to its being thrown back into the cistern in which it was steeped, and returned into the couch-frame, provided the cistern be empty and upon the same floor with the couch-frame; and so placed that the grain can be conveniently thrown back into it with the shovel in the ordinary manner of working.

"That in all cases in which grain shall, for the purpose aforesaid, be removed from and returned to the couch-frame in presence of two officers, each officer gauge the grain before and after the said operation, and the maltster have the benefit of any difference between their respective gauges; that is to say, the greater gauge of the two as ascertained before the grain is removed from the couch, and the lesser gauge of the two after the grain is returned thereto.

"That, from the 1st of April to the 1st of November in every year, no objection be made to the removal of the grain from the couch-frame to the floor at the end of twenty hours, instead of twenty-six hours, provided the officer or officers of this revenue shall have had two gauges of such grain in the couch-frame. But in case any maltster, during the period above-mentioned, shall, in his notice to steep grain, specify his desire to remove the grain from the couch frame at the expiration of twenty hours, from the time it shall have been emptied from the cistern into the couch-frame, and such grain shall have been emptied from the cistern between the hours of one and four o'clock in the afternoon, he be permitted to remove such grain accordingly, although the officers of this revenue shall have had one gauge only of the said grain whilst it remained in the couch-frame.

"It is to be observed, that no gauge of the grain, after it shall have been removed wholly or partially from the couch-frame, under the conditions herein specified, is to be treated as a couch-gauge."

DERBYSHIRE AGRICULTURAL SOCIETY'S PRIZE ESSAY.—A sub-committee of the Derbyshire Agricultural Society have met for the purpose of reading over and considering the merits of the essays sent in competition for the premium offered by Jonathan Thompson, Esq., of Stubbing Court, "for the best practical essay on the improvement of the Agriculture of North Derbyshire." The competition was of a highly creditable character to the candidates, all the essays conveying much practical information and sound judgment, laying open the neglect of landlords and the indolence of tenants. The committee unanimously decided in favour of the essay sent in by Mr. Jephson Rowley, of Rowthorne, who is to receive a testimonial from Mr. Thompson and the society in plate, with an appropriate inscription.

HIGHLAND AND AGRICULTURAL SOCIETY.

A monthly meeting of the Society was held in the Museum on Wednesday the 7th March.—Sir James Ramsay, Bart., in the Chair.

Mr. HALL MAXWELL, the Secretary, said that, before proceeding to the business in the programme, he would call the attention of members to a subject which had been before the February meeting, and which had excited very general interest—he alluded to Mr. Blackhall's method of reducing bones for manure. Since the last meeting he had received various communications on the subject. Among these he had one from Mr. Blackhall, with the model of an oval boiler, with a division inside to support the bones. Mr. Blackhall thought it would answer the purpose for farmers who did not possess steam-engines, and that it could be made for less than £10. Mr. Slight had made several experiments, with the view of ascertaining the effect of steam, and there were on the table samples of bones, which had been subjected by him to the action of a current of steam of 35 lbs. pressure to the square inch. They still retained their original external form, but so softened, that even the harder and more solid bones could be broken by the pressure of the hand. Mr. Slight was therefore of opinion, that the mere process of steaming was not sufficient to bring bones into a state fit for application as manure, but that a supplementary one of pounding or bruising was necessary. With that view he had put some of the steamed bones through a linseed cake breaking machine, which reduced them to a state somewhat coarser than common bone-dust. He then passed them through a hand corn-bruise, and, lastly, through a sieve, which brought them to the condition of the specimen before the meeting, greatly finer than any ordinary bone-dust. Mr. Slight was of opinion that the additional process of pulverizing might cost from 3s. to 5s. a ton. He observed Mr. Slight in the room, who would perhaps state to the meeting his opinion of Mr. Blackhall's proposed boiler, the model of which was on the table.

Mr. SLIGHT said that it was liable to many practical objections, which, in his opinion, would render it inoperative. As a combination of steam generator and receiver, or steaming vessel, its only advantage lay in the saving of two or three pounds in the outfit, which would be more than counter-balanced by the disadvantages attending its adoption. When there is a steam-engine working at high pressure, the connecting its boiler with a separate steaming-vessel, is simple and inexpensive.

Where there is no steam-engine, he felt assured that the economical course was to adopt separate vessels for generating and for steaming. The first expense would be a few pounds more, but they would soon be saved by avoiding the defects attending Mr. Blackhall's combination of the two vessels.

Dr. ANDERSON said that the subject of the preparation of bones by Mr. Blackhall's process had been remitted to him at last meeting of the Society, and since that time he had received several communications from Mr. Blackhall, as well as a specimen of the steamed bones. The examination of those had led him to a conclusion precisely similar to that which Mr. Slight had come to, namely, that a further process of crushing would be required, which, however, it was manifest, from the softened state of the bones, must be comparatively inexpensive. He had not been content with this only, but had also made an analysis of the bones, from which it appeared that they contained—

Water	12.66
Animal matter	27.37
Bone earth	59.97

These proportions did not materially differ from those of unsteamed bones, except that the amount of animal matter was somewhat less. This result, he thought, was of importance, because it appeared to him that the success of the process must necessarily depend to a great extent on the animal matter not being extracted during the steaming. For this reason, he thought it important that the steaming should be effected with dry steam, that is to say, that as little of it as possible should be allowed to condense upon the bones; for if it did condense, the gelatine would be dissolved out by the water, and he did not think that it could be economically recovered from the fluid by evaporation. Several communications had, since last month, been published on the question of the economy of the process; and he had also been favoured by Mr. Guthrie, of the North British Agriculturist, with the proof of a letter which was to appear in the next number of that Journal. The point of these communications was, that Mr. Blackhall had greatly underrated the price of bones, and overrated the cost of crushing. From the statements of the letter alluded to, it appeared that the bone-crusher had not more than 12s. per ton to cover the expense of crushing and obtain his profit. It was somewhat difficult to reconcile these contradictory statements.

The CHAIRMAN said that Mr. Dickson, Saughton Mains, would favour the meeting with some remarks on Reid's Two-Horse Subsoil Plough, as improved by Mr. Slight.

Mr. DICKSON said it was not necessary to enter into the merits of the practice of subsoil ploughing, that being already sufficiently well established, and all who had carefully obtained the depth to which the minute roots of both grain and green crops penetrate, where the soil is suitable for their reception, would at once admit the propriety of deepening the soil to the greatest practicable extent; but it might be interesting to notice very shortly some steps of its progress. Perhaps the earliest application that had been recorded in this country of an operation strictly analogous to the present system of subsoil ploughing, was that which is found in Holt's view of the agriculture of the county of Lancaster, rendered in 1794 to the Board of Agriculture. In that report, when treating of the ploughs of that country, Mr. Holt says—"Another instrument has been lately introduced, which Mr. Eccleston (the inventor) with propriety calls the *Miner*, which is a ploughshare fixed in a strong beam without mould-boards. It is drawn by four or more horses, and follows in the furrow of the common plough just made. Without turning up the substratum, this implement penetrates into and loosens from eight to twelve inches deeper than the plough has before gone; which operation, besides draining the lands, causes the water to carry along with it any vitriolic or other noxious matter by the substratum thus loosened. The roots of plants may thus penetrate deeper; in course of time, that which is but a barren substance may become fertile soil." Such, then, appeared to have been, sixty years since, the imperfect notions of the effect of what we call subsoil ploughing. It seemed very evident, however, that the miner was no other than our more modern subsoil plough; but the implement of Mr. Eccleston came before its time; for draining, which must necessarily precede subsoil ploughing, was in the end of last century but partially understood, whereas we now know that, until the system of thorough-draining is introduced into every field, there is no benefit to be obtained from subsoil-ploughing. The miner did not appear to have been adopted by agriculturists to any extent; perhaps it never went beyond Mr. Eccleston's own farm, and it was believed that this important implement lay dormant for nearly forty years after its first invention. The re-introduction and successful application of the implement was due to the indefatigable Mr. Smith of Deanston, who judiciously applied it in aid of thorough draining on his farm at Deanston, originally of very poor thin land, but which he very much improved, chiefly, it is believed,

through the instrumentality of the two processes combined. The great weight of the Deanston plough, and the large mass of its body, together with the comparatively small power which the ploughman could exert over so unwieldy an implement where the subsoil was unequal or stony, gave frequent occasion for complaints of the expense in horse power to work it. These complaints gave rise to numerous attempts to obviate the objection. Amongst the first of these stands that of the late Mr. Murray of Polmaise, who, by reducing the weight of every part of the plough, and the bulk of those parts that enter the soil, constructed a plough that two horses could draw, but its effects were considered much inferior when compared with the original. English agriculturists were soon put on the alert also. Amongst their productions may be mentioned, Charleburry, Blackheath, and Gabblo ploughs; but in all these, though they succeeded in lessening the force required to draw the implement that advantage was obtained in a greater or less degree at the expense of its usefulness. In most of the so-called improvements on the subsoil plough the penetrating members were so greatly reduced in bulk that their effects on the subsoil became more like those of the mole plough, forming a more detached small channel speedily to be reclosed—thick like those originally invented by Mr. Smith, whose effects were the severing, breaking up, and actually moving all the subsoil above a given depth, but without bringing it to the surface. Amongst the late improvements of this kind, Reid's subsoil plough held, perhaps, the highest character amongst English farmers, and had also been favourably received in Scotland; but while that implement possessed the advantage of being worked by two horses, it was encumbered to some extent with the same kind of inefficiency complained of all others of light construction—want of sufficient power to stir the subsoil. Mr. Reid, in the construction of this plough, overcame a difficulty that had been found to attend all those new forms of subsoil plough where a short share only, and a lengthened sole, had been used. In his plough the length of sole was under eight inches. He gave therefore, four wheels, running in pairs in the furrow before the share, thereby giving it great steadiness and facility in working. Reid's ploughs were made of wood, except the share, wheels, and other mountings, which were of iron. Mr. Slight, in 1847, had his attention directed to Reid's plough with a view to manufacture it entirely in iron, and to depart also from the two small cast-iron points employed in Reid's implements. On trial of the first one that was made, which was furnished with a flat share, he became more decidedly sensible of the inefficiency of all such forms of the share, wh

ther flat, or approaching to cylindrical, as in the case of Reid's. In order to remove these defects, his next step was to add two upright spurs, or cutters, to the back part of the share, and distant about four inches on each side of its stem. This alteration produced a sensible improvement in the action of the implement on the subsoil; the latter was now not only cut horizontally from its substratum, but was cut in three lines vertically. A partial raising of the subsoil, thus broken up, was also effected; while its partial admixture with the true soil produced that effect which there was good reason for believing to be the proper and legitimate object of the operation. Notwithstanding this last successful addition to the share, Mr. Slight, from further experience, yet observed a particular defect in it. Stones were liable to be caught and retained between the spurs and the stem of the share, in consequence of the three members being all placed abreast; and when such a circumstance did occur, the implement became heavier to draw, and at the same time much less effective, as it then carried a mass of accumulated earth before it. The remedy for this became at once obvious—the two spurs were carried backward until their front edges came rather behind the back edge of the stem. By this arrangement of parts, when a stone was caught by the spur, if small, the plough passed easily through the opening, and if large, it was thrown off laterally. It was thus also freed from the risk of choking by hard portions of subsoil being retained by the spurs, there being nothing left by which it could be retained. Another important result was also observable from this arrangement of the spurs; they seemed to effect the raising such a medium portion of the subsoil to mix with that above it as is just desirable, without being overdone. The implement was drawn by two horses, penetrating to the depth of six inches below the bottom of the common plough furrow, and with that depth the draught was the same as in the common plough taking a furrow of nine inches deep. In this respect, however, there would be variations arising from the quality of the soil and subsoil. Upwards of a dozen of these ploughs had been put in operation, and had all worked with the most satisfactory results. Amongst those who had adopted it might be mentioned the Marquis of Tweeddale—a high authority in deep ploughing. He first got one of the form just described; but the Marquis, ever ready where mechanical subjects were under consideration, suggested a change suited to adapt the plough to his own views and practice of subsoil and deep ploughing—being a more extended amalgamation of the soil and subsoil than was generally adopted or desired, and under which practice he had been eminently successful in profitably improving poor

clay land. With this object in view, he ordered a second plough from Mr. Slight, fitted, in place of the two spurs, with a square plate or mould board of two feet long and seven inches broad, springing from the heel of the share. This plate, if taken across, lies horizontally, but slightly concave in that direction above, while in the longitudinal direction it slopes upwards to a height of about fifteen inches above the sole. The implement was furnished also with a coulter, set for cutting the land side of the furrow. Thus equipped, the plough carries up a portion of the subsoil as high even as the surface of the field, and while it does so, a like portion of the upper soil falls down past the edge of the sloping plate, and occupies the place vacated by the thrown up subsoil. The plough performs this process very satisfactorily, and still with two horses. On a very recent trial of Mr. Slight's improvement, on a field on his (Mr. Dickson's) own farm, a comparison was made between it and a Smith's plough of rather a light construction. The common ploughs were taking furrows of from 9 to 10 inches in depth, and the subsoil ploughs going 6 inches deeper. The draught of each was measured by a dynamometer; the indications given by the common ploughs at the above depths, were from $6\frac{1}{2}$ to 7 cwt. for the two horses; that of the new subsoil plough was between $6\frac{1}{2}$ to 7 cwt. for the two; while the Smith's plough required four horses. Of the actual draught of the latter there was some uncertainty. The instrument was graduated only to 10 cwt., but in the trial the index was carried round to 12, and the actual draught must have been above even that. It went so far, indeed, as to derange the action of the instrument. Judging from the way in which the horses worked, it appeared that the four horses were exerting double the force of the pair in the new plough, while the work performed by the pair seemed in every respect as well done. Indeed, several practical farmers of great experience, who saw the work done, preferred that done by the pair of horses. The field operated upon contained 10½ acres imperial—the soil a clay loam of medium quality, with a retentive subsoil; it was drained in Autumn with pipes, the drains being $3\frac{1}{2}$ feet deep, and 16 feet apart; the ploughing was done across the line of the drain. The whole of the field, except one half acre which was left undone for experiment, was ploughed, and subsoil ploughed, eight days with two pair of horses, and one day with five pair (that being the day on which the Deanston plough was worked); the daily extent of ploughing was, therefore, one imperial acre per day. The expense thus of subsoil ploughing in a sufficiently effective manner, by the introduction of this improved implement, may be considered as being reduced one-half, say 10s. per

imperial acre. It had, besides, the advantages of being worked with far more ease than the old implement, and of involving less loss of time, when brought into contact with large stones; instead of requiring to be drawn back and relieved, it was thrown up and passed over the stones, which were afterwards removed. This great efficiency by means of two horses increased the sphere of usefulness of the plough, because the process of subsoiling could now be economically performed on small farms, where the old heavy plough could only be used at the inconvenience and expense of procuring additional horse power to that regularly employed on the farm. His object in bringing this subject before the meeting was a desire to give publicity to what he considered a great improvement in a very important implement. The efficient manner in which the work was done, and at so little expense, compared with any former subsoiling he had ever executed, seemed so desirable a result, as to be worth communicating to this meeting. He was not of opinion that every description of land would repay the expense of subsoiling; but he was quite satisfied that a very considerable portion of the arable land of this country, after being thoroughly drained, would yield a better return for the outlay on subsoil ploughing with such an implement as this, than for any other improvement that he knew. Mr. Dickson, throughout his remarks, illustrated the subject by reference to a variety of highly-finished models, which were on the table.

Mr. DUDGEON, Almondhill, said he had much pleasure in confirming what had been stated by Mr. Dickson in reference to this subsoil plough. He had seen the experiments conducted on Mr. Dickson's farm, and had put his hand to the plough. He possessed two of Smith's ploughs, which, from their unwieldiness and expense in working, had been but rarely used by him. The process of subsoiling was now rendered comparatively easy and economical. He intended to follow Mr. Dickson's example, and had ordered a plough from Mr. Slight.

Mr. FINNIE, Swanston, said, he did not rise to dispute the alleged beneficial effects of deep cultivation. On the contrary, he considered the stirring of the soil to the greatest possible depth one of the essential requisites in order to insure success in farming; but in practice, how should this be done with most profit? On certain soils, such as those where moor pan required to be broken up, and likewise on those where it might be injurious, from the scantiness of the soil, to turn up at once with the ordinary plough too great a proportion of the subsoil, subsoil ploughing was of the utmost importance; but, on the other hand, where there

was a depth of active soil, say from nine to ten inches, he, from his own experience, would say that more benefit would result from making the ordinary plough go an extra depth; and, by putting in three horses, when the fallow break was turned over before winter, this could be easily accomplished. He had every confidence in the perfect and judicious manner Mr. Dickson was performing the operation of subsoiling, and he was further convinced that, whether when subsoiling or not, no farmer cultivates his land more thoroughly with the ordinary plough; and the same he would say of Mr. Dudgeon; but he (Mr. F.) had seen much subsoiling gone about in a way the very reverse. For instance, the ordinary plough first taking a furrow of three or four inches, and the subsoil following with about as much more—in short, both not going to the depth an ordinary plough should do, and the parties supposing and asserting that they were stirring the soil to at least from fourteen to sixteen inches. In no case, he would say, could subsoil ploughing do harm; but, the question was, are there not soils where it would be more advantageous to adopt another method of cultivation? His object, therefore, in offering these remarks was to direct attention to the fact that on many soils it would be more profitable to the farmer to substitute for subsoiling the greatest possible depth it was practicable to turn over the fallow break with the ordinary plough, and whatever extra labour he could afford to expend with his horses let it practically be in that way. He (Mr. F.) had subsoiled extensively on his own farm; but since he had followed the practice of extra deep ploughing, even turning up a good deal of the subsoil, though not of the best, his crops of grain and grass fully satisfied him—what, in his case, was most remunerative. Deep ploughing, he would say, was the exception and not the rule; and many, he was sorry to say, could expatiate upon the advantages of subsoiling, while their servants were allowed to fallow down their land, with a depth of furrow, by the ordinary plough, which was a perfect apology for the manner in which that important work should be performed. Lime and other manure invariably sink into the land, and by thorough ploughing it was again brought to the surface; this certainly was of some importance. In conclusion, he would say, ensure the lands being ploughed where the depth of soil will admit of it, to at least not less than ten or eleven inches, once in the rotation; and better go over the whole fallow break in this way, than make a fashion of subsoiling in the imperfect manner it was generally done; and, in fact, on many soils, from stones and other interruptions, it could not be otherwise. If, however, subsoiling was had recourse to, let masters

overlook carefully the operation; for, depend upon it, it is most apt to be done in a superficial manner, as the general impression among servants was, that they are called upon to kill their horses, while they are doing very unnecessary work. Few, however, of them will be bold enough to say that they can be excused for not taking a good deep fallowing down fair with the ordinary plough.

Mr. MACLEAN, Braidwood, said he could not allow the present opportunity to pass without recording his hearty approbation of the subsoil model plough now exhibited, as improved by Mr. Slight, and fully described by Mr. Dickson, as being of easier draught, less expensive, and as efficient as the cumbrous one invented by Mr. Smith of Deanston. Subsoiling was of infinite importance as an accompaniment to thorough-draining, and he believed it proved beneficial upon land of good and middling quality even without drainage. He could not, therefore, agree with Mr. Finnie, in thinking that where deep ploughing was practised there was little or no use for subsoiling. He believed it had been found generally useful upon all soils. Under many soils you find the subsoil of a tenacious nature, impervious to water; subsoiling allows free egress into the drains, and likewise a better spread for the roots of plants. He hoped to see the process more frequently practised, and the new plough in general use. There had been many occasions when every means for increasing production were found necessary by the farmer to enable him to meet his engagements, but never was this so imperative as now, when the agriculturist, the heavy-taxed agriculturist, of this country has been doomed to compete with the untaxed and otherwise highly privileged foreigner. He thought the meeting owed much to Mr. Slight for his improvements in the implement, and to Mr. Dickson for his experiments with it.

Mr. DICKSON said that if there was any credit in the matter it belonged to Mr. Slight. The improvement was altogether his, and had only been tried on his farm. He might mention that Mr. Slight's attention was first called to the implement in its original form by Colonel Kinloch of Kilrie.

Professor DICK said he had been induced to come forward to offer a few remarks on the consequences arising from injudicious feeding of horses, which, if made known, might be prevented, and much disease avoided. The subject was a wide one. A great number of diseases arose from the difference of feeding; but, as the time of the meeting had been already much occupied, he would be as brief as possible. He brought forward the subject now, because at this season agriculturists were anxious to get on with their work, and they therefore kept their horses longer in the yoke, and, after

the fatigues of the day, allowed them perhaps an extra pailful of boiled food. The horse was, by nature, always feeding. His stomach was small, and able only to contain small quantities at a time; and if it was gorged, disease was at once induced. He observed a gentleman now in the room who had in one year lost about a dozen of horses from these causes. The horses were allowed to be indulged by the servants with an extra pailful—the stomach was not enabled to act—digestion was suspended—and death was frequently produced in a few hours; if not, some other disease, such as acute founder, ensued. Now, all this might be prevented by very slight attention to the practice of feeding. If horses were allowed to stop and feed twice a-day, instead of being worked six hours, and then allowed only one, or at most two, hours in the forenoon to feed—or were the day divided into three portions—the digestive process would go on more readily. Even if no more time were allowed, the division of his feeds would be more in accordance with his nature; but when he is fatigued with long-continued fasting and hard work, the powers became exhausted, and the natural processes do not go on with the same readiness, and rest and time are required. When a person is on a journey, and pressed for time, he frequently gives his horse some oatmeal and water instead of corn—forgetful that digestion must have time to be re-established and set agoing, otherwise disease is likely to arise in another form, and the stomach is often burst by the generation of gas from suspended digestion. But the greatest harm is done by over-feeding immediately after the day's work is over. After working hard all day, and returning to the stable in the evening hungry and fatigued, the horse is indulged with a full allowance, which is placed before him at once; he overloads his stomach, and indigestion takes place. All this occurs soon after the men have left the stable, and, unless the noise he makes is heard by chance, he is often found dead in the morning. After the day's work is over, instead of a pailful (which is the ordinary allowance) being given on their returning from their work, he would recommend only a quantity sufficient to take off the edge of the appetite, and in an hour and a half afterwards the rest of the feed. He would strongly recommend this plan to be adopted at all times, but especially at this season. A gentleman in the room to whom he had recommended this plan, who had previously lost many horses from indigestion and its consequences, has for several years subsequently scarcely lost any, and these only when, from some accidental cause, the proper precautions had not been taken. There was another circumstance which he wished to bring before the meeting. He would call attention to the practice of giving horses food

of an improper description. In the neighbourhood of mills, husks were sold at a small price, and were mixed and boiled up as food for horses; this was always dangerous, and was the common cause of an accumulation of dust balls in the stomach and intestines. He called the attention of the meeting to specimens which he laid on the table. These balls were often found in large quantities. He exhibited four balls of large size taken by him from the same horse, and he had seen half a dozen as large as those on the table, taken from one horse, which must have been formed in about six weeks, as the horse had never tasted the kind of food until within that period. This disease was most common in Scotland. In England, especially in the chalk districts, another form of concretion was found; there, instead of the dust, or, as some call them, dung-balls, calcareous concretions are formed, specimens of which were shown. The progress of the disease was sometimes slow, at others very rapid—fresh coatings grew with fresh applications of the same food, and ultimately the passage through the intestines was generally stopped, causing inflammation and death; in other cases the balls remain stationary in size and situation, if the kind of feeding is withheld. He suggested the propriety of doing away with such food—it might be used for years without bad effects; but some accidental cause might produce a nucleus for the formation of a dust-ball from the fine particles of barley or oats. Another circumstance which he found to be attended with much evil, was giving roots, such as turnips, carrots, and potatoes, without being washed. Some thought these roots should not be cleaned at all—they believed that earth promoted digestion. Horses no doubt were sometimes fond of it; instinct taught them to eat earth when acidity existed in the stomach. They might, however, take too much; and though a remedy for a disease to a certain extent, it was not to be given when the disease did not exist. He had seen 1 cwt. of earth taken out of a horse which had been destroyed by it. He would, therefore, recommend that all roots when given to animals should be washed. Among the various effects arising from overgorging of the stomach, he would particularly notice one which frequently follows it—that is acute founder, the ultimate effects of which fall principally on the feet, and produce very destructive effects upon them. When a horse has to a certain degree escaped some of the immediate consequences of indigestion and gorging of the stomach, it frequently is found that he is affected with this disease. The sympathy which exists between the stomach and skin is generally known, and appears in a great measure to direct the course of this disease; as a consequence of the derangement of the digestive process, a de-

gree of sympathetic fever is induced, a certain amount of increased irritability of the skin is produced, to the extent, in some extreme cases, of a tendency to throwing off the hair, even of the mane and tail; and as the hoofs are of an analogous nature, are similarly affected, but in consequence of their forming a close envelope of the sensitive and highly vascular foot, a reaction takes place from the hoof confining and compressing it, and being acted on by the laws of inorganic matter evaporation is produced, which leads to contraction, and consequently increases the disease until the combined and violent action may lead to a detachment of the hoofs, as shown by the preparations, or a descent of the sensitive foot through the hoof takes place. Various other causes tend to produce this disease, and some of them are combined; but it was not his intention, nor was there time, to enter on these. In the early stages the disease might be mitigated, if not altogether removed; but inflammation succeeded rapidly if not checked, and for this purpose he recommended copious blood-letting as the chief remedy. The shoes must be taken off, the sole thinned—even until the blood may ooze through the horn—the crust cut down, and the foot enveloped in soft poultices. The horse from stiffness and pain will, if not attended to, often stand for days; but he should by all means be induced to lie down—and this may be done by lifting one fore-foot, holding it awhile, and then, when he inclines towards you, pulling him over; he should thus be kept quiet, paying attention to changing his position, to prevent him chafing himself, opening the bowels gently, and giving moderate doses of cooling medicine. With care, cases have occurred where, when even all the four hoofs have come off, the horse has so completely recovered as to have been sold sound and without any trace of the disease being to be found.

On the motion of Mr. RUSSELL of Aden, the thanks of the meeting were voted to Sir James Ramsay for his conduct in the chair.

GRAIN RENTS. — At the first outset, such was the terror of the farmer at rents agreed on to be paid in money in proportion to the price of grain, in the event of late seasons, that he insisted on a *maximum* rate which the rent should not go beyond. In such cases the landlord claimed a *minimum*, under which the rent should not fall. The maximum rent for the most part agreed on was at first £4 for the three bolls, and the minimum £3. Latterly, however, maximums and minimums have formed no part of the agreement. Under these regulations, such has been the downward tendency of prices, that land formerly let at from £4 10s. to £5 an acre, Scots, though still represented by the same quantity of grain as at the first conversion, will not now bring a rent of £3 for the same extent of ground. Inferior soils have fallen proportionately in value. During the past twenty-eight or thirty years, grain rents have enabled many an honest and industrious farmer to keep his head above water; and now that he has to compete with the whole agricultural world, he may still find them useful, and, moreover, absolutely necessary.—North British Agriculturist.

A LECTURE READ AT THE EAST CORNWALL EXPERIMENTAL AGRICULTURAL CLUB,

BY JOHN WILLS, OF SOUTH PETHERWYN, FARMER AND LAND-VALUER, AND MEMBER OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND,

"ON THE MOST PROFITABLE METHOD OF TURNIP FEEDING."

MR. PRESIDENT, AND GENTLEMEN,—In attempting to offer to your notice some observations on "the most profitable method of turnip feeding" I confess I feel the importance of the subject to be such that, notwithstanding my experience of 30 years in the matter, I feel great difficulty in doing it justice; because there are so many ways adopted, and perhaps all may lay claim to merit, that to define and point out the only profitable method for all farms under all circumstances is next to impossible. But besides, gentlemen, these observations are intended to lead to an after discussion which I conceive will be far more valuable than anything I can offer you.

The cultivation and storing of the turnip was so ably and so practically laid before the club at its last meeting that I have only to remind you, on this point, of the care, expense, and judgment required in the preparation of the soil, the selection of seed, the time of sowing, and the anxiety that must always accompany the growing a turnip crop. This must not be lost sight of: I wish strongly to impress it on your minds. You will, I am sure, clearly perceive that, if this crop is not profitably and judiciously consumed, all the former care, expense, and judgment will be lost which would ultimately damage and greatly discourage the cultivation of this valuable root. Hence the advantage, the utility of meetings of this kind, where all things connected with agriculture can freely be entertained and discussed.

Gentlemen, we will now suppose we have a given number of acres of turnips ready for the use of cattle; the mode in which this crop is to be consumed follows in natural succession. This was a matter, 40 years ago, in this county of very little importance. At that period it was thought a wild speculation for a man to attempt to grow turnips, except in an old favoured meadow. I remember perfectly well my grandfather, who at that time farmed upwards of 300 acres of the first-class arable and turnip land in this county, had the courage to grow a few acres of turnips, which created great excitement and wonder in the neighbourhood. But now I have no need to tell you, that on all well-cultivated farms the turnip crop is always grown in

the rotation, and comparatively (thanks to the ingenuity of implement makers) with as much ease as any other; therefore forming a considerable feature in the returns of the farm.

As I have the honour of speaking before some gentlemen who, I presume, are not practical farmers, and therefore may naturally suppose if a man has grown turnips for cattle he has only to give them to his stock and his object is obtained, it will be my duty to show (as I most anxiously wish to make myself intelligible to them and to all) that what would be a profitable method of turnip-feeding on one farm would be quite the reverse on another.

To put this matter in as clear a light as I can, I will first tell you how the turnip crop is consumed in some parts of England, and then show you, according to my view of the case, "the most profitable method of turnip feeding" in our neighbourhood, so that it may come home to the door and pocket of us all, and conclude with briefly alluding to the farm buildings and to the memory of a gentleman who introduced the turnip-husbandry on the correct principle into this county.

Gentlemen, I will now proceed with the mode in which the turnip crop is consumed in many of the great turnip-growing counties of England.

On light and mixed lands a proportion, regulated by the texture of the soil, is fed off by sheep; if very light two-thirds, if mixed one-third, the remainder being consumed by cattle in yards. Of late years Gardiner's turnip cutter has been introduced, which has effected an important alteration in the economy of consumption, by enabling the flockmaster, at a slight expense beyond that of the machine, to carry a larger number of sheep, and more profitably on the same space of land. Instead of allowing the sheep to feed from the land, and with the mould adhering to the roots, the turnips are now principally drawn, cut, and put into troughs, placed at various parts of the field and moved daily, in order to secure, as far as is possible, an equal teathe. The great point in this mode is, that the sheep unquestionably fatten quicker, are kept generally in a better state of health, and there is less probability of loss. The sheep are confined sometimes by hurdles, sometimes by net-

ting, supported by stakes placed at regular distances, which plan has lately very much come into use; sometimes on large folds on wheels. These are hooked together and dragged by a horse where required. Others, again, are made with wooden frames, and ledges of an half-inch iron wire, each 21 feet long by 3 feet 6 inches deep. At the commencement of the season the white turnips are thrown on the subbles for the store cattle, or, if consumed in yards (which is the mode I should recommend), are sliced by boys, whose duty it is to keep the bins supplied, the offal being always cleared out whenever a fresh supply is required. A number of pigs are by this means fed at comparatively little expense. On the good loams and heavy soils the turnips are all drawn off the land for consumption by bullocks; comparatively few sheep are fed with turnip in these districts, as the soil is so fertile, it being thought that straw rather than corn would be the consequence were the lands highly teathed.

Having explained the method generally adopted in the turnip-growing counties for consuming turnips, I now come to our own less-favoured county of Cornwall. In order to give you a clear view of this question it will be necessary for me to take a general view of the country, and, as our soil and climate differs so materially, to select three farms by way of illustration.

Gentlemen, should I be so fortunate as to secure your attention, to awaken your mind accurately to feel the subject, I think it will lead to a calm and sensible discussion, which I invite and fully expect from the enlightened company I have the pleasure of seeing around me. It is well known that on some farms no animals are bred, but that all bullocks and sheep are purchased for feeding. The farm of this description I will call No. 1. It is equally true there are other farms that rear, or, if you please, breed, a certain number of animals, and fatten them all at a certain age for the butcher. This farm I shall call No. 2. Again, we have the rearing farm; this is a farm for rearing or breeding stock for others to fatten. This plan is found the most profitable way of managing this estate, which I will call No. 3.

Gentlemen, having brought these three farms before you, which will be sufficient for my present purpose, I beg to offer to your notice No. 1. This farm, you will be pleased to remember, breeds no animals, but purchases all cattle and sheep to fatten. Now, it appears to me, the object every intelligent farmer ought to have in view is profit; consequently he should know the most profitable mode of converting his turnips into money. It will, therefore, now be his duty to select, as Bakewell happily expresses it, the best machine for convert-

ing turnips and other food for animals into money. For this purpose it is necessary to ascertain the shape and nature of the animal which makes the most profitable use of the food it eats. Giving the farmer credit that he is fully up to his business, the next thing for his consideration is how and in what quantities he will daily consume his turnips.

He knows the number of acres of turnips on his farm, and also whether the crop be a good or a bad one, and what quantity of other food he has for his stock, which will guide him as to numbers of cattle and sheep to be purchased, and also as to the quantities of turnips to be daily consumed, so as to have enough to fatten his cattle in proper time. Every prudent man will keep this in view; depend on it, no greater mistake in turnip feeding can possibly be made than to have consumed all your turnips, and your cattle not fat for the butcher. It would, in fact, be a complete sacrifice of the turnip crop. From my experience, added to the valuable authority of many practical men, amongst whom I will mention Mr. Morton, on Earl Ducie's Whitfield Example Farm, in Gloucestershire, the most profitable method of turnip feeding on No. 1 is to purchase half-fat oxen, cows, or steers; and also sheep; the cattle to be confined in stalls or boxes, the sheep in yards or the field. This unquestionably is the most profitable method of turnip feeding where cattle are to go direct to the butcher; but if intended to go on grass the ensuing spring, the cattle should have a nice, well-constructed yard for their winter's quarters instead of the warm stall.

The quantity of turnips per day for an animal must entirely depend on the quantity and quality of other food made use of; many experiments have been made on this subject, but the result is that all animals require, according to size and appetite, a sufficient quantity of food, so as never to let them feel what hunger is; and this food must be regularly administered, otherwise the animal will not fatten so as to afford a profit. Therefore strict attention to diet, cleanliness, warmth, and comfort are requisites that no man must dispense with, if he wishes to make turnip feeding profitable.

Gentlemen, there is one remark more connected with this farm that I must not omit, namely, "the grazier's profit." Now this will depend more upon the goodness of the breed than upon the size of the cattle; and the secret lies in discovering those kinds which in the shortest time gives the greatest quantity of flesh with the smallest quantity of food.

Now, I trust I shall not be considered presumptuous if I give you a short, but true, statement of the correctness of this remark; for I conceive anything that comes within our own knowledge, and proved by practice to be correct

and advantageous, will afford some degree of satisfaction. In the month of May, 1845, I put two of my dairy cows (North Devons), bred by myself to fatten; they were, from the scarcity of fooder—which at that time was universal (and on farms that had a full stock, more distress for food for them was never in our day known)—in very low condition indeed. I believe if the two cows had been offered for sale at the time they would not have made more than £16. However, I made them two very good Christmas fat bullocks, and sold them to Mr. W. Jasper, who had them at the following Launceston Christmas market for upwards of £47.

I do not make this statement to call forth any compliment to myself, but to prove the advantage of well-bred cattle, and that the secret lies in discovering and selecting those kinds which in the shortest time give the greatest quantity of flesh with the smallest quantity of food. Hence the necessity of every man having a perfect knowledge of his profession.

I now come to No. 2. This farm rears a certain number of animals, and fattens them for the butcher. Here we find one of the causes of the great improvement that has taken place in the breed of cattle. Meat is at present, and must continue to be, in this country the object most generally attended to; and it is certain that the breeding of cattle and sheep for the shambles was never carried to such perfection as it has lately been brought to in England. The cause of this it may not be improper briefly to explain. Stock was formerly bred by one set of men, fattened for the market by the second, and killed by the third. Whilst these three occupations continued distinct, with only occasional communication or intercourse with each other, no great improvement could be effected. That division of labour or separation of professions so useful in manufactures was injurious to this important branch of agriculture, by preventing the principles on which the improvement of our domestic animals might be effected from being ascertained; but no sooner did the two distinct occupations of breeder and grazier become united than great skill was acquired in preserving the breeding stock in the highest possible condition, and we were thus enabled to ascertain the principles not only of breeding domestic animals so as to answer the common expectations of the farmer, but also of bringing them to a degree of perfection they were scarcely supposed capable. This attracted public attention, and that of the farmer in particular, to the art of breeding such stock as would best pay him for eating his turnips and other food, which has most essentially benefited the great and vastly increasing population of our beloved country.

Gentlemen, I will suppose the number of cattle annually bred on this farm to be ten, and that at a certain age the best heifers are selected to go into the dairy to replace the cows that it would be well, under ordinary circumstances, to draft or cull out annually; so that the number of ten well-bred beast would yearly go to the butcher. These will require the same management and food as the cattle on No. 1; and in addition to these the breeding stock and others of all ages require equal care, attention, and judgment to carry out the principle of the most profitable method of "turnip feeding." Some spirited farmers have been in the habit of keeping their fattening sheep in a yard during the winter months, and feeding them with cut turnips, chaff, and in some instances cake or corn. This plan is universally adopted by Mr. Morton at Whitfield Farm. Mr. Snell, of Landulph, has also for some years pursued this system. However pleasing it is to read or hear of any matter tending to improve the mode of turnip feeding or other matters connected with agriculture made at a distance, no one will deny, if made in our own neighbourhood, the interest felt is much greater and more satisfactory, especially when made under the direction of a gentleman who stands so deservedly high in all agricultural matters as my excellent friend, Mr. Snell. It has been my good fortune to witness his sheep feeding system during the winter months for many seasons, and I am satisfied that any man, on looking at it attentively and dispassionately, would be desirous to go and do likewise. In the prize report on the farming of Cornwall, page 54, is the following note:—Mr. Snell's shed is 70 feet long, 12 feet wide, having a yard attached about 50 feet by 20. This will contain 50 sheep. They are fed three times a-day with sliced turnips, in a manger placed against the inner wall the whole length of the shed. The yard and shed are prepared by laying down, during the summer, six inches of earth, and upon that are hedge parings (which are cut, ricked, and thatched for the purpose) and stubble; so that when the sheep are first introduced there is a bed about one foot in depth, and upon which is afterwards daily laid straw or hedge parings from the rick. When the bed becomes inconveniently high for the manger it is removed, and a fresh one applied. Mr. Snell adds: "I have not found my sheep kept in this manner more liable to disease than others, except the foot-rot, which was easily prevented by carting a quantity of earth in the form of a mound in the centre of the yard, upon which was occasionally strewed small quantities of slacked lime; and this simple remedy has ever since prevented the disease." I take the following from the "Cornwall Gazette," July 10th, 1846:—

PROBUS FARMERS' CLUB.

FEEDING SHEEP.

It will be in the recollection of our agricultural readers that a resolution was passed several months since by the members of the Probus Farmers' Club, to undertake a series of experiments on the feeding of sheep on Barteliver Farm, under the management of Mr. Rd. Doble, in order to test the experiments of Professor Playfair and Mr. Morton, conducted on Whitfield Farm, on the same subject. The result at Whitfield showed that five sheep fed under a dark warm shed consumed less than one-half the quantity of food consumed by five fed in the open field, with an increase at the same time of four pounds more mutton during six weeks. The argument drawn from this was, that warmth was an equivalent for food, and that the protection afforded was equal to a certain amount of turnips, and that therefore food may be economised by protecting the farmer's live stock from cold and wet during the winter. The experiments on Barteliver Farm during twelve weeks, from December 5th. 1845, to the 25th February, 1846, show a different result from those on Whitfield Farm. Three lots of Leicester sheep were selected from one flock, of nearly equal weight, each lot consisting of five sheep.

No. 1 was fed in an open field, exposed to the vicissitudes of the weather, on an unlimited quantity of swedes and grass.

No. 2, Fed in an open house, having a yard attached, and therefore less exposed to the influence of atmospheric changes than No. 1.

No. 3, Fed in the dark, in a close warm shed.

The two last lots had an unlimited supply of hay and swedes, and the weight of each consumed was accurately determined daily. The weight of each lot of sheep was ascertained before the commencement of the experiments, and the results are as follow:—

Lots.	Average live weight, Dec. 5, 1845.		Average live weight, Jan. 17, 1846.		Average live weight, Feb. 28, 1846.		Average weight of roots for 12 weeks.		Hay for 12 weeks.		Increase.
	lbs.	qr.	lbs.	qr.	lbs.	qr.	qr.	lb.	qr.	lb.	
1	103		117		122	10	0	0			lbs. 19
2	109		116		120	11	1	22	3	5	11
3	108		112		119	11	1	4	3	22	11

In reviewing these two series of experiments, and when such different results have been obtained on Whitfield and Barteliver Farms, the difference in the temperature of the two seasons must be taken into consideration; for, during the period when the experiments were conducted at Whitfield the

thermometer we understand was frequently below zero—that it was a period of intense cold and stormy weather—whilst the three months of December, 1845, and January and February, 1846, in Cornwall, were comparatively mild weather, as the following account, kept at the time, will show:—

	Max.	Min.	Mean.	Range.	Absolute highest.	Absolute lowest.	Greatest daily range.
Dec., 1845.	50.3	40.9	45.6	9.4	54	28	23
Jan., 1846.	50.5	46.5	48.5	4.0	55	40	10
Feb., 1846.	49.4	45.4	47.4	4.0	55	26	13

The difference in temperature when the two experiments were instituted will, in some measure, account for the difference of the results, and it must be taken into consideration; but, as far as the experiments at Barteliver are concerned, they evidently show that the feeding of sheep in confinement or the open air during the winter in Cornwall, even under the most favourable circumstances, is far from being a profitable business. The field in which the sheep No. 1 were kept was exceedingly good, and it may be observed that a less quantity of turnips was consumed by this lot, owing to the excellent bite of grass.

Gentlemen, what do these things show us? Why, that farmers as well as other men are desirous of acquiring knowledge—that they are fully aware their prosperity in a great measure depends on the most profitable method of turnip feeding. This is a circumstance, indeed, not only extremely material to the farmers, but in a populous country like old England, where the consumption of animal food is so great, to the public also, as it tends evidently to furnish greater supplies to the market.

In taking leave of farm No. 2, I have only to add that it may so happen that an extra beast or two may be purchased to fatten if there is a sufficient quantity of surplus food after amply providing for the young stock; but if they are in any way deprived of what they really need in the shape of food, by purchasing extra stock, it will then prove a most unprofitable concern.

I now come to farm No. 3. This is what is commonly called a rearing farm; which, from the climate, distance from market, the quality of the soil, and various other circumstances, it is found that rearing of cattle and selling them at a certain age in good condition for others to fatten for the butcher, is what this farm is best calculated to do. Turnips are not generally grown to the extent they ought to be on farms of this description; but the most ignorant farmer is now brought to see the

value of keeping his stock in good condition, which it is impossible for him to do during the winter months without turnips.

The occupier of this farm would do well to grow a sufficient quantity of food to enable him to keep his stock in a growing thriving state; this, with good shelter, and a plenty of litter, are the necessities which fortify our stock against the attacks of winter, and through these sleekness and good condition (which are the only signs of health and prosperity in the animal) are preserved. Now the most profitable method of turnip-feeding here is to distribute this valuable root amongst all the herd as each beast may stand in need, and not to fatten a few to the injury of the many; neither to be stuffed and starved by turns, but to be regularly fed, and always kept in a growing state.

Gentlemen, I have now shown you, according to my view of the case, the most profitable method of turnip-feeding in different parts of England, and more particularly on three different kinds of farms which embrace and include all the materials for raising this structure in our county. This very naturally leads to the state of our farm-buildings, as being closely connected with turnip-feeding. That a vast improvement has taken place in the farm-buildings on certain gentlemen's estates I am proud to acknowledge, but that a great deal remains to be done is self-evident. That a vast deal of money is annually spent in repairing old buildings cannot be denied. Since I became capable of knowing the advantage of suitable farm-yards, I have strongly recommended that instead of repairing the old scattered buildings, let there be first a proper place for the farm-yard selected. This being done, have a plan of it; and if the owner is not disposed to build his yard at once, as the old houses fall into decay have new ones erected according to the plan: thus every farm will, in the course of time, have a suitable farm-yard at comparatively speaking a small expense, and also in the proper place, which is a matter of no small importance.

Gentlemen, I cannot dismiss this subject, "The most Profitable Method of Turnip-Feeding;" without reminding you of the great improvement that has, within the recollection of all of you, taken place in the mode and extent of the cultivation of the turnip; neither can it be forgotten by whom we were taught how to cultivate the soil and grow them to perfection; for I do, without the least hesitation, say that few are the districts (and my means of judging are not very limited) that you will see the turnip better cultivated than in this. For to duly appreciate this knowledge—this great advantage—we must go back to the time when scarcely an acre of turnips was grown in a parish

in this part of the country; when it was a rare sight to see a fat bullock during the spring months; when it was the general custom to salt-in meat in the autumn to go through the winter and spring: no fresh beef could be found in our markets in those days until nature had produced grass to fatten cattle. Gentlemen, I wish to draw your attention to this point—I anxiously wish to fix you here for a moment—and then behold our dense population. Pause a moment, and ask yourselves what situation the people of this great country would now be in with such a state of things? And to whom, I would ask, are we in this part of the county more particularly indebted to for this invaluable improvement—this inestimable knowledge? Why, to a gentleman who has some years been removed from us, but whose memory still lives in the breast of every man, be he rich or be he poor, who had the happiness of knowing him. The late deeply lamented Francis Hearle Rood, Esq., of Trebartha Hall, was the man. He was in word and in deed the farmer's faithful friend, and his memory will live in the hearts of the yeomanry of Cornwall for generations to come. We are told the man who makes two ears of corn or two blades of grass to grow where only one grew before, deserves well of his country.

Gentlemen, if this doctrine be correct, I will leave it for you to say what is due to the memory of the man who has not only done this, but, in addition, has been the means of growing fifty acres of turnips where only one grew before; thereby laying the foundation for all good husbandry, to the great benefit of this county and mankind. I believe I have fulfilled what I promised you; I am at the same time fully sensible how imperfectly I have done so. I thank you most sincerely for your kind attention, and trust my observations will lead to a discussion that will be far more valuable than anything I have said on "The most Profitable Method of Turnip-Feeding."

TESTIMONIAL TO MR. WARREN.

Having witnessed the persevering exertions of Mr. Warren, the Chairman of the Warminster Maltsters' Committee, in obtaining redress from the oppression which the trade was subjected to, through the unjust, vexatious, and tyrannical manner in which the provisions of the Excise laws have been frequently administered, we some time since expressed a hope that the general body of maltsters would mark their sense of his services by presenting him with some testimonial. It cannot be doubted that the concessions which have recently been made by the Board of Excise, in respect to ganging the grain while in the couch frame, result from the labours of

the Warminster Maltsters' Committee, of which Mr. Warren is the chairman. We are glad to see that the services of Mr. Warren are about to receive the recognition due to them. At the late meeting of the Warminster Maltsters' Committee, the following resolution was cordially received and carried:—

“That this meeting, desirous of recording in a substantial and permanent way its sense of the energy and discreet perseverance, combined with talent, displayed by Mr. John Warren, Chairman of the Warminster Committee, in the discharge of his duties as such, agrees to enter into a subscription, in which

it invites the co-operation of the trade generally, that a tribute worthy of the maltsters may be presented to him.”

The resolution further constituted a committee to carry this object into effect.

The general body of maltsters are numerous and wealthy. Mr. Warren's services, gratuitously rendered, have been eminently successful. We trust his fellow-tradesmen will recognise those services in a manner to reflect credit on themselves and afford gratification to Mr. Warren.

THE MALT TAX.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—Since last addressing you, the corn markets have continued to fall in price, and farmers are becoming seriously alarmed, and already talking of the necessity of reducing as much as possible the expenses of management. If corn fall thus low in price after a deficient harvest, and with the money market in an easy state, what must we expect to be the consequence of free trade in corn after an abundant harvest, and with a tight money market? Should the legislature refuse to do something for the relief of agriculture, the Exchequer will soon inform them that from landlords, tenants, and labourers, and from country tradesmen, they will find a serious deficiency in the aid hitherto obtained from them in the support of the heavy burdens of the country. It will point out to them, if I mistake not, in language not to be misunderstood, that relief from the Malt Tax, with duties imposed on certain articles of foreign agricultural produce, as suggested in my former letter, would be economy, and surely it would be sound policy; for it cannot be prudent, in these times more especially, to estrange the feelings of the whole agricultural community, who cannot be otherwise than irritated at seeing the foreigner pocket their legitimate profits, feeling assured, too, that he is at the same time laughing in his sleeve at the wisdom of “Johnny Bull.”

The impoverishment of so large a portion of the community must operate also most injuriously on the remainder, since the portion of the national burdens, which the former are unable longer to bear, must be added to that portion already borne by the latter. With a superabundant labouring and pauper population, every means should be adopted for affording profitable employment, and thus rendering them the strength, instead of the weakness, of the country. Of the necessity of such a measure, whilst it is within our power, whilst employers have the means for carrying it out, Ireland speaks to u

trumpet-tongued; and shall we be so infatuated as not to heed the warning? For this reason, it does appear most impolitic to import flour, the manufacture of which would give employment to so many of our suffering population. Could all our hands find more profitable employment, the importation of flour would not be so objectionable; but as many cannot be employed at all through a considerable portion of the year, it would surely be more statesmanlike, as well as more Christian-like, to allow them to manufacture it rather than the foreigner, even at a somewhat higher cost. But I contend that the cost is not higher; because, though we may pay somewhat less to the foreigner, we must add to such sum the expense of supporting our own unemployed labourer, or two men instead of one. Nor can I think a legislator justified in overlooking the fact that he is weakening the ties of patriotism, and losing to the country the benefit of a willing heart and a ready hand in her defence when the need for such may arise.

The improved condition which would result to the whole body of agriculturists and to the country tradesmen and shopkeepers from the imposition of duties on certain articles of foreign produce, as before suggested—from the home manufacture of the flour now prepared abroad—from the removal of the Malt Tax—and from the abolition or relaxation of the assessed taxes, which would also afford means of employment, and in the benefit of which others would participate also, would, I have little doubt, be the means of producing a greater revenue than will be raised under our present taxation, coupled with the present free trade in agricultural produce.

I am, sir, your obedient servant,

Poulton, Feb. 24. W. M. HALCOMB.

TO THE EDITOR OF THE FARMER'S MAGAZINE.

SIR,—In two former letters I have endeavoured to point out the impolicy of taking the duty off all

kinds of foreign agricultural produce, and continuing the tax on malt.

I will now attempt to show that duty on the importation of foreign corn is no more than an act of strict justice to the landed interest, and that the portion of the community who have succeeded in abolishing such duty have shown either what was once termed—in the House of Commons, I believe—"an ignorant impatience of taxation," or a want of honesty in endeavouring to shift from their own shoulders, to those of the landed interest, their fair share of the common burdens.

Let us then see, in the first place, why British corn required for its protection the imposition of a duty on the importation of foreign; for we cannot suppose that the country would, in the first instance, have consented to a measure raising the price of the necessaries of life, or permitted for a length of time its continuance, had not its justice been apparent.

It is notorious that large sums are levied on the landed interest almost exclusively for certain purposes in which other portions of the community have an equal interest. I would name tithes for the support of the church, poor rates for the support of the aged and infirm and of unemployed labourers (for it cannot be said that the manufacturing interest, or any other class of men, are abstractedly under less obligation, according to their means, to relieve the aged and infirm, or to provide either employment or support for those hands which are not wanted alike by the farmers as by themselves). I would name these, with the land tax for general purposes, and the maintenance of roads for the public accommodation, as some of the largest items in the case under consideration.

If, then, the growth of British corn was rendered more expensive by these levies on the landed interest, and if these levies were made for the benefit of the community generally, it was but just that the landed interest should be remunerated for the additional expense beyond that portion which, as a part of the general community, it ought to bear; and also, that the community should reimburse the landed interest for taxes which had economically been, in the first instance, raised upon that interest. How, then, could this equalization have been better effected than by giving the landed interest an increased price on their produce, the consumption of which by every person in the kingdom is very much in accordance with his means? for the extra price, entering into the cost of all labour, is borne ultimately by the several classes of society, according to their respective powers of commanding the produce of that labour. This was done when duties were placed on the comparatively low-priced foreign articles which came in competition

with it. Thus was the landed interest protected from loss and injustice as the sole or chief paymaster of sundry imposts levied for the general good; and the community reimbursed, in some measure, by a portion of our taxation being raised from the foreigner.

If, however, the other part of the community now object thus to reimburse the landed interest, they must, if they are honest men, bear their share, according to their means, in a direct taxation for the before-mentioned purposes. In that case we shall be obliged most probably to resort to the simple mode of abolishing all duties, and of raising the greater part of our revenue by an increased Income and Property Tax. Whether this will be more agreeable than raising a portion from the foreigner, I must leave them to judge; but I do not see how honest men can refuse to do either the one or the other.

Believing the most desirable course to be the imposition of duties on most articles of foreign agricultural produce, I wish to revert to, and speak more fully on, the impolicy of allowing a free importation of flour, should it be deemed necessary to exempt breadstuffs generally from the duty. The benefit of employing our redundant population, rather than the foreigner, in the manufacture of flour, I have already pointed out; but the free importation of flour, instead of the wheat from which it is made, deprives the country of another material benefit arising from the offal of the wheat, which is now applied to the rearing and fattening the cattle of foreigners, to be sent, duty free, into our markets; whereas, were the wheat imported instead of the flour, the offal would be applied at home to the rearing and fattening an equal quantity of stock, to the direct benefit of the agriculturist, and to the indirect benefit of the consumer, by giving employment to a large additional number of our hands.

It was not my intention, when I began this letter, to touch again on the repeal of the Malt Tax; but seeing that it has been recommended by some of our friends not to attempt its abolition, I cannot refrain from saying that it is a tax which not only the farmer, but every man in the kingdom, ought to exert himself to abolish. It is a tax which, as Englishmen, we ought to be ashamed of; it is a tax which denies the poor man the pleasure of preparing for himself and family a wholesome and nutritious beverage, to be enjoyed at their evening meal after a day of laborious toil—toil, too, the benefit of which is reaped by those who have the power to remove this tax. It is a tax which demoralizes the labourer by driving him to the alehouse and the beershop; and it is a tax which mocks the sentiment oft uttered by our lips—a sentiment echoed from the palace to the farmstead, from the

platform of Exeter Hall to the board of the village Farmers' Club—echoed too, I believe, with true English warmth and sincerity of heart—"Regard for the poor." Shall we then halt in our endeavours for the abolition of this cruel, this un-Christian tax? No! rather let us, *if nothing better can be done*, reimpose the beer duty! That, at least, spared the labourer who might wish to see his wife

and children partakers of the same comforts with himself.

Hoping that Messrs. Cobden and friends will be governed by honesty, rather than by what has been termed, with more truth than courtesy, "an ignorant impatience of taxation,"

I am, sir, your obedient servant,

Poultou, March 13.

WM. HALCOMB.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday, the 27th February. Present—Mr. Raymond Barker, in the Chair; Lord Canons; Sir John V. B. Johnstone, Bart., M. P.; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. F. Cherry; Mr. Christian; Mr. Dyer; Mr. Foley, M.P.; Mr. Fuller, M.P.; Colonel Hall, M.P.; Mr. Fisher Hobbs; Mr. Majendie; Mr. Marshall, M.P.; Mr. C. E. Overman; Mr. Parkyns; Professor Simonds; Mr. Slaney, M.P.; Mr. Stansfield, M.P.; Mr. T. R. Tweed; and Professor Way.

Dress for Drainers.—The Marquis of Westminster communicated, in a letter to Mr. Pusey, M.P., a descriptive statement of the leathern dresses presented by his lordship to the Society, and used with so much advantage on his estates in Dorsetshire in protecting the labouring drainers from wet and injury in the prosecution of the deeper portion of their excavations.—The Council ordered their best thanks to be conveyed to the Marquis of Westminster for these communications (which they referred to the Journal Committee), as well as for an implement for placing pipes and tiles in drains, and for adjusting their position, presented by his lordship at the same time to the Society.

Implements for Small Farms.—Sir Charles Lemon, Bart., M.P., called the attention of the Council to the great advantages that small farmers, especially those living in remote and hilly districts, would derive from simple and economical implements adapted for the cultivation of their land. He alluded to this subject with the greater confidence from being so well acquainted with the desire of the Council to extend the operations of the Society in favour of every class of practical cultivators of the soil throughout the kingdom. He wished particularly to claim their consideration for a class far below the great experimenters to whom the country owes already so much—namely, for that of occupiers whose enclosures are small and on the sides of steep hills. For them, he thought, the large implements most suited for large flat fields are quite unavailing, as such small farmers could not purchase them, and would be unable to work them even if purchased. Sir Charles Lemon considered that it would be a great boon to the class in whose welfare he felt, in common with the Society, so deep an interest, if the Society would, on the occasion of some of their country meetings, offer a premium for some implements of the kind to which he

alluded, to be constructed on a small scale and sold at a moderate price. He stated, as an instance of the implements required, that a small drill was much needed, applicable for corn or turnips, and not having more than three, or at the utmost four rows, at a price not exceeding £10, if for three rows or less, or £12 if for four rows. As the time for deciding on the Prize Sheet of the Society for 1849 had passed by, he was himself willing to contribute, in conjunction with other members of the Society, towards a distinct prize for this purpose, to be awarded by the Judges at the Norwich Meeting, if it was thought desirable that a year should not be lost; but, at all events, he hoped the attention of the great implement makers would be directed to the subject; for it was only by them, and not by local manufacturers of small means, that the construction of economical but effective implements of limited size was to be carried out with the greatest advantage to all parties.

Liquid Manure.—Mr. Wheble, of Bulmarsh-court, Reading, informed the Council of the difficulty he had experienced in acquiring satisfactory information on the process by which the volatile alkali in liquids passing through iron pipes could be conveniently saturated with an acid without injury to such metal piping, and also on the question generally of strengthening liquid manures by chemical means. He had on his own farm four tanks, of 1,200 gallons each, and another smaller one, into which the contents of the whole of the four or of any one of them could run, before distribution, through three-inch pipes, by hose, on the land. Mr. Wheble had made many inquiries to ascertain the best ingredients for mixing up with the washing of the farm-yard or house, or (when that was used up) for making the best manure. His farm was a gravelly and sandy one; mostly grass land, but a portion of it appropriated to wheat, Italian rye-grass, and flax. He had power of water at command, and had the means of conveniently obtaining ammoniacal liquor. He had not been able to learn satisfactorily whether sulphate of ammonia, gypsum, bones dissolved in sulphuric acid, or any other particular chemical substance, would be most beneficial and economical in its application, or the proportions in which each should be used in his liquid manuring; and thinking it likely that the inquiry was of equal interest and importance to other members of the Society, he had not hesitated to state the difficulty he had thus experienced

in his inquiries on the subject.—Lord Camoys favoured the Council with a description, from his own personal inspection, of the mechanical arrangement of Mr. Wheble's works on his farm; and Prof. Way and Mr. Stansfield, M.P., with their opinions on the application of artificial manures.—Mr. Fisher Hobbs had derived much information, on the subject referred to by Mr. Wheble, given by their lamented colleague, the late Rev. W. L. Rham, in his "Outlines of Flemish Husbandry," published by Mr. Knight.—Dr. Calvert described the plan he had found most advantageous in distributing liquid manure by means of a cask with openings at the bottom, filled rapidly from the tank by being placed in a road sunk below its level.—Mr. Marshall, M.P., referred to the increase of strength acquired by re-pumping the liquid over the manure heaps.

Diseases in Stock.—Mr. Brandreth (High Sheriff for the county of Bedford), of Houghton House, near Dunstable, favoured the Council with a statement of the mode he had successfully adopted in reference to his sheep affected with small-pox. In some cases where care has not been bestowed upon the flocks, in the union in which he resided, the loss had been great. When the eruption had not shown itself on the face of the sheep, the throat had been more affected, and the swallowing impeded, and the animal consequently could not take the degree of nourishment requisite to sustain its strength under the effects of so lowering a disease. In those cases in which care had been taken to keep the animals, on being attacked, moderately warm without subjecting them to close confinement or a heated atmosphere, it was found that they did pretty well. Gruel was administered to them, and salt given them to lick, their noses being sponged three times a-day with warm water, Sir William Burnett's Disinfecting Liquid being plentifully used about the premises. The affected sheep were separated from the rest of the flock. The disease had been brought into that part of the country by some foreign sheep. The current opinion among the farmers in Mr. Brandreth's neighbourhood was, that when care was taken of the sheep, it was best not to inoculate them.—The Chairman had the satisfaction of stating, that in his own neighbourhood, on the borders of Oxfordshire and Buckinghamshire, there was no small-pox at present among their flock.—Mr. Fuller, M.P., made the same report in reference to the Southdown flocks of Sussex; his own sheep were never in better order.—Colonel Hall, M.P., regretted to state that in Cambridgeshire they were surrounded with it. Sixty of his ewes, out of 180 conveyed from West Sussex in new trucks, by railway, to a dry farm near Six-mile-bottom in that county, were attacked with the foot disease. A striking case had occurred, too, of the breaking out of the foot disease in oxen separated from each other by two yards, a large barn, and a high wall, one portion being tied up and the other kept loose; the animals tied up in the yards taking the disease on the other portion having been brought on the farm. He also referred to the case of foot disease taking place two years ago in two flocks, though separated from each other by a plantation and hedge. He dwelt strongly

on the necessity that existed for greater caution being taken by the railway companies in preserving their trucks for the conveyance of live stock in a greater degree of cleanliness and freedom from taint, by every means in their power, both on account of the owners, as well as for their own interest; for, in consequence of the ravages in his flocks, a neighbour of his who occupied 800 acres of land had been obliged to reduce his flocks from 1,100 to 300 head of stock. Orders had been given, he was aware, by the Government to the different railway companies on this point; but he well knew, as the commander of a regiment, that orders were of no use unless it was seen that they were carried into execution and obeyed; and the fact now strikingly evident was, that the railway trucks were *not* attended to habitually as they ought to be.—Mr. C. E. Overman related instances of the occurrence of the foot disease by simply removing the sheep to the distance of a mile from one pasture to another, the exertion appearing to act as a predisposing cause of disease.—Mr. Fisher Hobbs could bear testimony to the accuracy with which the Government orders were attended to on the Eastern Counties line. With regard to the small pox, he regretted to state that in Essex it had broken out in one district in consequence of the shallow manner in which the animals that had died of the disease had been buried in the ground. Their carcases had been torn up by dogs, and the pestilence again propagated to a great extent from that circumstance. Had the precaution taken by Mr. Hudson, of Castleacre, been adopted, of boiling down the carcases with sulphuric acid, or had quick-lime been sprinkled over them in sufficient quantity, the re-suscitation of the virus would, in all probability, have been prevented.—Sir John Johnstone, Bart., M.P., Mr. Foley, M.P., and Dr. Calvert, having made some observations on the manner in which the foot-rot was taken by sheep, and Mr. T. Turner on the distinction to be drawn between that local affection and indications of constitutional disturbances in the animal, Professor Simonds favoured the Council with his general views on the diseases to which reference had been made. He quite agreed with Mr. Turner that a clear distinction should always be drawn between a local disease and a mere indication of constitutional derangement; as in the case particularly of the foot-rot in sheep, and the vesicular disease in the feet of sheep and oxen: the former being a disease in the foot of the sheep, analogous to the one termed thrush in the foot of the horse, produced by common causes, and, in Professor Simonds's opinion, neither contagious nor infectious; the latter, or vesicular disease, arising from constitutional causes, the vesicles not only showing themselves in the feet, but in the mouth, and frequently on the teats of milch cows. He considered that animals were rendered susceptible of the vitiated atmosphere producing this disease, by being removed from one neighbourhood to another, or by their general management or system of feeding being suddenly altered. This, he thought, would account for the cattle of Colonel Hall becoming so soon affected, as the other animals on his farm had been recently purchased. As an epizootic or

epidemic disease affected animals in consequence of a vitiated state of atmosphere, extending over a considerable district of country at the same time, while an enzootic or endemic disease arose from causes confined to a particular locality; so, he remarked, the distinction must also be borne in mind between an infectious disease occasioned by poisonous exhalations emanating from an affected animal, and a contagious disease produced by actual contact of diseased matter. He had made numerous attempts to produce the foot-rot in the healthy foot of a sheep by inoculation with foot-rot matter; but, in reply to an enquiry of Mr. Marshall, M.P., it appeared that he had never in a single instance succeeded. Mr. Youatt, in his work on "Sheep," had detailed experiments made in France to prove the contagious nature of foot-rot, but Prof. Simonds considered those experiments to have been very unfairly made, and the result in one instance of what was regarded as foot-rot not to have been due to the virus, but to the inflammatory action produced by the long-continued violence of treatment to which the animal was subjected, ulceration without specific virus having ensued. The Chairman stated that in his neighbourhood, the feet of sheep had sometimes become diseased from their having been driven in hot weather over sharp sandy roads; but the disease was of an ordinary character and soon left them, nothing of the nature of foot-rot being heard of among them. With regard to small-pox in sheep, Professor Simonds feared it had already taken too deep a root in this country to be ever entirely eradicated; one thousand animals in a county continuing still to be carried off by it. In his progress throughout suspected districts he had found the small-pox to prevail, more or less, in the counties of Norfolk, Suffolk, Essex, Middlesex, Kent, Surrey, Hampshire, Hertford, Cambridge, Northampton, and Wilts.—An interesting discussion then took place on the circumstances under which foot-rot generally occurred in sheep, and on the apparent presumption of its contagious nature; the parties contending for such contagion attributing the disease to the immediate contact of the feet of healthy sheep with virulent matter left on the ground by diseased sheep that had passed over it; while Professor Simonds maintained that the disease had its origin in the same unfavourable circumstances (especially of cold, undrained, wet pastures) that had occasioned it in the former flock: all parties, however, agreeing in the facts of occurrence, but differing only in their attempts to explain them.

Numerous presents having been laid before the Council, and their thanks ordered to the respective donors for their attention in transmitting them, the Council adjourned to their Monthly Meeting on the 6th of March.

A MONTHLY COUNCIL was held at the Society's House in Hanover-square, on Tuesday, the 6th of March. The following Members of Council and Governors were present:—The Earl of Chichester, President, in the Chair; Hon. Capt. Dudley Pelham, R.N.; Sir Charles Lemon, Bart., M.P.; Sir John V. B. Johnstone, Bart., M.P.; Sir Robert Price, Bart., M.P.;

Sir Josiah John Guest, Bart., M.P.; Mr. Raymond Barker; Mr. S. Bennett; Mr. Bosanquet; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. Garrett; Mr. Brandreth Gibbs; Mr. Fisher Hobbs; Mr. Hudson (Castleacre); Mr. Jonas; Mr. Milward; Mr. Pusey, M.P.; Mr. Shaw (London); Mr. Shaw (Northampton); Mr. Villiers Shelley; Mr. Slaney, M.P.; Mr. Stansfield, M.P.; Mr. Stokes; Mr. Thompson; Mr. T. Turner; and Mr. Jonas Webb.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly report on the accounts of the Society, from which it appeared that on the last day of the month of February just ended, the current cash balance in the hands of the bankers of the Society was £1,943. The Chairman explained to the Council that this balance included the subscription of £1,000 presented to the Society through the authorities of Norwich, as well as £224 received on account of arrears of subscription due from members to the Society, and £719 received as compositions for life.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported that 103 Essays and Reports, accompanied by 113 drawings and plans, had been received in competition for the prizes of this year offered by the Society in the department of Essays and Reports. The Council referred the adjudication of these Essays and Reports to the Journal Committee. Mr. Pusey congratulated the Society upon the interest evidently so generally felt throughout the country on the subjects proposed by the Council for these prizes, in every class of which there was more or less of competition.

Agricultural Chemistry.—Mr. Pusey also presented, as Chairman of the Chemical Committee, the report of that committee, which was received by the Council, and ordered to be printed for the information of their members, previously to its being discussed at the next monthly Council.

Vice-President.—Agreeably with the notice given by the Duke of Richmond at the previous monthly meeting of the Council, it was moved by Mr. Pusey, M.P., and seconded by Mr. Stansfield, M.P., and carried unanimously, that Mr. Thomas Raymond Barker, of Hambleton, Buckinghamshire, should be elected one of the Vice-Presidents of the Society, to fill the vacancy occasioned by the decease of the Earl Talbot. The President expressed the satisfaction he felt at this result of the election, and the pleasure it would have given him, had he not occupied the chair, to have been himself the mover of the resolution to which the Council had then so unanimously agreed.—Mr. Raymond Barker returned thanks for the high honour conferred upon him by the Council, and expressed to them his entire devotion to the interests and welfare of the Society, whose prosperity he had always had sincerely at heart, and to whose continued advancement in usefulness it would ever be his pride to contribute by every humble endeavour in his power.

Draining Ploughs.—The offer of Mr. Slaney, M.P., to renew his prizes for ploughs to lessen the labour of

cutting-out and filling-in drains, was unanimously accepted by the Council.

Models, &c., for Exhibition.—The Council unanimously accepted the offer made to them by the Directors of the Royal Polytechnic Institution, to exhibit the models, &c., belonging to the Society, in a room set apart in that Institution for the public exhibition of agricultural objects.

The Council then adjourned to their next weekly meeting on the 13th of March.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Tuesday, the 13th of March. Present—The Hon. R. H. Clive, M.P., in the chair; Sir J. P. Boileau, Bart., Mr. B. Almack, Mr. Raymond Barker, Mr. H. Blanshard, Mr. Brandreth, Mr. W. Burroughes, Dr. Calvert, Mr. Foley, M.P., Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. T. C. Hinckes, Mr. Kinder, Mr. C. E. Overman, Prof. Simonds, Mr. Slaney, M.P., Mr. H. A. Smith, Mr. R. Trench, Mr. T. Turner, Mr. T. R. Tweed, Dr. Walker, Prof. Way, and Mr. H. Wilson.

The following communications were received, and the usual thanks of the Council ordered for them:—

1. From Lord Camoys, a specimen of the improved syphon, invented by his Lordship, and employed with so much success in his dairies at Stonor, in drawing off the milk from beneath the surface of the cream, and thus effecting a complete separation of the two liquids, by the simplest means and the least possible trouble.
2. From Captain Richardson, a further communication on the stoppage of drains, by fibrous vegetable matter filling up the interior of the pipe or tile.
3. From Mr. Keene, a statement of the results obtained by French chemists in the analysis of the Forty-day Maize.
4. From Mr. Radford, a communication on the question whether moles were, or were not, injurious to cultivated land.
5. From Captain Waterton, a specimen of his Alkaline Powder, with a statement of its value in the feeding of cattle, and especially in the fattening of pigs.
6. From Mr. Fuller, M.P., on the "Flat Pole Peignton," a variety of Drumhead Cabbage, cultivated with great success, for household purposes as well as for feeding cattle, by Sir Charles Burrell, Bart., M.P., and Mr. Law Hodges, M.P.; these cabbages, in some instances, weighing no less than 51 lbs.
7. From Mr. H. Blanshard, a report on the effects resulting, on a portion of his property near the coast, from the destruction of the worms occasioned by an irruption of the sea; the land not reached by the sea remaining in the same state of fertility as formerly, while that portion of it overflowed by the waves, and in which, by ample evidence, a great destruction of worms had taken place, has been deprived of the porosity previously given to it by the operations of

the worms, and remains a sodden, impervious, and sterile piece of land.

The Council then adjourned to Tuesday, the 20th of March.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Tuesday, the 20th of March. Present—The Earl of Yarborough, Vice-President, in the chair; Sir J. P. Boileau, Bart., Mr. Raymond Barker, Mr. S. Bennett, Mr. H. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. French Burke, Capt. Caldwell, Dr. Calvert, Mr. Druce, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. T. C. Hinckes, Mr. Fisher Hobbs, Mr. E. Hussey, Mr. Kinder, Mr. Majendie, Mr. W. Miles, M.P., Mr. C. E. Overman, Mr. Apsley Pellatt, Mr. W. Roddam, Prof. Sewell, Mr. Shaw (London), Mr. Slaney, M.P., Mr. H. A. Smith, Mr. Stansfield, M.P., Mr. Hampden Turner, Mr. Thos. Turner, Prof. Way, and Mr. Henry Wilson.

The following communications were received:—

1. A letter from the Rev. R. A. Roberts, in reference to the hydraulic power of under-ground field-drains, enforced in a work on that subject, dedicated by him to the society, and recently published, of which he transmitted a copy to the council.
2. A letter and plan from Mr. Henry Clayton, illustrating what he considered essential improvements just completed in his double-action tile and pipe machine; by which, with reduced power, he stated that he had obtained increased facility and extension for the manufacture, in one and the same machine, of pipes and tiles of every kind and size, and that he had consequently effected, by such productive means, a further reduction in the cost of manufacture.
3. A letter from Mr. W. C. Spooner, on the extension of small-pox in sheep, and his proposed plan for arresting the progress of that malady. On the motion of Mr. Fisher Hobbs, seconded by Mr. Shaw, that communication was referred to the veterinary committee, with a request that they would report on the subject to the Council, at their next Monthly Meeting, on the 3rd of April.

Presents.—Plans of Farm-Buildings from Mr. Witney; and a copy of Mr. H. Weaver's work on Cottage Architecture, presented by Mr. Shaw, on the part of the author. A paper by the Earl of Lovelace on Harbours of Refuge, read before the Institution of Civil Engineers; Report of the Poor-law Commissioners, from Mr. Nicholls; and a paper on the Agricultural Value of Sewer and other Drainage Waters, from Mr. Cuthbert Johnson, one of the Metropolitan Commissioners of Sewers. Transactions of the Yorkshire Agricultural Society, and Mr. Spence's address to the Entomological Society. The Rural Encyclopædia, from Messrs. Fullarton; the Farmer's Magazine, from the Proprietors; a Treatise on Pleuro-Pneumonia, from Mr. H. Douglas, of Cocker-mouth; and the Ombrological Almanack, from Dr. Calvert.

Mr. Slaney, M.P., having favoured the Council with some interesting remarks on the mode of venti-

lating cottages by means of a simple arrangement by which the external air was introduced at the back of fire-places, the Council ordered their thanks for the various communications then made to them, and adjourned to Tuesday, the 27th of March.

NEW MEMBERS.

Captain George Waterton, of Grove House, Hunslet, near Leeds, was elected a Governor, and the following gentlemen Members of the Society:—

Bascombe, Thomas, Dorchester, Dorset
 Blackburn, Capt. John Ireland, jun., Hale Hall, Warrington
 Browne, George Lathom, 3, Brick-court, Temple
 Burton, Thomas, Langley Grange, Loddon, Norfolk
 Bush, John Whittaker, Fairwood, Westbury, Wilts
 Chetwynd, William Henry, Longdon, Lichfield
 Cook, Charles, Litcham, Norfolk
 Cooke, William, Risby, Bury St. Edmund's
 Cooper, William, Barningham Park Farm, Ixworth, Suffolk
 George, George, Cringleford, Norwich
 Gooch, Edward Sherlock, M.P., Ashmans, Beccles, Suffolk
 Gregg, James, Ledbury, Herefordshire
 Green, Joseph B., Marlow, Ludlow, Hereford
 Harris, Joseph, Graysouthern, Cocker mouth, Cumberland
 Haywood, Henry, Moccas, Hereford
 Henshall, Edward, Huddersfield
 Jecks, Charles, Thorpe, Norwich
 Marks, Richard, Quainton, Aylesbury, Bucks
 Martin, William, Bixley Hall, Norwich
 Massey, William, Watton, Norfolk
 Massey, Alfred, Market-Downham, Norfolk
 Merriman, Thomas Baverstock, Marlborough
 Morgan, H., Norwich
 Morgan, John, Brandon, Norwich
 Murrell, Thomas R., Potter-Heigham, Ludham, Norwich
 Pemberton, William Hamilton, Holt, Norfolk
 Rippingall, Rev. Stephen Frost, Langham, Holt, Norfolk
 Slade, A. F., Kennal House, Chislehurst, Kent
 Slade, Lieut. Edgar, R.N., Belmont, Chislehurst
 Stables, Walter, Crossland Hall, Huddersfield, Yorks
 Stevenson, Seth W., F.S.A., Norwich
 Thomas, John Ayre, Ditchet, Rose-Ash, Witheridge, Devon
 Tuck, T. G., Strumpshaw, Norwich
 Whitton, Corbett, Stafford
 Weld, Joseph, Lulworth Castle, Dorset
 Woods, Henry, Merton, Thetford, Norfolk.

We notice that Messrs. Swan and Sons, the celebrated auctioneers of Cambridge, have large monthly sales of horses, cattle, &c.

Price 5s.

DIGEST OF EVIDENCE TAKEN BEFORE A COMMITTEE OF THE HOUSE OF COMMONS, APPOINTED TO INQUIRE INTO THE AGRICULTURAL CUSTOMS OF ENGLAND AND WALES IN RESPECT TO TENANT-RIGHT.

Compiled and arranged by WILLIAM SHAW and HENRY CORBET.

London: Rogerson, Norfolk-street; and Ridgway, Piccadilly.

OPINIONS OF THE PUBLIC PRESS.

(FROM THE SHERBORNE JOURNAL.)

"This is one of the most valuable works yet published to the class amongst whom we have the honour to circulate—we mean those engaged or interested in the tillage of the soil, land-owners as well as tenant-farmers.

We have here described the agriculture of the present day as it exists in every county in the kingdom. Without the aid of a committee of either house it would have been impossible to have collected the materials, and, without the interposition of Mr. Shaw and his colleague, the materials, when collected, would have been comparatively useless. We recommend the results of their labours to the attention of every one connected with the cultivation of the soil, and we are certain that no tenant-farmer who has a regard to his own interests will be without the work."

(FROM THE SUN.)

"The gentlemen who have arranged the present digest have brought to the execution of their plan more than ordinary advantages, their literary attainments and connexion with the farming interests have given them peculiar facilities for the acquisition of sound knowledge upon agricultural subjects, and on the present occasion these several advantages have been turned to the best possible account. The great body of important evidence taken before this Committee has been arranged in a most simple and convenient form; the running commentary on the report will be found full of sound practical hints on the several points included in this vexed question. The inquiry into the customs of the different counties, arranged alphabetically, together with the mode of cultivation in each county, also in alphabetical order, are first given—then follow in order the evidence respecting the nature of the tenure, the necessity of legislative enactment to secure or create capital invested in the soil, the law of entail and the policy of giving enlarged powers to holders of life estates, &c., the general benefits that would follow from a recognised system of compensation for unexhausted improvements. As, no doubt, tenant-right will necessarily occupy very soon much of the deliberation of the Legislature, we can strongly recommend this able digest to the consideration of all parties interested in the subject—tenant, landlord, and legislator—as a book of reference. It is most admirably classified and conveniently arranged; it contains much sound practical information, and is written in a fair and impartial spirit, with a due regard to the interest of all, and will be particularly welcome to those who have neither time nor opportunity to wade through a cumbrous blue official quarto."

FROM THE "ATLAS."

"The digest to which we have referred may be consulted with advantage by all those who are interested in this question—by none more than by those landlords who, from mistaken notions as to what should be the true basis of their influence over their tenantry, still hold them at will, and for ever without a certainty of even an equitable tenure of their farms."

FROM THE "ECONOMIST."

"A very useful digest, which should be in the hands of all persons interested in the question. This evidence contains much valuable information with respect to the actual state of farming in England, and the present relations of landlord and tenant; and comparatively few persons have access to, or time or inclination to wade through the blue book; the digest will afford a short road to the substance of the evidence, arranged and classified. To the list of witnesses, also, there is appended a short statement of their avocations, residences, and the extent of their farms."

FROM THE "LITERARY GAZETTE."

"One of the largest of the blue books upon one of the most important of British subjects is here carefully condensed, and arranged with so much judgment as not only to elucidate the great question of which it treats in a very superior manner, but also to supply a mass of general agricultural information, which will be of lasting value long after the discussion now pending in Parliament has led to measures of legislation. A volume of greater interest to landlords and farmers throughout the land has not come under our cognizance; but it would not do for us to deliver our inexperienced opinion upon the guidance so judiciously gleaned and laid down from the evidence of many of the ablest farmers in the world."

(FROM THE GATESHEAD OBSERVER.)

We feel much obliged to Mr. Shaw and Mr. Corbet for the 'Digest of the Evidence before the Committee on Agricultural Customs,' which they have just published. The 'Digest' has

been arranged with great care, and well deserves the careful perusal of all parties connected with agriculture."

(FROM THE NEWCASTLE JOURNAL.)

A very valuable summary of the evidence upon the above subject has just been published. It is the most complete account of the "Agricultural Customs" of England that has ever

appeared. Indeed, such an amount of information on this subject could only have been obtained through the medium of a committee. The authors of the "Digest" have not seriously obtruded their own opinions into the book, but contented themselves with leaving the "facts" brought forward in evidence to work their own way."

SMALL POX IN SHEEP.

The appearance of the small pox in sheep in Hampshire has been productive of a very interesting and important discussion at the monthly meeting of "the Botley and South Hants Farmers' Club," held on Monday evening last. The subject was introduced by Mr. Spooner, veterinary surgeon, of Southampton, whose name is well and favourably known in the agricultural world. The report of the discussion, which appeared in the *Hampshire Advertiser*, is so lengthy that we cannot find space for it in our columns; we must, therefore, confine our remarks to the leading points. Mr. Spooner described, in his introductory observations, the symptoms manifested on the first appearance of the disease. He, moreover, stated a fact which we have not seen noticed before, that if a child were inoculated with the small pox from the sheep it produced a disorder exactly corresponding with the cow pox. Mr. Spooner read from a diary daily observations of the progress and effects of an attack of small pox in the flock of Mr. Codrington, at Kilniston, Hants. Mr. Spooner was called in to attend this flock, and inoculated the greater number of them; but being unable to attend through illness when first sent for, a few days were lost, and several cases proved fatal, which, judging from the success of Mr. Spooner's treatment, might otherwise have been saved. The disease first appeared about the 10th of Oct., and the condition of the flock is thus reported in the diary on the 28th of Jan. :—

"State of my own flock this day :—		
of 115 natural cases.....	79 dead.....	36 saved
of 101 inoculated.....	10 dead.....	91 saved
216	89	127

Mr. Codrington remarks—"I really believe had inoculation been resorted to in the early stages of the complaint amongst my flock—viz., about the 20th of Nov.—I should not have lost a dozen sheep." Mr. Spooner strongly advocates inoculation, in which he is confirmed by Professor Simonds, of the London Veterinary College. Our readers will also recollect, that soon after the appearance of the disease in this country, the announcement of which was first made in the *Mark Lane Express*, Captain Stanley Carr, who farms extensively in Holstein,

favoured us with a communication, in which he stated that the disease frequently prevailed in that country, was very fatal when taken in a natural way, and that the only effectual remedy known was inoculation. Mr. Spooner concluded his address proposing the following resolutions :—

"1. That it is the opinion of the present meeting that the small pox in sheep is an infectious and contagious disease, new to this country, and brought into it by the importation of certain German sheep affected with the malady.

"2. That when such a disease makes its appearance in a flock of sheep, if a few cases only are affected, it is prudent to destroy such sheep, in the hope that, with their destruction, the contagion may be stayed, carefully and daily examining the remainder to ascertain whether the disease spreads. When, however, the disease extends beyond twenty cases, it is most desirable to inoculate the whole of the flock, taking the lymph from the most favourable cases, unless still milder matter can otherwise be obtained. In carrying out this object, it is very desirable, on the first outbreak of the disease, to inoculate a sheep, so that, if necessary, the matter may be obtained from the first remove.

"3. That, though the plan adopted by Government in the appointment of Inspectors at the various outports to examine sheep and cattle coming from abroad, is very advisable as being calculated to prevent the re-introduction of the disease, yet the pestilence having been introduced, and being now raging in many counties, to the great destruction of the property of flock-masters, it is the opinion of the present meeting that additional active and stringent measures should be adopted, with the view of staying the disease, and, if possible, getting rid of it altogether.

"4. That it is the opinion of the present meeting that an Act of Parliament should be passed rendering it obligatory on all farmers to report to the Board of Guardians for the Union in which they may reside, the existence or supposed existence of the small pox amongst their sheep, and that any wilful concealment of such knowledge shall be punished by penalties. That on receiving this intimation, the Board shall immediately employ an inspector to examine the suspected flock, which, if found to be affected, shall immediately be subjected to the measures previously advised.

"5. That, in addition to the most rigid means for preventing the disease spreading to other flocks, no sheep shall be allowed to be sold from such diseased flock for the space of twenty-one days after the Inspector has reported the flock to be free from the disease, except in the case of fat sheep, which may be slaughtered on the farm."

The interest in this discussion was greatly heightened from the circumstance of Mr. Charles Fielder, of Sparshot, near Winchester, a gentleman well known as an experienced agriculturist,

taking a different view of the subject, and holding inoculation to be wholly unnecessary. Mr. Fielder thus explained his system:—

“Having been a great sufferer myself, by buying foreign sheep, and placing them with my own, caused me to find a remedy far preferable, in my opinion, to Mr. Spooner's. And I am much mistaken if you will not agree with me, after I have given you many strong cases where it has acted as a complete preventive, and a total extirpation of this pestilential disease out of every flock where it has been tried, and that in every case from a few days' trial to the greatest extent of time of twenty-one days (Hear, hear). The cases I will lay before you shall not be selected ones, as I give you my word, I will bring before you every case where my plan has been adopted. Not one single instance where it has been tried but complete success has followed. Nothing but real necessity caused me to discover it. After a great deal of mental anxiety and many sleepless nights, I discovered a mode of treatment which I hope will be followed by every person who shall be so unfortunate as to have this disease in his flock, and that the same good results may follow; in which case I shall be pleased to find I have been the means of rendering to my brother farmers one of the greatest benefits one man can confer on another (Hear, hear). I will first give you one of my own cases. On the 16th of August, 1847, I bought in Smithfield 118 Spanish sheep, brought them to my farm, and put them with 300 Down lambs. I at that time had another flock of 300 lambs, which the Spanish sheep were never with. In about a month my flock of South Downs and Spanish sheep, together about 400, began to fault with a disease—a disease I had never heard of before in this country—as it turned out to be small pox; the other flock of South Downs of 300 not having taken it. Out of this diseased flock of 400, I lost by death about 75 out of 130 which were affected. When they were at worst, having at that time lost about 50, it occupied my thoughts day and night to find a remedy to stop its spreading through the whole of my flock, as at that time I had every reason to suppose that it would, never having heard of any remedy to adopt as a preventive. I did find a remedy, and it is so simple that any one can follow it; the expense is trifling. (Hear.) If 1000 sheep had the small pox ever so bad, I could take away every diseased sheep, leaving nothing but sound healthy sheep together, at a cost not exceeding £3 or £4—£5 would completely eradicate it out of any flock in this country. I had a pen made in my sheepfold at one end, one hurdle wide. I filled it with sheep, employed two men every morning to begin at one end of the pen, each taking quietly hold of a sheep, turning it gently up far enough for the man to look under the shoulder, where the skin looks white, and is free from wool. Repeat filling the pen a few times in the like manner, when the whole flock will be inspected and all diseased sheep removed to a distance. The disease is sure to show itself first on the inside of the shoulder and thigh, the skin looking red, or rather of a purple colour, with a rash, not pustules, on its first appearance. In that stage of the disease I am positive it is not at all infectious, as I will prove to you from facts, which are far preferable to theory. This, then, is my remedy—taking from a flock every diseased sheep before they become infectious to others, by which means the disease is completely stopped from extending to the rest of the flock. Inspection and separation for twenty-one days will completely eradicate it out of any flock, let it be ever so extensive. I therefore now offer it to the Club, in opposition to inoculation, vaccination, or any other remedy yet known. I have heard and read that vaccination does not answer as

a preventive. I myself have tried it. Mr. Moulder, a veterinary surgeon, of Winchester, a gentleman of great experience, was kind enough to send to London for some vaccine, when he came to my farm and vaccinated three of my sheep. One took the disease, was put with Mr. Codrington's sheep, which had the small pox: it caught the disease and died. From the day I began to turn and inspect my diseased flock of about 400, I found a few fresh cases daily for about ten days or a fortnight, and one or two cases between that time and the end of twenty days; after that I never found another in the whole flock, leaving me 270 sheep out of the 400 that never took the disease. This plan of at once stopping the disease must be better than inoculation. I have another strong case of my own. Just before I had succeeded in eradicating it out of my diseased flock, my shepherd one morning informed me that one of my sheep of the other flock, consisting of 300, which had never been with the diseased ones, was unwell, and on his catching it, it had the pustules full out on it, so that it must have had the disease for many days. I immediately had it removed, and followed the same plan of turning and inspecting this flock every morning, as I had done the other. In the course of a fortnight two more sheep were unwell, with a rash out under the shoulders, not then pustules: after being removed a few days pustules formed all over them, shewing the regular small pox. Two out of the three which had it in this flock died; but by removing them in the early stage, when the appearance was like a rash only, I never found another in the whole 300. I fattened all the remainder. So fearful was I of selling one sheep that year that I kept the whole of my two flocks all the winter, rather than run the risk of spreading this dreadful disease through the country. This is a very strong case, showing that in its early stage the disease is not infectious, inspection and removal being far better than inoculation. It eradicates the disease at once, making it far less likely to spread in the neighbourhood.”

Mr. Fielder then read letters from Mr. Andrews, of Farnham, Mr. Monk, of Odiham, and Mr. Holding, of South Warnborough, bearing testimony to the success of his system in every instance in which it had been tried. The subject is so very important, and Mr. Holding's letter is so clear and explicit, that we cannot refrain from by placing it before our readers:—

“South Warnborough, Jan. 2nd, 1849.

“My dear Sir,—I received your letter, and am sorry to hear that the small-pox in sheep still exists in Hampshire. I have heard nothing of it lately in this neighbourhood. I enclose your letter, for which and your information I am much obliged, as I believe my loss has been less than any one who has had it in this neighbourhood. I agree with you as to the necessity of turning them, as several of my sheep had it very light, which I should not have discovered unless they had been all turned, when of course they would have infected more.”

“I now state to you the particulars of the disease as it affected my flock, which was 730. Fifty took the disease; thirteen died, which I had buried, skin and all, directly. They were in three lots: lot 1, wether lambs, a few ewes and rams, in all 200. Lot 2, ewe lambs and draft ewes, 260. Lot 2, stock ewes, 270. About the 20th of June the first sheep that had the small-pox was taken ill in lot 3, and was removed to lot 1, and remained there for three days, when it was so ill it was put before the hurdles, before them all, and remained until the 30th of June. It was then put with lot 2, which were removed nearly a mile from the other sheep; it became very

sore, and on the 3rd of July it was taken from the flock and put by itself. The Friday following Christmas told me it had the small-pox. July 11th, five sheep in lot 2 were taken with the disease; July 12th, seven more in lot 2 and ten in lot 3, which was the day I went to ask your advice; July 13th, turned them all, one more in lot 3, and 26 in lot 2, and two sheep in lot 2 appeared to have had the disease lightly and were getting better, as the pox marks were then dying off. In lot 2 there were nine more diseased, occasionally, one up to the 2nd of August, which was the last. I consider a few of the last sheep that had the disease took it from the two sheep in lot 2 some time afterwards.

“Mr. Sparshott, of South Warnborough, had three ewes diseased out of a flock of 360. He turned his flock three or four times, without finding any more. He then killed and buried them, and has never found any more of the disease in his flock.

“I am decidedly against inoculation, as I do not believe the disease in the early stage is infectious, for the following reasons:—Mr. Sparshott never had any more. In lot 1, I had none; in lot 2, forty-six. In lot 3 three, and those in ten days, and two of them were found before any of them were turned. I am satisfied if people would bury them, instead of skinning and throwing the carcass into the hedge, the disease would not have been propagated as it has been. It is a great satisfaction to me, not to have diseased any of my neighbours' flocks, which I attribute to not keeping the disease a secret, and burying them as fast as they died, as I believe the disease has been propagated by the flesh being carried by dogs.

“I am, Sir, yours very truly,

“To Mr. C. Fielder, R. HOLDING.
Sparshott, near Winchester.”

Mr. Fielder thus speaks of the effects of inoculation:—

“When about half his (Mr. Codrington's) flock had taken the disease, Mr. Spooner inoculated the whole of the remainder, being 101, out of which nine died, and I heard it spoken of that the loss was considered very moderate. Now, taking this as a favourable case, with the loss of nine per cent., it must be borne in mind that the 92 which recovered must have been made ill, it must have checked the growth of wool, loss of flesh, with a great risk of having a serious effect on the lambs, &c. I do therefore contend inoculation will not for one moment bear to come into competition with the course I recommend and have acted on.”

After some further remarks, Mr. Fielder concluded by proposing “his plan of timely inspection and separation as an amendment to Mr. Spooner's—

that of inoculation.” Several gentlemen took part in the discussion, and ultimately—

“Mr. R. WOOLDRIDGE, in order to conciliate parties, asked Mr. Fielder to allow him to substitute the following in the place of his amendment to Mr. Spooner's second resolution:—

“That if the disease can be prevented spreading by separating the diseased sheep from the healthy ones (in proof of the efficiency of which plan Mr. Fielder has stated several apparently well-authenticated cases), it is the opinion of this meeting that precautionary measures to prevent the spread of infection, is preferable to inoculating the healthy sheep of a flock.”

“The CHAIRMAN then read the original resolutions and the amendment; and, on a show of hands, the numbers were:—

For the amendment	15
Against it	5
Majority	10”

The seemingly uniform success which has attended Mr. Fielder's plan in every instance in which it has been adopted should induce all persons who may be visited with this scourge to make trial of it. Further experience, if recorded in the clear and explicit language used by Mr. Holding, will soon furnish ample evidence to confirm its efficiency or show its inefficiency. The effect of inoculation upon those animals which might never have taken the disease, in “checking the growth of wool, loss of flesh, with a great risk of having serious effect on the lambs” in a breeding flock, are important points. With respect to Mr. Spooner's suggestion of enforcing returns to the Boards of Guardians of the existence of disease, we do not think it probable that such a proposition would be entertained by the Legislature. The act of last session, if properly enforced, will prevent the spreading of the disease; and the interest parties have in getting rid of the malady will be sufficient inducement to induce the adoption of means to that end, especially if it shall appear that a plan so simple as that proposed by Mr. Fielder shall turn out efficacious.

CALENDAR OF HORTICULTURE.—APRIL.

We beg to solicit the attention of our readers to the amazing difference which the weather of the first three months of the current year exhibits when compared with that of the corresponding period of 1848. January was very mild and rather fine. February dry beyond precedent, if we except the vast fall of rain concomitant with the hurricane of its last day; and March, so far as it has advanced, has been entirely seasonable; but more remains to be said thereon at the close of this

calendar. In 1848 the ground was soaked, and continued so to be till nearly the end of April. The chief remark to be impressed refers to the condition of the *broccoli plants*, which, mild as has been the average temperature, have suffered more in the centres of the inner foliage than they usually do in winters of ordinary severity. The truth is, that the whole of the herbage being quite replete with water about the close of autumn, in consequence of the vast rains of October, the keen white frost of mid-

November tended to decompose the delicate tissues of the heart leaves, which now, to a great extent, appear as if burnt up; and some plants have totally decayed. Knight's "protecting," however, abounds; and this beautiful and delicious dwarf has long been brought to market: it is a variety which, when true, merits much attention.

OPERATIONS IN THE KITCHEN GARDEN.

All the directions in the last calendar will here apply; but if the dry weather continue to the end of the month, it will become a work of some difficulty to sow and transplant vegetables with success. However, I will take things in due order, considering the month to be divisible into four periods of about eight days each. In the first, then, without any delay, transplant all the brassicas sown in the autumn—cabbage, savoys, borecole, cauliflower, and also some lettuces. They who can succeed with the last will be fortunate, unless the plants that have stood the winter in frames or pots under glass have been put out very early: for removed lettuces almost always run to seed; and therefore we would confide in seed-sowing, selecting the smallest self-hearting cabbage, and some of the hardest *cos* varieties.

Sow more *spinach*, a good sprinkling of early *stone-turnips*, and *horn-carrot* for drawing young. *Sweet herbs* can be raised from seed; but it will generally be advantageous to increase every species of sweet and pot herbs by slips, rooted layers, or by running roots—as, for example, garden and pepper mint. *Asparagus*, *rhubarb*, large and small, *sea-kale*, and *artichoke* should be planted, otherwise their buds may be two far advanced. *Sea-kale* can be easily raised from seed, and *asparagus* also.

Small Sallading—radish of various kinds—spindle and turnip-rooted should be sown three or four times in succession, according to the required supplies; and if the weather prove frosty it would be prudent to cover the sites with fern or long litter, being careful to rake this aside in mild days or nights, using a wooden rake. Birds are easily scared by thin shoe-maker's twine stretched along and over the surface and lines of seeds, raised by sticks a few inches above the ground.

Garlic, *shallots*, and *chives* may still be planted.

Onions for large bulbs. It is full late to allude to this subject; but it is better to take time by the forelock, and do good by anticipation, rather than to lose sight of a probable advantage. A few weeks since some writer in the *Gardener's Chronicle* informed its readers that after deep digging and thorough preparation of the soil (which at all times should be, if possible, an unctuous, mellow, and rather sandy loam, as the staple), instead of sowing the seeds in drills without further preparation, he

was in the habit of laying on a quantity of reduced manure, and sowing the seed upon that substance itself, covering it with a very little light earth quite fine. The surface was then made level and very firm by the flat of the spade. As the plants rose and grew, the spaces between the rows were sprinkled every three weeks with a mixture of coal-soot three parts, and the purest guano one part, choosing showery weather. The success had been proved during several consecutive seasons. The paper is not now at home, therefore I cannot be certain of some minutiae, but enough is stated for the present month should any one be disposed to try the experiment. As to the white pickling onion, the small silver-skin variety is to be sown very thickly in poor soil, made very fine at the top.

Kidney beans may be put into boxes or pots of light soil mixed with decaying leaves or fern—to be kept in a frame or warm shed. Do this in the second or third period of the month. The seeds will speedily germinate, and can be transplanted with some of the adhering litter, when the warm weather has established itself. At the end of the month, when sunny, a row or two may be sown in the natural ground. Beans are lost by damp ground and cold. It is said that runners may be kept all winter as are dahlia roots. I have tried a row of fine roots by heaping a ridge of earth over them where they grew, on a south aspected border, with a wall to the north. We shall soon learn how they have weathered the winter. In sowing for runner-beans, sow first in pots, &c., and follow up as above recommended for dwarfs.

Celery.—Prick out, over a stratum of littersy manure, the young plants that were sown in the last two months: this nurse bed ought to be rich, so as to induce a great number of short stocky roots; and thereon may stand the plants at three inches apart during five or six weeks. They will then move with safety to the prepared trenches.

Sow *peas* twice, at any of the convenient periods, remembering some of the tall marrows, at six feet distances between the rows. Stake, in time, all the former sowings, and draw earth, after a shower, to the plants. Sow pumpkins and gourds.

Destroy *weeds* every where; hoe among all the drilled crops; keep the intruders thoroughly under, otherwise much trouble and injury will be incurred. Air-slaked, dry lime, sprinkled late at night, and by sunrise on the following morning, will tend much to destroy the small voracious slug.

Cucumbers, *melons*, *rhubarb* should be forced, and carried on according to the directions before given. *Kidney beans*, three in a pot, would prosper better in a tanked pit than in a dry hot-house; for, a healthy vapour and seasonable air would more effectually prevent the red spider or acarus,

FRUIT DEPARTMENT.

Fig-trees on the open wall, prune and regulate; cut back so much of the shoots as may have been damaged by frost, continuing all the sound shoots at full length, and at least 10 or 12 inches asunder: the horizontal training is suitable to low walls. The best protector of *peach* and *nectarine* trees is found in sloping glass sashes, their upper ends reclining against the wall under a boarded, narrow coping, the lower ends being made to rest upon a frame-trail firmly fixed in the ground, but raised to some height above it, so as to be open to the air at bottom. This arrangement, if the lights are made to fit close at their sides, will favour the gardener's object when he fumigates with tobacco smoke; especially if the side at each end be closed with a piece of stout linen or cotton cloth. If weather prove moist, *strawberry* runner-plants can still be planted. All the bearing plants should now be timely mulched with long litter, laid at least two inches deep over the surface of the ground, and close up to the plants. It is far more safe and beneficial to retain moisture already existing, than to supply it in times of drought by artificial waterings.

FRUITS UNDER GLASS.

Vineries.—The earlier will show ripe clusters. Give air, and avoid much water. The scalding of grapes is often induced by direct sun through clear glass. Rough glass, admitting white diffused light, would, I think, prove the grand remedy. White light contains all the rays—chemical (actinic), or, perhaps more correctly, chemico-magnetic), colorific, including the red and yellow, and heating rays. Nature, and the requirements of trees, will appropriate the several agencies: man is still far too undecided to warrant any interference with the separate luminous properties of light; let it then, in its integrity, have free but chastened ingress; and, if exposure be required, open the sashes for free ventilation when the air is soft and balmy.

Pinery.—Fruit is now coming forward: increase the temperature, and admit air in the finest weather. The new theory and practice instruct us that, "when the plants are grown in the soil, without pots, and the bed is heated by hot water pipes, the growth will be much finer, and the fruit considerably larger, with scarcely a tithe of the trouble attending their culture in pots, with tan." N.B.—and prove by rigid experiment.

ORNAMENTAL DEPARTMENTS.

The following directions are condensed from the Chatsworth and Dalkeith authorities—for I deem them to be the highest. "Finish pruning roses—dwarf and standard; but roses recently planted should not be pruned until the sap shall have begun to ascend, which will be shown by the breaking of the buds. (Here, in the south, the buds are very forward; and, therefore, the knife may be safely

used at half an inch above those buds which are so situated as to promise a handsome balanced head.) Prepare the flower beds, and plant all kinds of perennials and biennials; fill up blanks in the borders, and increase desirable herbaceous stock by division of the roots. Sow hardy annuals, studying the habits and colour of a few of the best kinds, so to arrange them that a happy combination of bloom may be seasonably produced. Propagate, or pot off, the verbenas, scarlet geraniums, &c., and forward them previous to planting-out in May and June. Prepare the dahlia roots for the same purpose. Mow and dress lawns; clip box; clean and roll gravel walks; put on fresh gravel where wanted."

CONSERVATORY, GREEN-HOUSE, AND FLOWER-POTS.

Make slight advances of heat (first having duly repotted, pruned, and trained the plants which demand such attention); avoid fire where possible, and admit air freely; water newly potted plants with care, and do not remove whilst recently watered. Watering must, in sunny weather, be given in time.

STOVE PLANTS

Demand like attention, particularly as to shifting, dressing, due watering, and putting on air. Prune and train the climbers. Among the latter few can equal the elegant *combretum coccineum*—usually called *purpureum*. Its treatment is given in Paxton's first number of the new series of his magazine.

ORCHARD HOUSE.

The plants beginning to grow should be placed at the warmer part of a house, attending carefully to watering, a highly vaporous atmosphere and partial shade. Flowering plants should neither be kept so warm or moist as those which are growing. I inspected the houses of Messrs. Rollinson, on the 17th. There were not many species in bloom; but the habits of the many hundreds there growing, or preparing to stir, are equally mysterious and pleasing; the houses were at 80 degrees about 1 p. m.; the house a bagnio of moisture; and the floor completely covered with water, from the morning sprinklings.

The *Equinox*—that critical period when the ecliptic and equinoctial coincide, and the sun enters the ascending sign *Aries*—took place on the 20th, at 13 minutes past 5 p. m., the weather being fine, the barometer rising and high; the wind passing from east to north by west. The mercury still rises, (21st morning), but the wind has backed to S. W. This change gives the only hint of a struggle, or at all renders the prognostic of a dry summer as in any degree doubtful. Rain, however, is required. The weather is now keenish; but a finer time for culture and tillage I never recollect during a very protracted experience.

J. TOWERS

METEOROLOGICAL DIARY—1849.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.			WEATHER
Day.	8 a. m.	10 p. m.	Min.	Max.	10 p. m.	Direction.	Force.	8 a. m.	2 p. m.	10 p. m.	
Feb. 20	29.99	29.64	44	47	43	W. by South	airy	cloudy	cloudy	cloudy	rain
21	29.94	29.80	37	48	48	Westerly	lively	cloudy	cloudy	cloudy	dry
22	29.76	29.76	45	54	44	W. by North	v. brisk	cloudy	fine	fine	dry
23	29.97	29.90	37	54	41	W. by N., S'tly	gentle	fine	sun	fine	dry
24	29.66	29.65	40	45	41	W. by N., by S.	gentle	cloudy	cloudy	cloudy	drizzle
25	29.50	29.40	40	48	45	S. West	airy	cloudy	cloudy	cloudy	very wet
26	29.38	29.87	38	46	37	N. by West	gentle	cloudy	cloudy	fine	dry
27	30.—	30.—	30	48	38	S. by East	gentle	fine	sun	fine	dry
28	29.66	29.30	36	45	33	S. West	violent	cloudy	cloudy	fine	rain
Mar. 1	29.39	29.98	32	47	40	N.W., variable	bsk, var	cloudy	sun	fine	dry
2	30.10	30.24	38	48	42	N. by W., W.	lvly, gtl	fine	sun	fine	dry
3	30.32	30.40	41	52	47	Southerly	gentle	cloudy	cloudy	cloudy	dry
4	30.42	30.44	43	57	45	S. West	gentle	fine	sun	fine	dry
5	30.46	30.56	40	52	48	S.W., W. by N.	gentle	cloudy	cloudy	cloudy	dry
6	30.56	30.36	34	56	44	Westerly	airy	fine	sun	fine	rime
7	30.10	29.90	42	50	47	Westerly	v. brisk	fine	cloudy	cloudy	dry
8	29.90	29.83	30	40	36	N.W., N.	gentle	fine	sun	cloudy	snow
9	29.88	29.90	28	44	33	N., N. by W.	brisk	fine	sun	fine	snow
10	30.19	30.40	32	40	34	Northerly	gentle	fine	sun	fine	dry
11	30.40	30.30	31	42	40	W. by S.	brisk	fine	cloudy	cloudy	dry
12	30.12	30.16	38	54	47	W. by N.	gentle	cloudy	cloudy	cloudy	dry
13	30.05	30.27	54	55	44	W., N.W.	airy	fine	cloudy	cloudy	dry
14	30.28	30.24	40	47	44	W., N.W.	gentle	cloudy	cloudy	cloudy	dry
15	30.26	30.26	46	50	48	W., N.W.	gentle	cloudy	cloudy	cloudy	dry
16	30.29	30.30	40	50	42	N. West	gentle	cloudy	haze	cloudy	dry
17	30.30	30.20	40	50	47	N. by E., var.	calm	fine	sun	fine	dry
18	30.16	30.08	37	49	43	Westerly	gentle	hazy	cloudy	haze	dry
19	30.08	30.—	40	52	42	Easterly	brisk	fog	sun	fine	dry
20	30.09	30.22	37	52	40	East, N.W.	airy	fine	sun, hz	fine	dry.

ESTIMATED AVERAGES OF MARCH.

Barometer.		Thermometer.		
High.	Low.	High.	Low	Mean.
30.77	28.87	66	24	43.9

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Lowest.	Highest.	Mean.
49.	38.2	43.6

WEATHER AND PHENOMENA.

February 20.—Wind; clouds and rain. 21.—Changeable. 22.—Clouds and gleams. 23.—Cheerful and bracing; highly-tinted sunset; from the 12th to this evening, *varying spots on the sun's disk*. 24.—Overcast throughout. 25.—Showers, and a wet evening. 26.—Changeable. 27.—Strong rime early; fine cheerful day. 28.—Hurricane, and the wettest day long remembered; some snow at night. March 1.—Calm at evening; snow gone. 2.—Very fine; weather settles; *one solar spot*. 3.—Overcast; clouds; dry. 4.—Superb; rich horizon at sunset, yellow below licac tint; *two spots*. 5.—Sober, quiet day. 6.—Gorgeous, golden sunset; green stripes intervene. 7.—Starchy clouds; fierce wind; rainy evening. 8.—Keen; hint of granular snow. 9.—Cold; a little snow late. 10.—Rather hazy. 11.—Overcast; changeable. 12.

—The same. 13.—Generally overcast as of late; some gleams. 14 and 15.—The same. 16.—Lofty haze. 17.—Splendid day; lofty haze, often seen in a dry March. 18. Fog early and late. 19.—Dripping fog breaking away; clear at 2 P.M. 20.—Wind; changeable; fine; *three solar spots; the equinox at 5 h. 13 m., a superb promise.*

LUNATIONS.—February: New moon, 23rd, 30 minutes after 1, morning. March: First quarter, 3rd, 30 minutes after midnight; full moon, 8th, 20 minutes after 1, morning; last quarter, 17th, 39 minutes after midnight.

REMARKS REFERRING TO AGRICULTURE.—More sun has occasionally been seen, but who can retrace a finer period? and what a contrast when compared with the deluging weather of March, 1848! Now, go where one may, the land is covered with healthy, but not gay, crops. The ploughs are actively employed, and the furrows turn beautifully. The summer promises to be fine; but our weather prophets begin to talk of the "Saturday new moon" of the 24th inst., which *ought* to be rainy. Why, we dare not surmise, and certainly do not wish to have a *month's rain*, though showers and gleams off and on would be very benign.

Croydon.

J. TOWERS.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR MARCH.

During nearly the whole of the month, the weather has proved uninterruptedly fine for all out-door farm operations. The absence of rain has enabled our farmers in most of the agricultural districts to progress rapidly with both ploughing and sowing, with the land in fine condition for the reception of the seed furrow. The accounts which have come to hand, respecting the appearance of the winter wheats, are, on the whole, very satisfactory. Some of our correspondents have intimated that the plant is patchy and thin upon the ground; but their communications must be regarded as the exception and not the rule. We may therefore observe, generally, that the foundation has been laid for future plenty. Still, the prospects of the agricultural body, as respects prices, are the reverse of flattering. The operation of the present laws, having reference to the importation of foreign corn, has, as might be expected, produced a considerable influx of grain, meal, and flour from abroad—the total quantity received since the beginning of the present year having amounted to about 2,000,000 quarters, nearly the whole of which has passed the Customs for home consumption; and, notwithstanding that our foreign advices are to the effect that only a moderate business is doing abroad on English account, it is tolerably evident supplies will continue to arrive hither in tolerable abundance during the whole of the coming season.

The quantity of English wheat on hand at this time is much smaller than that held at the corresponding period in 1848. This observation applies more particularly to the western, southern, and some of the eastern counties. The condition of the wheats is turning out extremely bad; hence, the quotations have a much wider range than in the generality of years—the most inferior samples of red Essex having sold as low as 36s. in Mark-lane. We can easily understand that the preference has been given to foreign samples, which have come to hand in much better condition than usual, and which, as a matter of course, have greatly interfered with the English wheat trade. This must be obvious, when we assert that, from the 1st of January, current year, to the 21st of March, the total sales of wheat of home produce in the about market were only 38,413 quarters. At the same time in 1848, they amounted to 61,465 quarters. This year's transactions have, therefore, falling off by 23,052 quarters. Those of spring corn have declined in the same ratio.

Comparatively speaking, the fall of lambs has been good. Severe losses have been sustained by some of the flock-masters in the more forward counties; but our firm impression is that the actual number of lambs produced this season is in excess of many past years. That the aggregate supply of fat stock has considerably increased within the past twelvemonth, is tolerably certain. The state of our

markets, and the low prices at which both beasts and sheep have been disposed of, are evidence of that fact. The efforts of the graziers to arrest the progress of the disease, which last year threatened to carry off the best portions of their stock, have, to a considerable extent, proved successful. Still, we hear of infection in several localities, which will require the most vigilant attention to keep in check. A scarcity of turnips is already complained of; yet, as the supplies of other kinds of food are large, and as cake is considerably reduced in price—the highest figure in the metropolis being only £10 5s. per 1000—stall-fed and other stock has fared extremely well.

The arrivals of foreign potatoes in London, as well as at the outports, continue on a very liberal scale. From the 1st of January to the close of the present month about 13,000 tons have come to hand for the metropolitan markets in fair condition, and which have met a moderate demand, at prices varying from 75s. to 100s. per ton. These arrivals, though their boiling qualities are not good, have formed quite the staple commodity in poor neighbourhoods. The principal cargoes have arrived from Holland and Belgium, the remainder being from France and Germany. The quantity of English potatoes on hand has been reduced to a narrow compass; and it is scarcely possible that any important addition to our supplies will be made from the Channel Islands, from which only 130 tons have reached us during the whole of the year.

The provision trade, though subject to some extensive fluctuations, has been by no means brisk. Bacon has declined to some extent, and prime sizeable Waterford has sold as low as 56s. per cwt. At the corresponding period in 1847, that article was realizing 80s. per cwt. The supply of pigs, in Ireland, is rapidly increasing; and we learn that immense supplies of bacon may be expected, this year, from the United States.

Another arrival of preserved meat has taken place, since we last wrote, viz., 347 cases from Sydney. Whether these shipments will be continued, will depend upon the price obtained for the commodity here. Up to the present time no sales have been effected, even though the importers have offered to take 6d. per lb. In the event of these arrivals getting into favour, it is scarcely possible to calculate what may be the effect upon the value of English-fed beef and mutton, as it is well known that in New Holland, as well as in most parts of South America, meat may be had at extremely low prices. A successful market opened here would produce immense importations, and which, doubtless, would pay extremely well.

In the course of the month, wheat has declined in value in nearly the whole of our markets fully 2s. per quarter; flour has fallen 2s. per sack; and nearly all kinds of spring corn have sold at reduced currencies. The bonded stocks of grain are small;

but those in the free warehouses are increasing. There has been an upward movement in the value of both hay and straw in London, owing to the short supplies forwarded for sale. The best meadow hay has produced £4; the best clover £5; and the best wheat straw, 32s. to 34s. per load.

From Ireland and Scotland, we learn that most farm labours are seasonably forward. The corn and cattle markets have continued in a very dull state, and the quotations, almost generally, have had a downward tendency.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

We do not pretend to the gift of prophecy, but daily observation and experience fully confirm the remarks we have so frequently offered to the notice of our readers, on the all-important subject of future supplies and prices of fat stock. In the month just concluded, Smithfield, as well as the leading markets in the provinces, has been somewhat heavily supplied, and prices in some instances have fallen to a point below which the graziers can live. This observation, be it understood, is not the offspring of imagination, but the result of an intimate knowledge of the debtor and creditor side of the producers' ledgers. Much has been said and written upon this subject; but we have looked in vain over the lucubrations of theorists to discover any real cause why we should not attribute the present depressed state of the cattle trade to any other cause save that of the supplies exceeding the demand. Provisions generally, it cannot be denied, are selling at prices which place them within the reach of all classes. The foreigner sends us not only his live cattle in abundance, but he is using every effort to produce for us salted as well as preserved meats, to an extent never before known. Reduced value is the result; and yet, though the importers tell us that their arrivals do not pay, the prospect is an increased, and not a diminished, importation. Amongst the "sayings and doings" of those who are strenuous advocates for the present state of things, we may, in the first place, notice the observations made in the House of Commons by the Chancellor of the Exchequer. On the 14th ult. he brought forward several comparisons of the value of live stock in Smithfield in 1844 and 1848, thereby showing that prices were higher in the latter than in the former year. That the comparison was a most unfair one, every practical man might readily discover. In 1844, the scarcity of food compelled the graziers to sell their stock, frequently in a half-fat state, at a ruinous loss. In 1848 they were, from an abundance of turnips, &c., enabled to keep back a portion of their supplies from our markets, and hence the comparative rise in the quotations. Leaving out of our present matter any further allusion to the Chancellor's statement on the night in question, merely observing that the returns, by whomsoever drawn up, show a lamentable want of even the common rudiments of arithmetic, we shall now briefly refer to the remarks which were published in the *Mark Lane Express* on the subject of the

inaccuracies in the returns issued by the Board of Trade, in reference to the importations of foreign stock into the United Kingdom. The Smithfield reporter in the *Mark Lane Express* has proved, beyond a doubt, that the actual imports of live stock into London have considerably exceeded those stated in the above-named official documents; and this important fact he has shown from the lists issued by the Customs in London. The subject has been judiciously mooted in the Commons by Mr. Miles. The Chancellor, however, has defended his returns as correct. We shall possibly have more to say upon the matter in our next.

The imports of foreign stock into London since our last have been as under:—

Beasts	1,736	Head.
Sheep	5,617	
Lambs	7	
Calves	624	
<hr/>		
Total	8,034	
Corresponding month in 1848..	4,421	

At the outports the arrivals have somewhat fallen off, although prices in the north have not fallen to the same extent as in London.

TOTAL SUPPLIES ON SALE IN SMITHFIELD.

Beasts	15,618	Head.
Cows	654	
Sheep	91,380	
Calves	1,222	
Pigs	1,820	

CORRESPONDING PERIODS.

	Mar., 1846.	Mar., 1847.	Mar., 1848.
Beasts	12,579	16,742	15,407
Cows	521	698	601
Sheep	77,010	84,650	72,010
Calves	731	907	1,122
Pigs	2,081	2,440	2,225

The bullock droves have been chiefly drawn from the following quarters:—

Norfolk, Suffolk, Essex, and Cambridge-shire	6,700
Northern, western, and midland districts..	3,600
Other parts of England	1,650
Scotland	940

At least three-fourths of the beasts and sheep have come to hand in excellent condition, and heavy in weight.

COMPARISON OF PRICES.

Per 8 lbs. to sink the offal.

	March, 1848.		March, 1849.	
	s. d.	s. d.	s. d.	s. d.
Beef, from..	3 4	to 4 6	.. 2 6	to 3 8
Mutton .. .	3 8	5 6	.. 2 10	4 4
Veal	4 0	5 2	.. 3 8	4 10
Pork	4 0	5 0	.. 3 2	4 2

Up to Newgate and Leadenhall nearly 20,000 carcasses of meat have come to hand, chiefly by railway, from various parts of the country. The general trade has ruled heavy, on the following terms:—Beef, from 2s. 2d. to 3s. 4d.; mutton, 2s. 4d. to 3s. 8d.; veal, 3s. 6d. to 4s. 8d.; and pork, 2s. 10s. to 4s. 2d. per 8lbs, by the carcass.

REVIEW OF THE CORN TRADE

DURING THE MONTH OF MARCH.

The weather has been highly propitious since our last, and rarely has a more favourable period been experienced for preparing the land and getting in the Lent crops. All kinds of farm work are therefore in a state of great forwardness, and farmers will shortly have leisure to thrash out and bring to market what wheat and other grain they may still have to dispose of. It is consequently more than probable that the deliveries from the growers will be larger next month than they have been of late, and as there is little prospect of the foreign supplies falling off, there is not much reason to calculate on higher prices.

It is difficult to form anything like an accurate estimate as to the quantity of home grown corn in the kingdom. The number of stacks seen in different parts of the country afford no criterion, as many farmers have their grain thrashed and kept in granaries or barns; but from the almost universal complaints of the yield to the acre at the time of harvest, and the very unfavourable reports which have reached us at different periods, as thrashing has been proceeded with, in regard to the quantity of corn in proportion to straw, we feel fully satisfied that the produce of nearly every description of white corn was exceedingly deficient last year. The deliveries have certainly been on a smaller scale than usual during the winter months; still we are inclined to think that farmers hold less than in ordinary years at the corresponding period. That this is the case in what are usually called the home counties—Essex, Kent, and Suffolk—we feel perfectly convinced; and though the harvest was much better in the northern and eastern than in the southern and western parts of the kingdom, still we question whether it reached an average, even in the most favoured localities. Under such circumstances, the low prices to which all agricultural produce has been reduced by unrestricted importation are entailing most serious losses on the home grower, and no surprise can be felt at the growing alarm and despondency which everywhere prevail. Whether we have even yet reached the lowest point may be questioned.

The stocks of foreign in granary (particularly of wheat) are heavy—heavier than many parties are disposed to admit. By a return made up, on the motion of a member of the House of Lords, it was ascertained that on the 1st of Feb. there were in warehouse, in the United kingdom, of wheat and

wheaten flour, 1,200,000 qrs. The importations since then have, we think, been about equal to the consumption, and the stocks have, we are inclined to believe, been rather added to than diminished. The bulk of the supply that has hitherto reached us from abroad has been from France, Holland, Belgium, and ports lying east of Gibraltar: from the Baltic scarcely anything has as yet been received, and that being the quarter from whence we usually obtain a large proportion of our importations, the probabilities are that our markets will continue to be inundated with foreign grain, and that the British farmer will have to content himself with such prices as those now current. It is true that the political aspect of the north of Europe is just now threatening: though the armistice has been extended, the Schleswig Holstein question is still unsettled, and the King of Denmark is making active preparations for a renewal of hostilities. War between the Danes and Prussians would certainly have the effect of checking supplies from the Baltic; but there is no chance of English vessels being interfered with; hence under any circumstances the wheat of Russia and Poland, and the barley and oats of Denmark and Sweden, will find their way to our shores. The chances of any rally in prices are therefore, in our opinion, extremely slight, and we cannot hold out any very sanguine hopes to our agricultural friends. If matters are to go on in this way, the tenant farmers must be ruined, and the landed proprietors suffer extensively. Farmers are proverbially patient to endure, and difficult to be roused to united exertion; but their present position is too serious to allow of apathy, and there appears something like a determination to press the consideration of their grievances on the attention of the legislature, which will, we trust, be productive of beneficial results.

If their prospects are discouraging in one point, they have at least some grounds for hope in regard to the future as relates to the next harvest. From all parts of the kingdom we receive favourable reports as to the appearance of the autumn-sown wheat. The ravages of the slug, which at one time created more or less alarm, have been checked by the severe night frosts which have been experienced at different times during the month, and the plant has generally a promising and healthy aspect. This, and the excellent manner in which the sowing of spring corn has been accomplished, ought to afford

some alleviation to the despondency which the unremunerating return of the last crop has been calculated to inspire.

In giving a review of the course of the grain trade during March, we shall have to repeat nearly what we have had to record month after month. The tendency has been constantly downwards, and even now it may be doubted whether we have touched the lowest point. It is absurd to suppose that prices will range higher in this country, now that the importation is free, than on the continent of Europe, except the small difference of the cost of transit. In many of the northern countries wheat is principally grown as an article of export, the bulk of the people subsisting on rye and other inferior sorts of grain. The cost of production varies, of course, in different countries; but so long as wheat commands about 40s. per qr. in our markets, and prices of other kinds of corn rule in proportion, we shall never be without abundant supplies, except in years of great scarcity all over the world. At Mark Lane business has been very depressed throughout the month, and the tone of the trade there has governed most of the provincial markets.

The arrivals of home grown wheat into the port of London have been exceedingly small; but the abundance of foreign received has prevented any scarcity being felt. A considerable proportion of the supply from abroad has consisted of good qualities, the growth of last year; we have consequently had plenty of new as well as of old wheat, and many of the millers have carried on their business without using any English. Trifling therefore, as have been the receipts of the latter, the quantity brought forward has proved amply sufficient to satisfy the demand, and the tendency of prices has been constantly downwards. On Monday, the 5th March, purchasers declined to act until factors consented to submit to a reduction of 1s. to 2s. per qr., at which abatement the Essex and Kent supply was placed with some difficulty. During the succeeding week a further small reduction occurred; and though prices have remained nearly stationary since then, there have been no symptoms of a rally, and quotations are now 2s. to 3s. per qr. lower than they were at the close of February. 50s. per qr. may be regarded as an extreme price for the finest samples of white, and red may be had at from 38s. up to 45s. per qr., the latter being about the top quotation. The quality has been somewhat improved by the drying winds lately experienced, and we may expect that all that has been thrashed this month will come forward in fair condition, which will certainly tend to facilitate the sale.

Foreign wheat (as already remarked) has come freely to hand, the arrivals at this port having since the end of February amounted to upwards of 130,000 qrs. Some of the large cargoes of Polish Odessa, it has been found impossible to place; and importers have, therefore, been compelled to land. A large proportion of the supplies from the near ports has gone to the millers direct. Hence their wants have been provided for without the necessity of appearing as buyers in the market; but that they would

in general have done much better if they had not imported, there can be no doubt. Indeed, we should not be surprised if the unfavourable result of the recent importations were to act as a check to the system of making free-on-board purchases on the continent.

The fall in the value of foreign has been fully as great as that which has taken place in prices of English wheat. Capital qualities of red Brabant and French have lately been offered freely at 44s. to 45s., and secondary sorts at 42s. to 43s., whilst Polish Odessa, a little out of condition, has been sold at 38s. to 39s., and fair parcels at 40s. per qr. We need scarcely say that the importers must be heavy losers at these prices, still, the stuff must be sold; and few parties feel sufficient confidence in the probable future range of prices to enter into anything like speculative investments. There has consequently been, and there still is, considerable pressure on the market; and unless the country inquiry should become much more extensive than it has yet been, a further reduction will probably have to be submitted to before any rally can occur. There has not been much done in free-on-board cargoes since our last, though the offers from the other side have been on moderate terms—say 40s. to 41s. per qr., cost and freight, for fine Rostock; and other descriptions at proportionate rates, leaving a small margin for profit on our present prices.

The millers did not alter the nominal top quotation of flour until the 19th inst., when it was put down 2s. per sack, at which price it has since remained: 42s. per sack is, however, out of proportion to the rates at which foreign flour has been selling, and can only be regarded as a *nominal price*. Very excellent French manufacture has been offered at 32s. to 33s. per sack, and good brands of American at 24s. to 25s. per brl. It may, therefore, be easily conceived that the sale for the top marks of English has not been very extensive. Norfolk household and similar qualities of flour may be quoted from 30s. to 32s. per sack.

Barley of home growth has come forward rather sparingly; but the demand for malting sorts has been extremely slow, and for other purposes there has been an abundance of foreign. The barley trade has consequently remained heavy throughout the month, with the turn generally in favour of the purchaser. Choice English malting samples still bear a relatively high value, owing to their real scarcity; but good Saale malting samples—a quality in good repute with our maltsters—have lately been sold at 24s. to 26s. per qr., whilst common light parcels of foreign for grinding are only worth 20s. to 22s. per qr. at present.

The drooping state of the barley market has had more or less influence on malt; and the operations in the latter article have been very unimportant. The partial agitation for a repeal of the excise tax has had little influence one way or the other, it being generally deemed very unlikely that the Chancellor of the Exchequer will give up this important revenue. Quotations of malt have not varied materially; but, on the whole, the purchaser has had the advantage in regard to price.

During the early part of the month we received rather considerable supplies of oats from our own

coast and Scotland, with a few Irish cargoes; but until the last week or two, the foreign arrivals were small. As the latter have increased, so have the home supplies fallen off; still the total receipts into London have been large. The principal dealers have acted with much caution, under the impression that a large number of vessels, despatched at first open water from some of the near Baltic ports, must be close at hand, and that, upon arrival of this fleet, they will have a more favourable opportunity of replenishing their somewhat exhausted stocks. The finer sorts of oats have become scarce, and have not been sold lower this month than in February; indeed, the alterations in prices of this grain since our last report were slight during the first three weeks of the month. Good Scotch and Irish feed may now be quoted from 18s. to 20s.; foreign, 16s. to 18s. per qr.; whilst inferior and unsound sorts of the latter, and light Irish, have been offered at very low rates—say from 12s. up to 16s. per qr.

Beans of home growth have come forward rather sparingly, many farmers preferring to use this article for feeding cattle to accepting the low rates current. Large horse-beans have been sold at about 25s., and other sorts at from that price up to 35s. per qr., according to quality. The value of Egyptians has not varied much; and the present quotation is about 22s. per qr. for fair qualities, in granary.

Grinding peas have, in consequence of their reduced value in this market (say 25s. per qr.), met with some attention; and the stock of foreign in warehouse has been a good deal diminished. English peas have been taken sparingly, the terms demanded being relatively high—say 26s. to 28s. for white boilers, and 28s. to 32s. for grey and maple.

In the early part of the month Indian corn was completely neglected, but within these eight or ten days the inquiry for floating cargoes has rather revived, a few orders having been received from Ireland; being however mostly limited too low to meet the views of holders, few bargains have been closed. Altogether this has been a very quiet month at Mark Lane, and quotations have undergone comparatively slight variations; whether the spring will impart more activity to trade remains to be seen, but hitherto we can discover nothing in our prospects to lead to very sanguine expectations.

The continued dull reports from Great Britain have had more or less effect on quotations at some of the continental markets, and by the latest advices from the Baltic we learn that more disposition had been shown to sell than at any previous period for some time past. The weather, after having been very mild in February and the early part of March, had again become severe, and at Danzig and Königsberg the thermometer stood below the freezing point on the 15th March.

Stocks are not by any means heavy at any of the principal ports in the Baltic, or prices would probably have given way much more than they have; we may, however, expect that as spring advances growers will bring forward good supplies, and we have no doubt that the value of most kinds of grain on the continent will be regulated by prices in the British markets. At Danzig only a moderate extent of business appears to have been done. Some

contracts for delivery in May had been closed at what may be regarded high terms, say for fine mixed, of 611bs. weight, 40s. per qr., and at corresponding rates for other sorts.

At one period a good deal of uneasiness was felt by Prussian merchants in regard to the probability of a renewal of hostilities with the Danes; but the latest reports from Denmark are of a more pacific character, and it is now expected that the Schleswig Holstein question will be settled without any further appeal to arms.

From Königsberg we learn that the navigation had become so much impeded by ice as to prevent shipments being proceeded with. The severity of the frost, and the fact that there had been little snow to afford a covering to the seeds in the ground, had given rise to some uneasiness; damage from the intense cold being apprehended. This had failed, however, to inspire holders of wheat with confidence, and the tendency of prices had been downwards. On the 15th inst., high mixed wheat was quoted 41s., and mixed and red of 60 to 611bs. weight 35s. 6d. to 37s. 6d. per qr. free on board; at these rates few buyers had appeared. At the lower ports prices of wheat have also of late given way more or less. The most recent quotation from Rostock is for the best new wheat 36s., and at Stettin 37s. to 38s. per qr. free on board. These rates certainly leave no margin for profit on shipments to this country, but they approach so nearly to that point, that we should not be surprised if moderate consignments were directed to Great Britain, shippers speculating on the possibility of some improvement here. At Hamburg very good red Upland wheat had been sold at 38s. to 39s. per qr. free on board, with low freight to London and Hull, to both of which places some quantity had been sent off. In the French and Belgian markets prices of wheat are relatively somewhat above quotations here, notwithstanding which constant supplies reach us from those countries, a good many purchases having been made on the other side by our millers and merchants when affairs wore a somewhat more promising appearance. These contracts were mostly for forward delivery, and are therefore only now in process of being fulfilled.

From the Mediterranean and Black seas we do not expect any further supplies at present; most of what was bought during the winter must now, we think, have reached our shores, and for some time past prices have been much more tempting at places nearer home than they have at any of the ports east of Gibraltar. The latest quotation for Polish wheat from Marseilles was 33s. to 35s., with 5s. freight to London or east coast, which certainly affords no inducement to speculate in that quarter.

The discouraging accounts from hence appear to have produced no effect on the American markets, and prices of bread stuffs have remained very steady for some time past. The latest advices from New York inform us that good brands of Western Canal flour had been held from 5½ to 5¾ d., which is more than the value of the same in our markets, and it is to be feared that those interested in the late large arrivals into Liverpool must have lost a good deal of money. Our correspondent at New York anticipates liberal arrivals from the westward

in April and May, and predicts that in the latter month it may be possible to buy good flour at 20s. per barrel. Even at that figure it would not pay, unless prices rise here, to buy on English account.

CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white.....	46 to 53	44 to 51
Ditto, fine selected runs.....	—	46 52
Ditto, red.....	42 46	39 44
Ditto, extra.....	46 50	40 46
Ditto, Talavera.....	—	—
Norfolk, Lincolnshire and Yorkshire..	—	41 44
Ditto, white.....	—	43 46
BARLEY, English, malting and distilling..	—	29 30
Ditto, Chevalier.....	—	30 32
Ditto, grinding.....	—	23 26
MALT .. Essex, Norfolk and Suffolk.....	—	58 59
Kingston, Ware, and town made....	—	58 60
OATS, Essex and Suffolk.....	—	16 19
Lincolnshire and Yorkshire (Polands)	—	16 20
Ditto, feed.....	—	15 18
Devon & West Country, feed or sack	—	14 16
Northumberland and Scotch, feed ..	—	18 21
Dundalk, Newry, and Belfast, potato	—	18 22
Limerick, Sligo, and Westport, potato	—	17 21
Ditto, feed.....	—	16 19
Cork, Waterford, Dublin, Youghal, and	—	—
Clonmel, black.....	—	14 19
Ditto, white.....	—	16 19
Galway.....	—	12 15
RYE.....	—	22 25
FLOUR, best marks (per sack of 280 lbs.)..	—	37 42
Norfolk and Suffolk, ex-ship.....	—	30 33
BEANS, Mazagan.....	—	28 30
Tick.....	—	27 30
Harrow.....	—	30 35
Pigeon, Heligland.....	—	33 36
Windsor.....	—	29 39
Long pod.....	—	27 29
PEAS, non-boilers.....	—	24 25
White, Essex, and Kent, boilers.....	—	25 27
Ditto, fine Suffolk.....	—	28 30
Maple.....	—	32 33
Hog and grey.....	—	28 30
CAKES, Linseed, English, per 1,000.....	£10 15s. to	£11 5s.

IMPERIAL AVERAGES.

FOR THE LAST SIX WEEKS.

WEEK ENDING:	Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Feb. 10, 1849..	45	11	29	3	17	3	27	2	30	11	33	0
Feb. 17, 1849..	47	0	29	8	17	2	26	9	29	9	34	4
Feb. 24, 1849..	46	4	29	8	17	5	27	8	30	10	32	11
Mar. 3, 1849..	45	6	29	1	17	7	26	11	30	2	32	11
Mar. 10, 1849..	45	1	29	0	16	11	26	11	30	1	33	1
Mar. 17, 1849..	45	4	29	2	17	0	23	9	30	11	30	8
Aggregate average												
of last six weeks	45	10	29	4	17	2	26	6	30	5	32	10
DUTIES.....	1	0	1	0	1	0	1	0	1	0	1	0

PRICES OF SEEDS.

BRITISH SEEDS.

Cloverseed, red 35s. to 40s.; fine, 45s. to 63s.; white, 34s. to 48s.
 Cow Grass (nominal)..... —s. to —s.
 Linseed (per qr.).. sowing 56s. to 60s.; crushing 42s. to 48s.
 Linseed Cakes (per 1,000 of 3 lbs. each) £9 0s. to £10 10s.
 Trefoil (per cwt.)..... 14s. to 21s.
 Rapeseed, new (per last)..... £27 to £30
 Ditto Cake (per ton)..... £4 15s. to £5
 Mustard (per bushel) white.. 8s. to 10s.; brown, (nominal)
 Coriander (per cwt.)..... 18s. to 25s.
 Canary (per qr.)..... 95s. to 105s.; fine, 108s. to 110s.
 Turnip, white (per bush.) —s. to —s.; do. Swedish, —s. to —s.
 Tares, Winter, per bush..... 0s. 0d. to 0s. 0d.
 Carraway (per cwt.)..... 28s. to 29s.; new, 30s. to 31s.
 Rye Grass (per qr.)..... 17s. to 46s.

WOOL MARKETS.

BRITISH WOOL.

LEEDS, March 23.—The anxiety arising from the state of affairs in India and on the continent of Europe have tended rather to check the demand for wool of all descriptions, during the last two or three weeks. Prices, however, are well maintained, holders being sanguine of a speedy return to more prosperous times.

LEEDS, March 23.—There is not any alteration of moment this week in this branch of trade. Sales of combing wools have been very limited, the manufacturers having good supplies in consequence of recent purchases. Prices are firm and stationary. In clothing and blanket wools there has been a moderate demand, and recent rates have been fully maintained. The supply at market of the latter kind of wool is not large.

LIVERPOOL, March 24.

SCOTCH.—There has, as a matter of course, been less doing in laid Highland Wool this week, as our stocks are so very light, and those who do want must pay the price. White of good quality is wanted. The selection of crossed and Cheviot is not good, and prices are well supported.

	s.	d.	s.	d.
Laid Highland Wool, per 24lbs....	6	9	7	6
White Highland do.....	9	6	10	0
Laid Crossed do... unwashed....	8	9	10	6
Do. do... washed.....	11	0	12	0
Do. Cheviot do... unwashed.....	10	0	12	0
Do. do... washed.....	14	6	16	9

FOREIGN WOOL.

BRESLAU, March 15.—We had again a very brisk business, and considerable sales effected at further improving price. All descriptions were required, particularly Silesian clips, of which, however, there is only a trifle left. Fine Russian and Polish fleeces, at from 54 to 62 thalers, have been taken in great quantities by Saxon and Berlin buyers, the lower and middling descriptions at from 38 to 48 thalers, by combers and country manufacturers. A large lot of good Polish lambs, from 54 to 56 thalers, was acquired for English account, an good refuse at from 45 to 50 thalers, for some Netherland firm. In the whole, nearly 1,300 cwt. have been taken out of the market, and about 500 cwt. freshly conveyed to it. The contracting business has at the same time been of an extraordinary liveliness, and very great purchases were concluded anew c the future clips, at a rise of 15 to 25 per cent. The Berlin and Vienna wool markets continue in a very good state, and contracts are made, both in Prussia and Austria, to an immense extent.—GUNSBERG.

HOP MARKET.

BOROUGH, MONDAY, March 26.

Our market wears a somewhat heavy appearance, the finest descriptions only being inquired for. Prices, however, continue firm at the annexed currency:—

Sussex Pockets.....	44s.	to	58s.
Weald of Kents.....	52s.	—	68s.
Mid and East Kents....	63s.	—	132s.

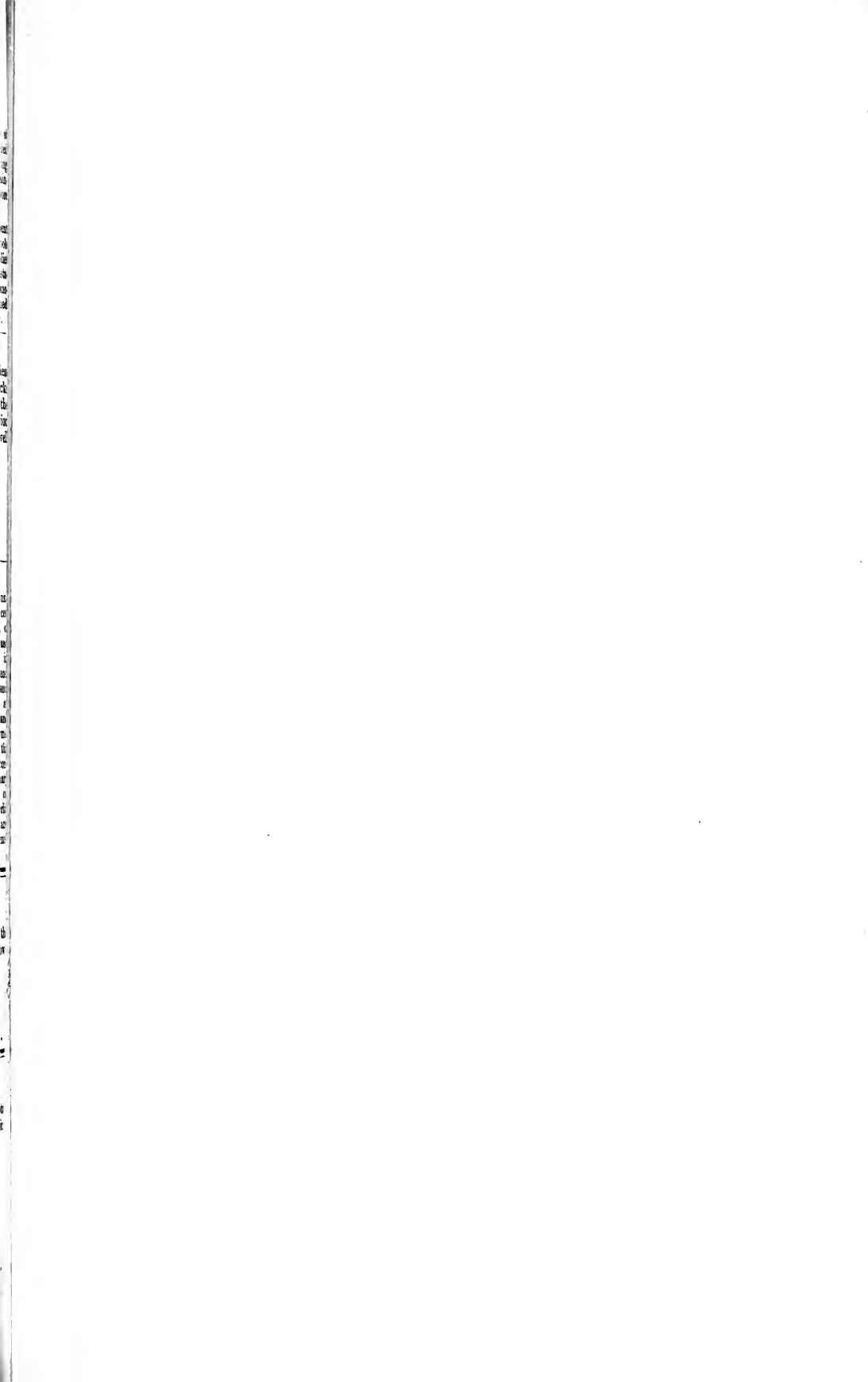
HORTON AND HART.

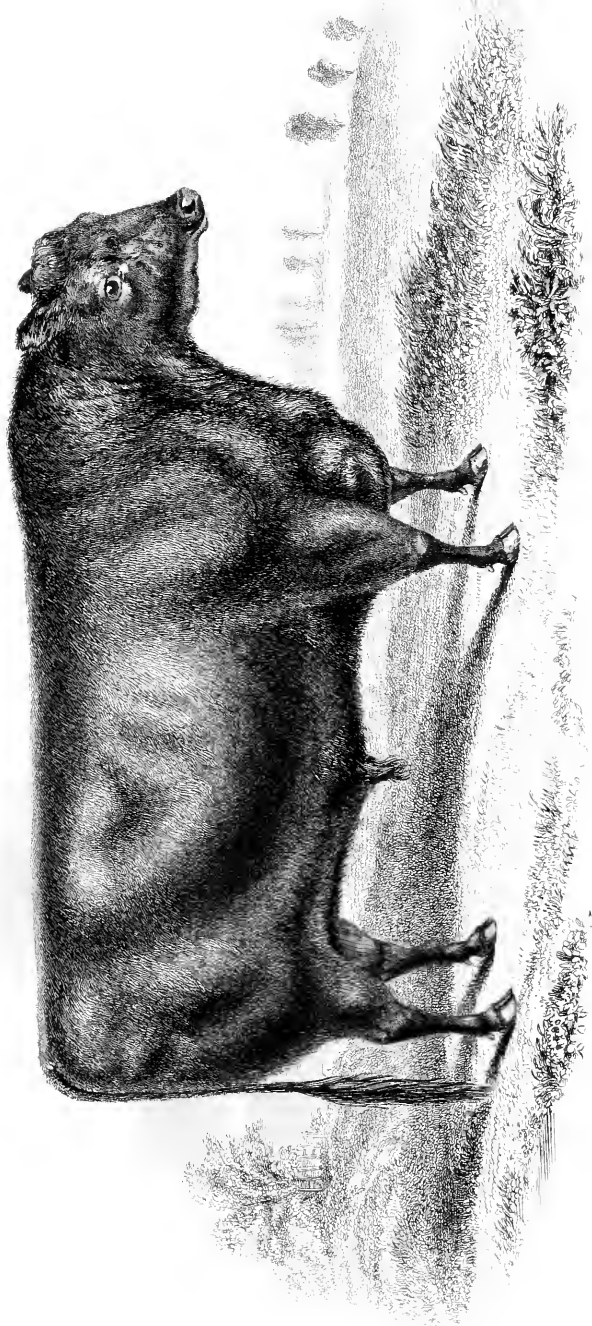
POTATO MARKET.

SOUTHWARK WATERSIDE, MARCH 26.

Our market continues to be well supplied; and Potatoes, from the cold weather the last week, are meeting rather a ready sale, at the following prices:—

Yorkshire Regents.....	110s.	to	140s.
Scotch.....	100s.	to	110s.
Ditto Cups.....	110s.	to	120s.
Ditto whites.....	80s.	to	90s.
French whites.....	80s.	to	100s.
Belgian whites.....	80s.	to	90s.
Dutch.....	80s.	to	100s.







Two Sheep in a Field

THE FARMER'S MAGAZINE.

MAY, 1849.

No. 5.—VOL. XIX.]

[SECOND SERIES.

PLATE I.

POLLED ANGUS BULL.

The subject of our first plate is a Polled Angus Bull, bred by one of the most distinguished cultivators of the Angus breed, Hugh Watson, Esq., of Keilor, and which obtained the first prize of £20 at the Highland and Agricultural Society's Meeting, at Edinburgh, in 1848.

This breed of cattle comes off the tract of old red sandstone which forms the plains of the counties of Forfar and Kincardine. It has recently been much extended in the north of Scotland, and is gaining preponderance over the native cattle of the adjoining districts. They are of different colours, but mostly black, with white marks. The Angus breeders prefer the black. This breed is well adapted to the natural and acquired fertility of a great tract of country, but cannot be brought to the same weight of muscle and fat in the same period of time as the Shorthorns and Herefords. "The older breed were horned, but with a tendency," says Professor Low, "it may be believed, to assume the hornless character. But however this may be, the hornless variety ultimately became the predominant one, and is now to be regarded as the cultivated breed of the district."

PLATE II.

TWO COTSWOLD RAMS.

The animals portrayed in this plate are Two Cotswold Rams, bred by George Hewer, Esq., of Northleach, Gloucestershire, which obtained the first and second prizes at the Royal Agricultural Society's Show at York, in 1848.

This breed derives its name from the Cotswold wolds, a tract of calcareous hills in the eastern division of Gloucestershire, which are comparatively infertile, but yielding a short sweet herbage in its natural state. It derives its name from *cote*—a sheep-fold, and *wold*—a naked hill. The modern Cotswold Sheep differs from those which inhabited these hills in former times. In 1629 Adam Speed thus describes the breed—"On those famous hills, called Coteswold hills, sheep are fed that produce a singular good wool, which for fineness comes very near to that of Spain, for from it a thread may be drawn as fine as silk." At the present day the Cotswold sheep are of a size somewhat superior to the highest breed of Leicesters, and their wool is more close on their body. The staple measures from 6 to 8 inches, and the fleece weighs upon an average from 7 to 8 lbs.; in inferior flocks not exceeding 5 or 6 lbs. It is strong, of a good colour, rather coarse, but mellow. They have a tendency to produce fat on the rump, almost producing deformity; but their constitutions are good, and they are a hardy race. The females too are considered good nurses, and are prolific; and the lambs are early covered with a close fleece. They weigh, when from a year and a half to two years old, about from 20 to 30 lbs. the quarter. Their most recommendable qualities are their hardiness and property of thriving under common treatment, and the faculty of the females of producing numerous lambs, and supporting them well.

OLD SERIES.]

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[No. 5.—VOL. XXX.

ON GRASS LANDS.

No. II.

BY J. TOWERS, MEMBER OF ROYAL SOCIETIES OF AGRICULTURE AND HORTICULTURE.

By referring to page 292, it will appear that the previous article had been devoted chiefly to the preparation of permanent pasture, for the purposes of the dairy. It is now proposed to offer a few paragraphs on the regular management of such pastures, and then to advert to grass-lands of a less permanent character, prepared artificially for the farm upon the "convertible" system of husbandry.

Permanent pastures are most important as attached to small establishments, (to say nothing of the chief "hay-making" counties,) wherein a system of self-production on the principles of domestic economy is adopted. Perhaps a life of more serene comfort cannot exist than is found in a retired family, the members of which are affectionately united in working out all the processes of a wise domestic economy, which the possession of from five to ten acres of good land renders feasible. Husbandry and horticulture can thereon be made to yield their every product; and, among other things, the dairy, for home supply and sale, might be rendered very remunerative. Such establishments require meadows of first-rate excellence; and many persons would find their interest in creating their own pasturage in the first instance. In addition to what has already been stated in the previous article, I would urge that (after sufficient drainage, and thorough preparation of the ground) no annual grain seeds or broad red clover be sown with the true grass seeds. The *large* and *smaller* seeds are now made up, duly separated by the best seedsmen; and we know of none more worthy of confidence than are Messrs. Gibbs and Co., of Piccadilly. The best Dutch clover is admissible, and it is permanent; but every annual plant proves detrimental to the sward, as, by its decay, it renders the surface patchy, the blanks so formed requiring to be filled up by genuine grasses—a process of considerable delicacy.

General Management.—Much depends upon the facility or difficulty with which an adequate supply of rich manure can be obtained. In situations remote from a large town, where the property must depend upon its own resources, frequent mowing, without ample manuring, do great injury; it therefore becomes the duty of the family to keep three or four cows, a number of porkers, beside a breeding sow or two, in order to produce much

valuable manure, which, in every instance, ought to be immediately blended with fresh loam, and whatever dry refuse substance exists that can absorb the liquid matters with which it abounds. Earth, coal and peat-ashes, break up and modify recent manures of every kind, and speedily bring them into a condition of "top-dress"—one of the most valuable adjuncts to a pastoral establishment. This remark cannot be too extensively applied. The sward of the finest meadows comprises, as we have seen, a number of different species—the taller-growing, and others of dwarf habits, some of which are of annual duration. When the seeds of the latter are shed, the plants themselves perish; but, in general, the seeds are removed by mowing ere the grass is mature; therefore, if a field be mown for a series of years in succession, the dwarf, and all other annuals, that constitute the *sole* or bottom grass, must disappear, leaving the tall, perennial species only, to constitute the remaining thin sward, thus greatly diminished and impoverished. Experience confirms what Mr. Sinclair taught; and it also proves that "heavy and rich top-dressings, every season, will do much to keep up the due proportion of *sole* grasses in the sward. An occasional sowing of *poa trivialis*, *cygnosurus cristatus*, *anthoxanthum odoratum*, and *agrostis latifolia*, ought to also be made," the seeds being mixed up with the richly prepared earth alluded to. If pasture grass be mown green for soiling, manure with seeds ought so to be applied after every cut; but we object to the introduction of *cattle* during winter, as sheep only ought to be admitted after Christmas; for, when the ground is wet, the surface is liable to injury, and a great deal of rich manure is squandered injuriously on the land.

Time of closing for the hay crop.—The habits and flowering periods of the various grasses which (according to the quality of the land) constitute the best pasture ought to be studied and noted down, to fix them on the memory; for "the time when the greater number of them come into bloom is that wherein the meadow ought to be mown for hay." As the flowering season varies much, and yet as a certain period must be allowed for the early spring foliage to grow, in order to produce new roots and sap to supply the growth of the summer leaves, the skill and judgment of the hay-farmer must be exercised, to regulate his operations

so as to meet the variations which depend upon "habit," local climate, soil, and culture. March is, perhaps, the month of all others most suitable, all things considered, for closing the pastures. But the farmer must choose the exact period when the locality and state of the land shall indicate the propriety for top-dressing and seedling, bush-harrowing, and rolling; operations which are essential, not only to secure a neat and level surface, but to renew the annual grasses, enrich the land, and promote the tillering of the plants.

Convertible husbandry is adapted to the farm, and, if judiciously managed, can be rendered abundantly profitable in every respect. It consists, as the title implies, in the temporary substitution of certain grasses, combined with several other juicy herbage plants, that have no just botanical title to the name of grass, (as clover, sainfoin, plantain, cow-grass, non-such, &c., &c.,) exceedingly agreeable to cattle, and which, as a whole, constitute an artificial meadow—whence the rather unphilosophical term *artificial grasses* has been adopted.

A treatise is before me, the author to me unknown, but to which I hesitate not to refer freely, because it appears to contain information of great value, on points that may readily be brought into practice by the skilful and enterprising farmer, with a promise of the best results.

Artificial pastures offer a two-fold advantage: the herbage which they produce contains a number of the elementary constituents which abound in corn—organic and mineral; hence, it is proved by experience that the cereal crops thrive abundantly in pasture land after it has been broken up. Now, in the preparation of a temporary meadow, "the seeds usually sown on one acre, are—of red-clover, 12lbs.; white, do., 6lbs.; trefoil, 4lbs.; rib-grass, 2lbs.; Pacey's or Russell's rye-grass, 2 pecks;" to which we certainly would add cock's foot (*Dactylis glomerata*), the same. *Rye-grass* alone is insufficient. Again, the grasses thrive well after arable crops, and turnips, than which—it is said—"no better crop can be sown to prepare for the grass seeds." The best season for sowing the seeds of the true grasses, after a due preparation of the land, is doubtless the autumn; but when the

other leguminous seeds are intermixed, the plants have been proved to succeed perfectly, if sown at any period between March and September, provided the weather be rather showery.

The fertility promoted by grass, fed off by cattle and sheep, gave rise to the practice of converting arable land to pasture, in order "to recruit its strength—it was thought to require *rest*." Experience, however, has shown to demonstration, that an interchange of crops, with scientific manurings, restore the land, and, in fact, add to its prolificity.

Setting aside theory, it is proved that land which has been a few years under grass becomes improved. The convertible system is founded upon this fact: "good pasture is very profitable; so are good crops; by making one subservient to the other the farmer who adopts the convertible system is enabled to pay high rents, and still have a better profit than those who adhere to a simple rotation of annual crops." The greater the number of cattle and sheep reared and fattened, more is the attention paid, in proportion, to the means of improving the breeds.

Again, grazing, especially where the land is not peculiarly adapted to corn, has been found more profitable than simply tilling. The grazier is not equally subject to the casualties of bad weather; and with experience and prudence he can generally reckon upon some certain return. Thus, by an estimate now before us, "an acre of good grazing land, worth 40s. rent, is supposed to produce 200lbs. of meat in the year; and this, if at 6d. per pound, will bring £5 per acre. The expenses need not exceed 10s. per acre, so that here is a net yearly profit of £2 10s. per acre. Thus, by uniting the raising of corn and the grazing of cattle and sheep, the greatest profit is probably obtained; and here we find a powerful argument in favour of the convertible system of husbandry."

Mr. Stephens, in his "Book of the Farm" (both editions), enters largely upon the comparison between dairy or pastoral, and arable or "carse" farms: to that erudite work the reader's attention would be profitably directed.

Croydon.

SEWAGE IRRIGATION.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

There is now a widely extended and still enlarging movement of the citizens of England in favour of sanitary improvements. More than 100 towns have already memorialized the Board of Health for

the better drainage of their crowded localities. As better information is diffused, prejudices are removed, and a general feeling has at last arisen, that the evils of the old and defective system of house

drainage are too intolerable to be longer endured. Amid this general, this fortunate state of advancing public knowledge, let us examine, on the behalf of the farmer, the evidence of distant cultivators, who have employed, on an extensive scale, the sewer water of large and populous cities. Let us collect the most recent information; for instance, those furnished from the cities of Milan, Edinburgh, and Paris: let us test these statements carefully, and let us earnestly endeavour to act on the result of these long-experienced and successful irrigators. The enquiry, at all times important, is peculiarly interesting at the present time. I say this advisedly, for we are all too well aware that without the most steady and unremitting attention of the friends of agriculture, the interests of the cultivator of the soil will be very likely to be disregarded in the valuable sanitary improvements to which we allude. A valuable paper, by Mr. Edwin Chadwick, has recently been printed by the Commissioners of Metropolitan Sewers, for the consideration of the commissioners; and in the Appendix to the work, I find the following observations, in a recent report by Dr. James Stark, detailing the practice of the holders of the meads irrigated by the sewage of Edinburgh. He remarks that the "drainage proceeding chiefly from the old town of Edinburgh is not half so great in amount as it would be, had these old tenements a supply of water and of water closets; yet it waters abundantly, at the present moment, one hundred and seventy-two Scots acres of land, and it is proposed to bring in fifty more acres this year—the utmost the present supply could irrigate. The first thing done is to level and *thorough drain* the land, and divide it by proper ditches into small portions of about half an acre each. The land being all ready, or the last cutting being taken, the 30th or so of October, the watering for the next season's crop commences the first week of November. The water is laid on a fresh portion of the divided meadow every other or every third day, so that some portions are always watering while the others are drying. The whole sewer water is thus constantly used, none being allowed to run to waste. Those who have a small extent of meadow to water, and more than an abundant supply, continue the watering of each portion for several days at a time; then intermit for a fortnight, and lay on the water again. Those who have a larger extent of meadow to irrigate, and of course a smaller proportional supply of sewer water, only irrigate each lot or division *once every fortnight*, the watering being continued to each division during the space of one day—and night also, if practicable. That no water may ever be allowed to run waste, the small half-acre divisions are classed into fourteen or sixteen larger divisions, and the whole

supply of sewer water is laid on each of these larger portions *seriatim* once every fourteen or fifteen days; so that by the time the whole divisions have been once watered, it is time to bring back the water to the first watered lot. The more water each portion receives, the larger is the crop raised on it, and the higher the price got for that crop in the market, so that while the lots which are watered only once in the fortnight in general bring only from £23 to £30 per acre annually; those which receive a larger supply let for from £28 to £50 each per acre. The above watering is continued uninterruptedly at the same intervals of time to each portion *during the whole year*; so that it will be apparent that though the whole meadow is not under water at the same moment, but only its 14th or 16th part, still the whole sewer water is used for watering one or other portion of the divided meadow. This water is sometimes kept in tanks or ponds for the purposes of irrigation, as it is found to deposit a considerable proportion of solid matters which are worth from 2s. 6d. to 5s. per ton, as a manure for gardens. But such tanks and ponds are a constant source of sickness, and ought never to be allowed in any circumstances. During heavy falls of rain, when thick mud is carried down with the sewer water, the whole is allowed to flow direct into the sea—experience having shown that such water cannot be used for the purposes of irrigation, excepting during the winter season, when there is no growth. If by chance used during summer, it destroys the next cutting, rendering it so sandy and tainted that the cattle refuse to eat it. The best meadows yield from four to five cuttings annually, the poorest three cuttings only. If allowed to stand too long on the ground, the crop rots at the root—its excessive weight causing it to fall over and heat—just like a laid white crop. In 1845, on Lot 1 of the Craigentenny Meadows, only *day* waterings were given, and three cuttings obtained; in 1846 the waterings were continued day and night, and four cuttings were obtained. During frost the waterings are discontinued. The first cutting is usually taken the last week in March." If we compare the report thus clearly given by Dr. Stark, of the irrigation of the Edinburgh meads, and compare it with that lately made by Count Arrivabene to Mr. Chadwick, of the water meadows around the city of Milan, irrigated by the sewage of the Italian City, we shall be equally impressed with their prodigious fertility and their high annual rent (*Chadwick's Statement*, p. 47). The Count thus concludes his interesting detail—"Some of the meadows irrigated by the sewage water of Milan yield a net rent of £21 per *tornatura* (equal to about 2½ acres), besides a land tax of 61 francs 10 cents., &c., &c. These meadows, in the warm

climate of Italy, are mowed in November, January, March, and April, for stable feeding; in June, July, and August, they yield three crops of hay for the winter, and in September they furnish an abundant pasture for the cattle till the beginning of the winter irrigation." If we take the result of the experience of the citizens of Paris, as to the value of the town sewage, although employed in a different way, some remarkable facts deserve our very serious attention, as corroborative of the practice of the citizens of Edinburgh and Milan. The Parisians employ the contents of their cesspools, not in its fluid, but in a solid state—the mode of thus fertilizing the land is different, but the result is equally instructive. In a valuable paper lately printed for the consideration of the Metropolitan Sanitary Commission, page 12, it is remarked by Mr. T. W. Rammell, that "the total produce of the cesspools of Paris amounts at present to about 650 cubic metres daily; of this quantity, about one-fifth (that portion contained in the moveable cesspools) is sent by canal to a dépôt, constructed some years since by the Commune de Paris, in the Forest of Bondy, 8 English miles distant from Paris; the remainder is conveyed to the basins of Montfaucon, which, until lately, for many centuries past, have been the only receptacles for all the fecal refuse of Paris. M. Jules Garnier, in his *Visite à Montfaucon*, says—"For more than nine centuries Montfaucon has been devoted to the same purposes. It was there that the inhabitants of Paris were in the habit of depositing their filth before the walls of the capital extended beyond the present centre quarters. Every one knows that the distance between old Paris and Montfaucon was more than half a league.' At Montfaucon the solid portion of this matter is manufactured into a dry manure, called, from its peculiar appearance, 'Poudrette.' The basins belong to the Commune de Paris, who have been in the habit of letting on lease, for periods of nine years, the basins and their contents, for the purposes of this manufacture, by sealed proposals to the highest bidder. The last sale took place in 1843, and was effected for £21,000 sterling per annum. The produce of this sale has increased enormously of late, as the following figures will prove:—

In	Francs.	Sterling per Annum.
1808 the sale was effected for	97,000, or about	£3,880
1817 " "	75,000	" 3,000
1834 " "	165,000	" 7,000
1843 " "	525,000	" 21,000

The proceeds of the sale are, of course, appropriated by the Commune."

"In order to give an idea of the fertilizing powers of the poudrette, I extract the following comparative

numbers from a table of equivalents of manures, drawn up by M. Maxime Paulet, and published in his 'Théorie et Pratique des Engrais.' In this table the value of each manure is determined by the proportion of azote it contains. Taking for type and unity good farm-yard dung, which contains on the average 4 per 1000 of azote, and assuming that 10,000 kilogrammes (22,046lbs. English) of this manure, or 40 kilogrammes of azote, are necessary to manure thoroughly one hectare (2½ acres nearly) of land, the quantities of poudrette, and of some other animal manures required to produce an equal effect, would be as stated below:—

	Kilogrammes.
Good farm-yard dung (type) the quantity usually spread upon one hectare of land	10,000
Human urine, not having undergone fermentation	5,600
Poudrette of Montfaucon	2,550
Mixed human excrements (this quantity I have calculated from data given in the same work)	1,333
Liquid blood of the abattoirs	1,333
Bones	650
Average of guano (two specimens are given)	512
Urine of the public urinals in fermentation and incompletely dried	233

"M. Paulet estimates the loss of the ammonial products contained in the fecal matters when they are withdrawn from the cesspools, by the time they have been ultimately reduced into poudrette, at from 80 to 90 per cent.

"I have not been able to meet with an analysis of the matters found in the fixed and moveable cesspools of Paris, but in the 'Cours d'Agriculture,' of M. le Comte de Gasparin, I find an analysis by MM. Payen and Boussingault, of some matter taken from the cesspools of Lille, and in the state in which it is ordinarily used in the suburbs of that city as manure. This matter was found to contain on the average 0.205 per cent. of azote, and thus by the rule observed in drawing up the above table 19,512 kilogrammes of it would be necessary to produce the same effect upon one hectare of land as the other manures there mentioned. The wide difference between this quantity and that (1,333 kilogrammes) stated for the mixed human excrements in their undiluted state, would lead to the conclusion that a very large proportion of water was present in the matter sent from Lille, unless we are to attribute a portion of the difference to the accidental circumstance of the bad quality of this matter. It appears that this is very variable, accordingly as it may have been produced by persons well or ill-nourished. 'Upon this subject,' M. Paulet says, 'the example of an agriculturist in the neighbourhood of Paris is cited, who bought the con-

tents of the cesspools of one of the good "restaurants" of the "Palais Royal;" finding that he had thus made a profitable speculation, he purchased the matter of the cesspools of several barracks. This bargain, however, caused him to sustain a severe loss, for the results obtained from this last matter came very short of those given by the first.

"Poudrette weighs 70 kilogrammes the hectolitre (154lbs. per 22 gallons), and the quantity usually spread upon one hectare of land (2½ acres nearly) is 1750 kilogrammes, being at the rate of about 1540lbs. per acre English measure. It is applied to the land by sowing it in the manner that corn is sown."

If we ask ourselves during the perusal of these statements what the citizens of our English towns have been doing with the valuable contents of their sewers, what reply can be given? Edinburgh, Milan, and Paris have been equally

provident; their citizens have wisely regarded the welfare, the enriching of the land by which they are sustained. The Londoners, on the other hand, have committed everything to the river; and all other English towns have imitated their example. Let us, then, in arranging for the new and better modes of supplying the inhabitants of populous places with sewers and with water, no longer neglect these things. The Sanitary Commissioners and the Commissioners of the Metropolitan Sewers have indeed a wide field of usefulness before them. In following then, the wide paths which are thus opening before them, let them remember these things—let them not forget that, though the citizen has the first claim to their attention, the second and hardly a less important demand upon their zeal and energy is presented by the agriculture of the districts by which those citizens are so materially supported.

ON AGRICULTURAL PHYSICS.

BY CHARLES JOHNSON,

Professor of Botany at Guy's Hospital; Lecturer at the Agricultural and Scientific School, Kennington, &c., &c.

No. I.

Among the various arts and sciences, the discovery and practice of which have successively aided the mental improvement and civilization of the human race, the most important are those that contribute to the supply of food and clothing; and yet there are not any whose origin is shrouded in greater obscurity, or that is so vainly sought among the elementary records of the past. Agriculture, especially, is one that, among all of the earlier nations in which it was practised, was held traditionally to be of divine or mysterious introduction; and, indeed, it appears at first sight that the pursuit of it would be unnecessary to an incipient state of society, and to be one unprovided for in the animal constitution of man.

It has been often observed by those who have been led into consideration of our physical history, that while the several species of other animal types are confined within the limits of particular climates, and so organized by nature as to be capable of subsisting only on certain articles of food, our race is distributed throughout the world, and sustained by every kind of aliment. Here seems the ratification of the divine command and gift to Noah and his family after the deluge, "Be fruitful and multiply, and replenish the earth"—"Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things." The com-

mand would have been vain without the gift upon which its fulfilment is dependent. Had the constitution of man been such as to have rendered him incapable of varying his food in accordance with the nature and produce of different climates; had his natural instincts and their correspondent organs compelled him imperatively to the use of either animal or vegetable substance exclusively, a large proportion of our globe must have been forever shrouded from his view, and his now ever wandering and enterprising race have been limited to such spots as were capable of yielding to his confined necessities. As it is, wherever organic being can exist, there man may have dominion. He may be indebted for much of this advantage to the grade he occupies on the scale of creation. That he is so, can indeed scarcely be questioned; he has mind, he has that within him which involves the capability of eluding or of modifying many of those natural conditions and influences that conspire to restrict the migration and distribution of the inferior animals; he can ride at will across the trackless ocean, bridge the wide and rapid river, and turn the course of the torrent; he can guard himself in a great measure against the vicissitudes of heat and cold, moisture and drought; he can store up provisions for the longest journeys and for indefinite periods. Yet with all these advantages, his migratory powers

would have been very confined had not his grosser faculties been adapted to the same end; and most of all his appetite, to which, on a broad scale, not anything comes amiss. He is neither exclusively carnivorous, fructivorous, granivorous, or herbivorous, as are most of his fellow-occupants. No; man is truly an omnivorous animal. The lion devours the antelope and the buffalo, but disdains the locust and the caterpillar; the bull and the sheep crop the green herbage of the meadows, and the elephant the tender leaf-bearing branches of the forest; one kind of animal subsists upon the fruit or seeds of a plant or tree, another devours its foliage, a third lives upon its bark, and a fourth undermines its roots. Man alone has no peculiar bias of this description. Where one kind of food is scarce, or wanting altogether, he resorts to another; indeed, the whole range of both animal and vegetable being lies within the compass of his gorge; beast, bird, reptile, and fish, the insect and the worm, the fruit and seed of the vegetable, the leaves, the wood, the bark, the root, are all in their turn the ministrants to his wants; the experience of their poisonous quality is, at least, the only bar to their universal appropriation for feeding his hunger or pampering his appetite; nay, even the very earth we tread upon is not wholly exempt from the munching propensities of our all-devouring race.

The physical conditions connected with this attribute of man are many and important. His constitution, and, in accordance with it, his digestive powers, are adapted to the climate in which he is bred. Born under the fierce influence of a vertical sun, where his blood traverses more rapidly through his veins, and his passions require restraint rather than excitement, to prevent them from overpowering the springs of life, his natural diet is almost exclusively vegetable. The propensity to the use of animal food increases in proportion as he occupies a less and less glowing climate; and in the colder regions of the earth it entirely supersedes the former, not only as the staple but as the absolute and exclusive support of human existence. The various conditions of society, even as regards moral development, are much dependent, in their origin, on the influence of climate upon this plasticity of the appetite. Here, nature produces spontaneously all that is required to maintain the life of man; the most luscious and nutritive fruits spring from the uncultured soil, and require only to be gathered to satisfy his craving. There, she is less profuse, or niggard in the extreme, and calls forth the dormant energies of her children to aid themselves or perish. Independent of the extremes of tropical heat or arctic cold, the face of the earth itself, however diversified and liable to vicissitude,

is everywhere in union with one or another of the numerous phases of human character and human means; the thick forest, the open pasturage, the barren moor, and even the scorching desert, are alike rendered subservient to the economy of the omnivorous, when necessity compels their occupation. To no other animal species but our own is this universal choice allowed, no other possessing the natural endowments required to its exercise.

The necessity of a daily supply of food, and the numerous obstacles and casualties which concurred in rendering the continuance of that supply precarious, seem to have been the prime instigations to man, in an early state of society, to bestow his energies on the cultivation of the ground, and likewise to collect around him and tame to his subservience certain animals that in their wild state would frequently elude his utmost vigilance and efforts to obtain the required meal. Such, at least, would appear to be the simplest origin of agricultural and pastoral pursuits; pursuits that have, in our own age, been carried by civilized nations to a degree of perfection and complication that has placed the first especially upon an equality with the noblest and most comprehensive of the practical sciences. Throughout Europe, and among its people now disseminated over a large portion of the world, the two professions have been so long associated in their practice, and become so intimately connected, through the application of their relative produce, with every department of human ingenuity, convenience, and policy, that their separate or individual effect on the human character is no longer appreciated; but the states of society in which we now find mankind parcelled out, in different countries, owe many of their peculiar characteristics to the influence of pastoral or agricultural habits upon their progenitors in times long past. The origin of either pursuit must have depended in a great measure upon the nature of the soil and climate, as well as upon the temperament and previous propensities of the people among whom they were commenced. A habit of wandering from place to place would necessarily communicate a distaste for that settlement in any particular spot which the cultivation of the earth requires; hence it is, that among tribes to whom the use of animal food chiefly has become familiar, their descendants retain for ages the customs induced among their early ancestors, on their first transition from the precarious life of the hunter to that of the shepherd or herdsman. Such are to the present day many of the tribes inhabiting the central parts of Asia, especially in the vicinity of the Caspian Sea and towards the frontiers of China, until recently confounded under the general name of Tatars or Tartars, and a large proportion of the Arab race.

Such, likewise, were the ancient Scythians, as well as many of the innumerable hordes of barbarians which overran Europe on the decline of the Roman Empire; people having no fixed place of abode, but wandering with their flocks and herds according to the convenience of pasturage. This appears, indeed, to have been the primitive condition of nations long since merged into the great mass of European civilization. The term *Nomades*, by which the ancient Greeks distinguished the Scythian and Arab races, is derived from a word denoting the act of leading to pasture; and the wealth of these people is still estimated, like that of Abraham and Lot, by the number of camels and other cattle belonging to them. The immense extent of pasturage required to feed them, and hence the necessity of frequent migration, may be readily understood from the statement of Professor Pallas, that some of the richest among the Kirghisian Tatars possess as many as 10,000 horses, 300 camels, 4,000 head of cattle, 20,000 sheep, and more than 2,000 goats—or 36,300 grazing animals.

The pastoral life, however, notwithstanding all the encomiums that have been lavished upon it by poets ancient and modern, is but the first step be-

tween the savage state and civilization. The utmost grade of refinement that it has ever realized has always been far behind that of the agricultural state of society; and though for a time, by the mere exertion of physical force, the hunter and the shepherd have been enabled to overpower nations of the latter cast, they have always, sooner or later, conformed to the manners of the conquered, adopted their arts, and exchanged their roving habits for a settled and more permanent abode. Witness the Assyrian hordes, which in ancient Egypt levelled the power of the Pharaohs; the Huns, and succeeding invaders of the Roman Empire; the Tatars, in their conquest of China—all of whom eventually lost their own nationality, and became more or less amalgamated with the people they had subdued. No nation has ever risen to more than a mere temporary power and consequence, unless where the cultivation of the soil has been held as the basis, and cherished as the accompaniment of its prosperity; and wherever that engine of aggrandizement has been established, learning, arts, manufactures, commerce, and all the rewards of civilization, have followed in its train.

CHEMISTRY APPLIED TO AGRICULTURE.

Lectures on Agricultural Chemistry. By J. F. W. Johnston. 1st edition.

Do. Do. 2nd edition.

Elements of Agricultural Chemistry and Geology, by the same author. 5th edition.

Use of Lime in Agriculture, by the same author.

Catechism of Agricultural Chemistry, by the same author.

Instructions for the Analysis of Soils, by the same author.

Contributions to Scientific Agriculture, by the same author.

Liebig's Reply to Mulder, tested by Morality and Science. Edited by J. F. W. Johnston.

Proceedings of the Agricultural Chemistry Association.

No author could have wished for more favourable circumstances under which to issue his publications than Professor Johnston the author of the above publications had at the commencement of his career. We first hear of him as a public man by his appointment of Reader in Chemistry to the University at Durham: he there delivered his Lectures on Agricultural Chemistry, the first edition of which appeared in 1841. From the time of Sir Humphrey Davy, 30 years before, no

work on the subject had appeared in the English language. During this time chemistry had made gigantic strides; inorganic analysis had made such progress as to leave little to be desired: ultimate organic analysis, by the genius and skill of Liebig, had also arrived at a degree of perfection Davy could not even have dreamt of; whilst, by the arrangement of Will and Farrentrap, ammonia can now be estimated with an accuracy never previously attained. The spread of education amongst agriculturists had also prepared them for understanding the suggestions of the chemist, whilst the accumulation of capital enabled them to adopt such expensive improvements as would have been impossible 30 years before. Under these favourable circumstances, then, did Johnston's first edition make its appearance; and as if this was not sufficient, in the year 1843 he was appointed chemist to the Agricultural Chemistry Association, with a salary of £400 to £500 per annum. This, by placing him above all distraction of business, and in communication with the best educated farmers in the world, as well as giving him an honourable position in the scientific world, furnished Professor Johnston with such an opportunity of advancing scientific and practical farming as no individual had ever previously enjoyed. It is, therefore, our intention briefly to

examine how far he has fulfilled the reasonable expectations which had then been formed of him.

Upon examining the first edition of the lectures, we find that the great majority of the analyses quoted are by Sprengel. This is unfortunate, as the researches of this chemist are now, from their known inaccuracy, consigned to the tomb of the Capulets. Of these analyses (principally from Sprengel) the work contains about 230, besides which there are about 17 original analyses, "MADE IN MY LABORATORY," consisting of—

- 7 Analyses of Durham limestones.
- 1 Examination of the quantity of lime in a pasture field near Durham.
- 2 Of guano.
- 6 Examination of ash in wheat.
- 1 Do. of Indian corn.

So that whilst we give our author every credit for skill in compiling and abridging his own works and those of others, we see in the first edition of his lectures but slight evidence of original investigation, which is the first requisite of a scientific man.

Nor is the evidence of the second edition much more favourable to Professor Johnston in this respect. When it appeared, he had been four years connected with the Agricultural Chemistry Association, from the commencement of which the assistance of a Mr. Fromberg, from the University of Utrecht, had been secured. We do not mean to insinuate that the Professor, in securing this assistance of a German chemist, followed the too common plan of the present day, of reaping the advantage of superior skill and attainments for a salary equivalent to that paid to a common workman; on the contrary the Professor invariably attaches Mr. Fromberg's name to all analyses made by this gentleman. In the second edition there are 270 analyses derived from previous publications,—

- 12 By "my assistant Mr. Fromberg,"
- 8 Do. Mr. Thomas,"
- 10 by "my friend and pupil Mr. Norton,"
- 70 described as done "in my laboratory," (that is in the laboratory and at the expense of the Agricultural Chemical Association)
- 14 by "my friend and pupil Mr. Jones,"
- 8 by "myself" !!

As the Professor is generally so careful to assign to every one his due share of the work, are we to conclude the above "8 by myself" contain all the original matter of the second edition? We hope not, for they are of the simplest description, and 6 of them are the analyses of the Durham limestones, which had previously appeared in the first edition. The analyses by Mr. Norton had also previously appeared in the Transactions of the Highland

Agricultural Society, and the majority, if not all, of the remainder, in the Transactions of the Agricultural Chemistry Association. This does not place our author in a very elevated position as showing skill in original research, and also places his works immeasurably below those of Liebig in this respect.

The mention of the name of Liebig renders this the best opportunity for introducing a notice of one of the works whose title is placed at the head of this article, namely, "*Liebig's Reply to Mulder, tested by Morality and Science. By Mulder, edited by J. F. W. Johnston.*" There has been a dispute going on for some years between Johnston and Mulder on the one hand, and Liebig on the other, respecting some abstruse questions in chemistry. In the address to the Royal Agricultural Society, Professor Johnston has, somewhat ridiculously, described Liebig as "a sanguine young person." This is a harmless effusion of feeling, and sinks into insignificance compared with the work above alluded to, through which the *attempt* to undervalue the researches of this giant in chemistry shines in every page, and has afforded us no little amusement in perusal. Addressing Liebig, Johnston and Mulder say (page 5)—"I seek only your happiness, your peace of mind, your glory; but lay your hand on your heart, and ask yourself, 'Have I done right in always using so harshly every one who does not adhere to my ideas, and who does not follow my method of treating science?' Your heart will answer, 'Surely not!' Believe me once more, your life is full of troubles, your old age will be full of vexations, and your death-bed full of remorse. These are without reserve the opinions of a man who never showed you any other than marks of respect, who will never write against you unless you force him to do so; of a man who is personally unknown to you, but who seeks in man, first probity, and for science only in the second place. But two words more before I conclude: perhaps this is the last time in my life that I write to you, for I am not a coward. If this be the case then may you live in happiness, enjoy whatever is good and desirable in life, and if you should now and then remember the iatrochemist, believe me that nothing from without can trouble him." We imagine the last sentence a useless bravado, because it must be evident that both the author and editor of the work must have been *very much troubled* before they allowed such expressions to escape them. "Liebig," they go on to say "holds the office of executioner, and is never fatigued with whipping and branding. 'Truth!' he exclaims, and goes on whipping—'Truth!' and down comes the rod—'Truth!' he repeats once more, while he is beating his branding iron red-hot—'Truth!' finally, and he presses it on the fore-

head of the chemists of the day, and rejoices in the ascending vapour." It is to be regretted that Professor Johnston should have risked a very fair fame by attaching his name to such a publication. One point it elucidates, namely, the antagonistic feeling evinced by Johnston and Mulder to Liebig, which is of importance to us, as it will explain some of the opinions advocated by the former. We may remark, *en passant*, that this plan of under-valuing the labours of others seems a slight weakness of the Professor. He has more than once expressed amusement at farmers' clubs, and has characterized the opinions of some who disputed his conclusions in the Philosophical Magazine, as emanating from *young chemists*. This is not to be wondered at, when he considers Liebig "*a sanguine young person*." There are also several little slips, showing the Professor's own opinion respecting the Agricultural Chemistry Association (*that is of MYSELF*) scattered through the reports drawn up by the Professor; one extract is enough. "A society for the promotion of scientific agriculture was formed immediately after the delivery of the lectures at the Hague by Professor Johnston, and Professor Johnston had the honour of naming the first professor, and of designating his duties. No more convincing proof could be afforded of the high appreciation, &c., &c." To us the most convincing proof of the high appreciation of the association under Professor Johnston, is that at the age of 5 years it expired a natural death. Dr. Anderson, *a young chemist*, previously little known, is appointed to work in connection with the H. A. S., and Professor Johnston is, we hear, planning a trip to America.

Dr. Chalmers in his discourse on "The modesty of true science," makes the following remarks on Sir Isaac Newton:—"There are perhaps no two sets of human beings who comprehend less the movements, and enter less into the cares and concerns of each other, than the wide and busy public on the one hand, and, on the other, those men of close and studious retirement, whom the world never hear of, save when from their thoughtful solitude there issues forth some splendid discovery to set the world in a gaze of admiration. Now the point that I want to impress upon you is, that the same public who are so dazzled and overborne by the lustre of all this superiority are utterly in the dark as to what that is which confers its chief merit on the philosophy of Newton. They see the result of his labours, but they know not how to appreciate the difficulty or the extent of them. Let it be understood then that they are the positive discoveries of Newton, which in the eye of a superficial public confer upon him all his reputation." He discovered the attraction of gravity, the cause of the tides, and the composition of light. "These

form his actual and visible achievements. But while he gets all this credit, and all this admiration for these articles of science which he has added to the creed of philosophers, he deserves as much credit for *those articles which he has kept out of this creed*, as for those which he has introduced into it. He would not admit the astronomical theories of those who went before him, *because they had no proof*. He would not give in to their notions about the planets wheeling their rounds in whirlpools of ether, because he did not see this ether—*he had no proof of its existence*. He would not submit his judgment to the reigning systems of the day, because though they had authority to recommend them, they had *no proof*. In fact the strength of his philosophy lay as much in refusing admittance to that which wanted evidence, as in giving a place and an occupancy to that which possessed it. The disciples of this school are utter strangers to that haughty confidence with which some philosophers of the day sport the plausibilities of unauthorized speculation, and by which, unmindful of the limit which separates the region of sense from the region of conjecture, they make their blind and impetuous inroads into a province which does not belong to them. Keep the true Newtonian disciple on *the firm ground of experiment*, and none more bold and more decisive in the announcements of all that he has evidence for; but off this ground, none more humble or more cautious of anything like positive announcements. He gives us positive opinions only when he has indisputable truth; but when he has no such proof, then he has no such opinion. What even Newton himself had not the confidence to do, other philosophers have done after him; and they have winged their audacious way into forbidden regions—they have crossed that circle by which the field of previous observation is closed, and there have they dilated and dogmatized with all the pride of a most intolerant assurance."

Such then is a picture of a true philosopher, or student of nature, in the words of one of the most powerful writers of the day; and it is for the purpose of pointing out how widely the authors of the works on agricultural chemistry (whose titles are at the head of this article) differ from this picture, that we have introduced such a lengthy quotation. As they are not, however, the only writers on such subjects who have crossed "that circle which bounds the field of previous observation, and there dogmatized with all the pride of an intolerant assurance," and as the interests of true science seem to demand that they should be reminded of the difference between theories founded on experiment, and theories founded on other theories, we make no apology for the quotation. Nor can a more severe reproof be administered than to point to

Sir Isaac Newton as an example they may safely imitate, and a leader they need not be ashamed to follow.

The science of chemistry has now advanced so far as to tell us that plants are composed of—

- 1st, Oxygen and hydrogen,
- 2nd, Carbon,
- 3rd, Nitrogen, and
- 4th, Inorganic matter or ashes.

With respect to (1) the oxygen and hydrogen, it is generally admitted that plants principally derive them from water.

With respect to (2) the carbon, it was at first supposed that as plants would grow fastest in black vegetable mould, they derived their carbon from this mould, or humus as it was called. This opinion was never questioned until it was found that plants had the extraordinary power of decomposing during the day the carbonic acid of the atmosphere. This discovery was hailed as one of the most beautiful arrangements of an all-wise Creator. The carbonic acid thrown off by animals, and the results of the combustion of all our fires and furnaces which threatened to render our earth uninhabitable, was thus seen to be a necessary part of the food of the plants we cultivate. It was at one time conjectured that the increase of carbonic acid in the atmosphere, from the above causes, was the reason of the shortness of our lives as compared with those of the antediluvians. Further research has, however, proved that no change in the amount of carbonic acid present has taken place within the last 100 years, and it is probable that at the time man appeared on the earth the proportion of carbonic acid, as well as the other constituents of the atmosphere, had become constant.

We believe that Liebig was the first to pay particular attention to the quantity of carbonic acid in the atmosphere, and to demonstrate by calculation that there is actually as much carbon (in this form) in the air as will supply the wants of all the vegetation on the globe. From this fact, the step to the *assertion*, that the carbonic acid of the atmosphere actually *does* supply all vegetation with carbon, is easy and short. In the early editions of Liebig's works this theory, or something very near, is started, and constitutes one of the characteristics of his school of chemistry, of which our friend Professor Johnston was a disciple at the time of the appearance of his first edition. However much any one might be disposed to question the paramount importance of this atmospheric carbonic acid as asserted by Liebig, at this stage of the investigation, carbonic acid, whether derived from the atmosphere or from the soil is considered "to be the form of combination in which carbon is re-

ceived into the circulation of plants." (Johnston's Lectures, 1st edition.)

Between the appearance of the first edition and the second of these lectures, Johnston and Mulder, whose feelings to Liebig have already been shown, become connected; this leads to the abandonment of the above simple theory, and the adoption of Mulder's views on the subject.

In the advertisement to the second edition Professor Johnston congratulates himself that though "he has made numerous additions, and has found occasion to introduce not a few alterations, yet he has not found it necessary to alter a single important theoretical opinion." Let us see how this agrees with facts.

We have already pointed out how important the carbonic acid of the atmosphere is considered, and shown to be in the first edition. Other organic substances are only incidentally alluded to, and their use to vegetation is conjectured from an experiment made by Sir H. Davy; who found that "when plants of mint were introduced into weak solutions of sugar, gum, jelly, &c., they grew vigorously in all of them." The conclusion from this, and one or two similar experiments, is that "other organic substances besides carbonic acid may act as food for plants." In this form the matter is left in the first edition. In the second the forms in which "these other organic substances" minister to the growth of plants, are described under the following names, which are never alluded to in the first, namely—

- (a) Humic acid from sugar.
- (b) ——— from a pasture field.
- (c) ——— from Dutch peat.
- (d) ——— from soot.
- from rotten wood.
- from arable soil.
- (e) ——— from another do.
- (f) ——— from Scotch peat.
- (a) Ulmic acid from sugar.
- (b) ——— from Friesland turf.
- (c) ——— from Scotch peat.

Geic acid.

Crenic acid.

Apocrenic acid.

Mudesous acid.

Humin.

Ulmim.

—(2nd ed. Agric. Chem. 74 pp.)

The previous edition then left the task of supplying the plants with carbon to carbonic acid; we are assured that no change is made in any of the important theories of the first edition, and here in the second edition we have 17 other sources of this important part of vegetation.

Mulder says "*simplicity of food is a condition of the existence of plants.*" Surely this is almost a refutation to the above list of *duties*, on which he Johnston, and Fromberg, suppose them to feed. One of the arguments by which Fromberg attempts to establish this view of the case, is, we doubt not, original. "Every natural philosopher," he says, "must know that a molecule whose axis is attracted in one direction only, as is the case in carbonic acid, is under the dominion of a far more intense action than if acted upon in two or three directions, as is the case of humate of ammonia. For considering an atom to be endowed throughout with a fixed quantity of attractive power, which is brought into action upon meeting other atoms, the part of that power used to attract in one direction must be subtracted from that used in another direction, and so lead to weaken it, and to modify the coherence of the whole compound." This, from my assistant Mr. Fromberg! first assistant in the laboratory of the Agric. Chem. Association!! Mulder's friend and pupil, as he describes himself!! As we can but spoil it by comment, we leave it as it is, unexampled in modern chemical works for absurd obscurity. "He has surely, in the above sentence, crossed the circle of observation, and dogmatized with no little assurance."

But is it of any consequence to the farmer whether the plant derives its food from carbonic acid, or from these other 17 sources? We reply, that correct information must always be important, and it is difficult or impossible to decide the importance of any question until it is answered—its apparent unimportance may be entirely owing to our ignorance. So far from simplifying the difficulties under which we previously laboured in explaining the complicated processes of vegetation, this new suggestion of Johnston and Mulder renders the whole question more obscure. For instance it was known

- 1st, That the air contained carbonic acid.
- 2nd, That plants could decompose this substance, and purify the air, by appropriating the carbon to themselves, and returning the oxygen to the atmosphere.
- 3rd, That the soil also contained carbonic acid: it was *supposed* that under certain circumstances part of this acid might be decomposed like that contained in the air, and with similar results.
- 4th, It was considered a settled point, that whether derived from the air or from the soil, carbonic acid was the only form in which carbon was useful to vegetation. The anomaly of one form of carbon being useful in the air, and another in the soil, had not been thought of.

Respecting these 17 substances which have thus come to be of such unexpected importance, we will inquire—

- 1st, In what proportions do they exist in the soil?
- 2nd, Can the roots of the plants absorb them?
- 3rd, Do they minister directly to the growth of vegetation? or
- 4th, Do they not undergo decomposition into carbonic acid, before absorption or conversion into the substance of plants?

In answer to the first of these questions, Liebig says that the soil only contains one part in 100,000. This, though admitted, is attempted to be answered by saying that these substances are constantly forming.

In answer to the second, Liebig also says, that the roots of plants cannot absorb them, because they are so slightly soluble in water; and if the carbon a crop of wheat contains is admitted in this form, *suppose all the water that falls* in rain is saturated with salts of humic and other acids of the group, and *the whole passed through the plant*, we could not by this means obtain one-sixth of the carbon found in a crop of wheat.

In answer to the third question, Liebig gives (1) the following formula, as showing how easily the changes in organic substances can be accounted for, if we take carbonic acid as the basis. We also add (2) the explanation which Mulder and Johnston give of the same changes, when humic acid is taken as the origin.

(1) From *Liebig's Agric. Chem.*, p. 38.

36	Carbonic acid with 22 hydrogen	=	woody fibre.
36	Do. „ 36	do.	= sugar.
36	Do. „ 30	do.	= starch.
36	Do. „ 16	do.	= tannic acid.
36	Do. „ 18	do.	= tartaric acid.
36	Do. „ 18	do.	= malic acid.
30	Do. „ 24	do.	= oil of turpentine.

(2) *Johnston's Agric. Chemistry*, p. 237.

"Suppose humic acid, *e* (40 c. 17 H. 17 O.), to be taken up by the roots, and to combine with water, and we have—

	c.	H.	O.
3 Humic acid	120	51	51
with 49 water	—	49	49
<hr/>			
making 10 dextrine	120	100	100
or with 54 water	—	54	54
<hr/>			
making 5 cellulose	120	154	154

"Again, suppose a portion of one of the ulmic acids to be taken up, then because of the excess of hydrogen contained in these acids, true wood may be formed without the decomposition of water. Thus, if there be taken up—

	c.	h.	o.
1 Ulnic acid, <i>b</i>	10	18	16
$\frac{3}{2}$ humic acid, <i>c</i>	24	9	9
and 20 water	—	20	20
we have the sum	64	47	45

which is the composition of the soft wood of the laburnum = 64 c. 47 h. 45 o." We hardly know how to comment upon the last, and after all perhaps the best we can say is to request the reader to compare it with the extract from Liebig. If it be true that simplicity of food be necessary to the existence of plants, surely simplicity must be a recommendation to any theory which explains the mode of their growth. If this therefore be a test, we must give the unqualified palm of victory to Liebig.

In answer to the fourth question, we are compelled to leave it doubtful. When plants are grown in a solution of humus, the plant is never coloured in the slightest degree; so that the humus must either be decomposed *before* entering the plant, or immediately after.

So that against the probability of the organic matters of the soil being useful to vegetation in the form of these 17 substances, we have—

1st, That of fertile soils they only form the 100,000th part.

2nd, That they are insoluble.

3rd, That the formation of all the parts of plants can be much more easily explained by assuming

(To be continued.)

carbonic acid as the starting point, than by assuming everything to be formed out of humic acid *a*, humic acid *b*, humic acid *c*, or any other of the 17 substances.

4th, Not one of the series exists in plants.

And 5th, Those soils, as peats, bogs, and such like, which contain them in greatest abundance, are the worst description which can fall to the farmer's lot.

More has been said by both parties, and the result in our own mind has been a stronger feeling than ever in favour of Liebig's theory of vegetation—if for no other reason, at least for its great simplicity and beauty, and as being qualified to meet every difficulty of the case. We agree with Mulder, that the dispute has brought no new facts to light. But we go further, and take this opportunity of congratulating both himself and Johnston on the obscurity in which they have managed to place this important part of agricultural chemistry. In our next we will inquire into Professor Johnston's opinion of *the origin of nitrogen in plants*. In the mean time congratulating him on the important results which must follow to English agriculture, when farmers get to know that OLD HATS and OLD SHOES dissolved in acid, are by him considered to form a valuable manure. At a time when farmers are preparing for the turnip crop, we hasten to give this suggestion publicity, and hope it will be duly appreciated and valued.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday, the 27th of March: Present—Mr. Raymond Barker, Vice-President, in the Chair; Mr. Blanshard; Mr. Bosanquet; Mr. French Burke; Colonel Challoner; Mr. F. Cherry; Mr. Brandreth Gibbs; Mr. Hinckes; Mr. Fisher Hobbs; Mr. Kinder; Mr. C. E. Overman; Professor Sewell; Professor Simonds; Mr. T. Turner; Dr. Walker; and Mr. W. B. Webster.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, transmitted to the Council the following decisions of the Judges of Essays:—

I. The Society's Prize of £50, for the best Report on the Farming of South Wales, awarded to CLARE SEWELL READ, of Kilpaison, near Pembroke.

II. The Society's Prize of £20, for the best Report on the Breeds of Sheep best suited to different localities respectively, with reference to soil, climate, elevation, and mode of farming, awarded to THOMAS ROWLANDSON, of Greek-street, Liverpool.

III. The Society's Prize of £15, for the best Essay

on the top-dressing of soil with mineral substances, awarded to THOMAS ROWLANDSON, of Greek-street, Liverpool.

Colonel Challoner expressed the satisfaction he felt at witnessing the admirable working of the Society's system of prizes for essays on the different topics of practical agriculture, not only in the sterling prize essays produced by such system, but in the attendant result of secondary essays of great merit, and the circumstance of that general attention and consideration those topics received by the emulation and excitement of competition.—Mr. French Burke hoped that some means would be adopted to confer a mark of the Society's approbation on those secondary essays to which Colonel Challoner had alluded, as they often contained details of great interest on particular points of inquiry.

The Belgian Secretary of Legation presented a copy of the report of proceedings at the great agricultural meeting held at Brussels last year; and Mr. Wyatt Edgell, papers connected with the management of mares after having foaled: which were received with thanks.

The Council then adjourned to the 3rd of April.

A MONTHLY COUNCIL was held at the Society's House in Hanover-square, on Tuesday, the 3rd of April. The following Members of Council and Governors were present:—The Earl of Chichester, President, in the Chair; Earl of Ducie; Hon. Capt. Dudley Pelham, R.N.; Sir Thomas Dyke Acland, Bart., M.P.; Sir John V. B. Johnstone, Bart., M.P.; Sir Robert Price, Bart., M.P.; Mr. Raymond Barker; Mr. Barnett; Mr. Bennett; Mr. Blanshard; Mr. Branston, M.P.; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. F. C. Cherry; Mr. Childers, M.P.; Mr. Garrett; Mr. Brandreth Gibbs; Mr. Hamond; Mr. Fisher Hobbs; Mr. H. Hoskyns; Mr. Hudson (Castleacre); Mr. Kinder; Mr. Lawes; Mr. Milward; Mr. Pusey, M.P.; Professor Sewell; Mr. Shaw (Northampton); Mr. Villiers Shelley; Mr. Manners Sutton; Mr. George Turner; Mr. T. Turner; Mr. T. Umbers; Mr. Jonas Webb; and Mr. Henry Wilson.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly Report on the accounts of the Society, from which it appeared that on the last day of the month just ended the current cash-balance in the hands of the Society's Bankers was £2,050 (including £1,000 as the subscription from Norwich, £281 as the amount of arrears paid up, and £769 as the amount of compositions for life).

Prize Essay.—Mr. Pusey, M.P., reported, on the part of the Journal Committee, the award of the Society's Prize of £50 for the best Report on the Farming of Lancashire, to WILLIAM JAMES GARNETT, of Bleadsdale Tower, near Garstang, in that county.

Agricultural Chemistry.—On the motion of Mr. Pusey, M.P., the discussion on the Report of the Chemical Committee was resumed, and postponed to a Special Council on the 30th instant.

Veterinary Committee.—Mr. Raymond Barker, Chairman, presented the Report of the Veterinary Committee, which was unanimously adopted.

Norwich Meeting.—Mr. Raymond Barker then presented the Report of the General Norwich Committee, which was also unanimously adopted. This report had reference to the advertisement of prizes, railway conveyances, Lectures during the Meeting, and plans of the Show Yard and Dinners.

Country Meeting of 1850.—Memorials for the holding of the Society's Country Meeting of 1850 were received from various places in the western district, and were referred to an Inspection Committee, consisting of Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Brandreth, Mr. Milward, Mr. Brandreth Gibbs, Mr. Kinder, and Mr. Shaw (London), with a request that they would report to the next Monthly Council on the respective accommodation afforded by each locality for the purposes of the Meeting.

Honorary Member.—On the motion of Mr. Brandreth, seconded by Mr. Pusey, M.P., Professor Simonds, Lecturer on Cattle Pathology in the Royal Veterinary College, was unanimously elected an Honorary Member of the Society.

A specimen of Soil from Colonel Challoner, inodorous Manure from the Marquis of Downshire, and an im-

proved Draining Level from the Earl of Tyrconnel, were reserved for inspection and practical discussion at the next Weekly Meeting.

The Council then adjourned over Easter to 17th April.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Tuesday, the 17th of April. Present—Mr. Raymond Barker, Vice-President, in the chair; Earl of Tyrconnel; Sir John V. B. Johnstone, Bart., M.P.; Mr. Blanshard; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. Dyer; Mr. Fuller, M.P.; Mr. Brandreth Gibbs; Mr. Fisher Hobbs; Mr. Kinder; Mr. Joseph Laycock; Mr. C. E. Overman; Mr. Apsley Pellatt; Mr. Roddam; Professor Sewell; Mr. Spencer Stanhope; Mr. Hampden Turner; Mr. T. Turner; and Professor Way. The Baron Mertens d'Osten, deputed to this country on the present occasion by H. M. the King of Belgium, to inspect the practical results of the different systems of drainage adopted in England, took his seat at this Meeting of the Council as one of the life-members of the Society.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported to the Council the following awards by the Judges of Essays; namely:—

I. The Society's Prize of £50, for the best Report on the Farming of Sussex, awarded to JOHN FARNCOMBE, of Patriot Place, Brighton.

II. The Society's Prize of £20, for the best account of the Breeding and Management of Pigs, awarded to THOMAS ROWLANDSON, of Greek Street, Liverpool.

Quality of Water.—Colonel Challoner having submitted to the Council a specimen of sterile peat soil dug up on his estate in Surrey, in which were found decaying portions of wood mixed with a blue substance, Professor Way reported his examination of the same, and his opinion that the blue substance contained in that soil was powder blue. Col. Challoner then stated the contamination which that soil communicated to the pure water, from the higher sands, that passed through the peat below, and the circumstances generally affecting the supply of water in his locality. This statement led to a very interesting discussion and detail of facts connected with the difference in the quality of water as obtained, at almost contiguous sources, from the different mineral strata of the country; Sir John Johnstone citing the fact that the purest water, as far as his own experience extended, was derived from the sandstone formations; and Mr. Fisher Hobbs detailing the circumstances under which common chalk, shot down, in quantities of two or three tons, into wells yielding water impregnated with iron, was found entirely to correct the character of the water derived from that metal—a fact which Professor Way regarded as very important, and strictly accordant with the laws of chemical decomposition.

Inodorous Animal Manure.—The Marquis of Downshire reported to the Council, that he had found the rich animal matter converted by the chemical process of Mr. Home (late 2nd Life Guards), of 22, Brick-street, Park Lane, into a powerfully fertilizing manure, so economical and advantageous an application, one ton at £6 being equal in effect to 15 tons of farm-yard manure, that he

had this year ordered 10 tons of it for the use of one of his farms. The Council ordered their best thanks to the Marquis of Downshire for this intimation, with a request that his lordship would favour them with a detailed report of any results he might obtain in the application of the manure in question.

Steamed Bones.—Mr. Wheble, of Bullrush-court, Reading, favoured the Council with two specimens of bone, submitted by him to the operation of steam at high pressures agreeably with the suggestion of Mr. Blackhall, in Scotland, for the purpose of extracting the gelatine, and leaving the phosphate of lime or earthy matter of bones more distinctly applicable as a manure. The first specimen had been submitted to a pressure of 50 lbs. to the square inch for eight hours, and 13 cwt. of bones had yielded 15 pailfuls of jelly; the same bones exposed to the same pressure for 12 hours longer had furnished 12 more pailfuls of a weaker jelly. Mr. Wheble simply reported to the Council these results as he had obtained them, without being too sanguine as to the value of the process in question in comparison with the ordinary mode of at once disintegrating the particles of bone, and modifying the chemical character of its phosphate of lime by means of sulphuric acid. Professor Way had analyzed the specimens of bone then submitted to the Council by Mr. Wheble, and had found two remarkable facts connected with the process:—1. That the bones, after 28 hours' steaming, still contained 15 per cent. of gelatine. 2. That the greater proportion of the gelatine extracted was obtained in the earlier period of the process, the additional 12 hours' steaming procuring only 3 per cent. more of that animal matter. The Council ordered their best thanks to Mr. Wheble for the favour of this communication, and to Professor Way for his chemical examination.

Professor Simonds.—Professor Simonds communicated to the Council his acknowledgment of the honour conferred upon him by his election as one of the Honorary Members of the Society, and "that while that distinguished mark of their favour recognized his previous efforts to be worthy of their patronage and support, it would stimulate him to increased exertions in the furtherance of their national objects." Professor Simonds also expressed his entire willingness to accede to the request of the Council that he should deliver a lecture before the Members on the occasion of their ensuing Norwich Meeting in July next.

Stoppage of Drains.—Captain Richardson favoured the Council with replies to queries, suggested at a former meeting of the Council by Dr. Calvert, in reference to the stoppage of Drains by masses of vegetable fibre, supposed by Captain Richardson to proceed from the roots of the mangold-wurzel crop adjoining. These replies not only furnished, in Captain Richardson's opinion, additional strength to his conjecture in reference to the nature of this vegetable fibre, but included the experience of another party, Mr. Stanford, who was led to adopt the same opinion. In order to investigate this subject microscopically, Mr. Brandreth Gibbs favoured the Council with a supply of actual fibres from the mangold-wurzel root. An interesting discussion

then ensued, in the course of which Mr. Fisher Hobbs cited his own experience, as well as that of the late Mr. Handley and of Mr. Love, on the great depths at which the roots of the wheat and barley plants would strike into the earth. He thought the subsoil a most important one, in connexion with the question of deep cultivation and the placing of drains at least four feet below the surface, in order to remain under ordinary circumstances beyond the reach of radical fibres. He had great confidence in the use of collars applied to drain-pipes, for preventing the insinuation of these fibres.—The Chairman also cited the experience of Mr. Badoeck, of Oxford, and Mr. Blanshard that of Viscount Barrington, in reference to the great depths to which the wheat plant had been found by them to proceed. Professor Way had recently read with great interest that portion of the Statement of Mr. Chadwick to the Sanitary Commission (page 22) which related to the faculty of plants to seek food or manures by their roots, and the conditions under which they were repelled from entering the mouths of drains, a subject which had engaged the attention of Mr. Denison some years ago, when drawing up his report on the Clifton water-meadows, for the Society (Journal i. 361); and he thought Mr. Fisher Hobbs's suggestion of common tar, for such a repellent application to the mouths of pipes, a very good one.

Draining Level.—The Earl of Tyrconnel favoured the Council with the inspection of a very accurate and simple levelling instrument, made under his lordship's instructions by Mr. Cooke, an optician, residing at York, and which he had himself employed with very great success in the drainage operations on his own estates. The instrument consisted of a small but powerful telescope, furnished with cross-wires in the eye-piece, and containing a spirit level, embedded out of danger in the upper part of its tube. This telescope was placed, by means of an universal joint, on a very firm and simple folding tripod stand, and the spirit-level admitted of accurate adjustment by a screw. The level was used with a mahogany graduated sliding staff, and was accompanied with a book of instructions for its use. Lord Tyrconnel hoped that the cheap rate at which this level was made, and the satisfactory manner in which it furnished its results, would render it desirable to all parties engaged in the most important but delicate operations of land-drainage. The best thanks of the Council were then expressed to Lord Tyrconnel for the favour of this inspection and explanation.

A letter was read from Mr. Charnock on the advantage of Mr. Cooke's level, and of his own success in reference to the employment of mechanical means for cutting out and filling in drains.

New Hoe.—Dr. Spurgin presented to the Council one of his newly-invented "Shark's-tooth Hoes," for the purpose of hoeing without injury to the roots of plants, for which the Council ordered their best thanks.

The Council then adjourned to Tuesday, 24th April.

The following new Members were elected:—
Buck, James, Warham, Wells, Norfolk
Campbell, Rev. Charles, Weasenham, Rougham, Norf.

Chambers, Thomas, jun., Colkirk, Fakenham, Norf.
 Cobb, Robert L., Higham, Rochester, Kent
 Deau, G. A., Stratford, Essex
 Domville, C. Compton W., 5, Grosvenor-square, London
 Fern, George, Beccles, Suffolk
 Gleaves, William, Abbotsley, St. Neot's, Huntingdonshire
 Hewer, George, Ley Gore, Northleach, Glouc.
 Holmes, George, Brooke, Norwich
 Johnson, John Godwin, Norwich
 King, Charles, New Cottage Farm, P'otter's Bar, Herts
 Kitton, John, Norwich
 Lloyd, Edw. Harvey, Acton Hall, Oswestry, Salop.
 Paxton, Joseph, Chatsworth, Bakewell, Derbyshire
 Quicke, John, jun., Newton House, Exeter
 Reeve, James, Snetterton Hall, Larkingford, Norfolk
 Richardson, Thomas, Brandenburg House, Chatteris, Cam-
 bridgeshire
 Savory, John, Rudham Grange, Rougham, Norfolk
 Seaman, Robert, Norwich
 Thorold, William, Norwich
 Wiley, Joseph, Sprowston, Norfolk
 Wilson, William, Scarning, East Dereham, Norfolk.

SOOT FOR THE POTATO DISEASE.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—We have, in the last two numbers (4 and 5, 1849) of the *Gardeners' Chronicle*, the very important summaries, of the returns to Dr. Lindley's questions, from all parts of the United Kingdom.* They confirm my recommendations in 1845, (and frequently repeated since in your columns) so far as peat soil, early planting, dressing with ashes, and avoiding dung or other putrefactive manure; but do not even mention soot or charcoal, which I have all along believed, and remain still convinced, not only are the best restorative manures for the purpose, but that potato culture is the most profitable employment to which soot can be applied. Witness the case of Mr. Peel's potatoes at Trenant, reported at the St. Germans Farmers' Club:

"The potatoes which I have sold to the Devonport and Plymouth people, this year, are from seed which I got from Ormskirk, in Lancashire, three years ago. They were sent to me without a name, but I should judge them to be what are generally called 'York Regents.' Autumn sowing is what I consider of all things of most importance. I commenced putting in my potatoes on or before the 15th of October, and the result has been that ever since the disease appeared in the country, they have given me a good crop. I have tried a few in the spring months of each year, and these have been a failure, or, at all events, not much better than those of

* The following is Dr. Lindley's circular:—

1848.

A return as to the potato disease in the parish of _____ in the county of _____

I.—Nature of the land on which the crop escaped or suffered very little injury.

II.—With what manured, when, and quantity of such manure per acre.

III.—Time and manner of planting.

IV.—Sort planted in the land above described.

V.—Supposed cause of exemption from disease.

VI.—General observations as to the appearance and progress of the disease.

my neighbours. For seed I prefer entire small potatoes, say of one or two ounces each, to cuttings from full grown tubers. I put the seed in eight inches deep, which prevents them shooting up too early and protects them from frost. Over each set I throw a good handful of soot, or pounded charcoal if soot is not to be had; and I have three or four cwt. per acre of salt, which has been used for salting pilchards, and which cost 20s. per ton, sown broadcast over the land before I commence sowing. Soot, charcoal, and salt, are all fertilizers, and, unless the ground be very poor, will be dressing enough to secure a crop; nevertheless as quantity is an object, I see no objection to giving the potatoes a top dressing of sea-weed or stable litter, just at the time you begin to see them peep out of the ground. I do not approve of putting in stable or other putrescent manures with the sets, as I think it predisposes them to take the malady; whilst soot, or charcoal, and salt, have not that effect, being all antiseptic or antiputrescent. My potatoes have been attacked by the disease, every year, like those of my neighbours, and the haulm has withered away, leaving the tubers sound, with the exception of a few which happen to be near the surface; this I consider a proof that the antiputrescent manure is a great recommendation. My last year's potatoes I have sold at from 8s. to 14s. per bushel, and they have given at the rate of about £100 per acre, to pay for seed, cultivation, and farmer's profit."

Why, with such facts as these before us, should we despair of gradually restoring the hardness of this valuable plant, no longer despised, now we have so nearly lost it? Amongst the other cases of soot manuring furnished to you by me, from time to time, is that of Mr. Cuthill, of Camberwell, who seems to have escaped the disease altogether, from the beginning; and when soot was not at hand, charred peat, or other charcoal, has been extensively successful.

It is especially to the culture of the potato for seed, with a view to the gradual restoration of the hardness of the plant, that I have called the attention of farmers. High ground, peaty soil, deep and early planting, and antiputrescent dressings, are just the contrary treatment to that under which the disease has been produced; and if favoured with a few fine seasons to excite and strengthen the vital action, I hope we may yet have the potato as hardy, wholesome, plenty, and profitable as ever.

Having been requested to give an analysis of soot, I extract the following from the *Farmers' Almanack*, 1848, page 95:—

Average composition of Soot in 1,000 parts.

	PARTS.
Combustible matter	671
Salts of Ammonia	126
Salts of Potash and Soda	24
Oxide of Iron	50
Silica	65
Alumina	31
Sulphate of Lime (Gypsum)	31
Carbonate of Magnesia	2

1,000

That from the upper part of the chimney being richer in ammonia and more active than that from below.

J. PRIDEAUX.

THE LONDON FARMERS' CLUB.—MONTHLY DISCUSSION.

The usual monthly meeting for discussion took place at the Club House, Bridge-street, Blackfriars, on Monday, April 2, J. Payne, Esq., of Felmersham, Bedfordshire, in the chair. Subject—"On deep cultivation by the plough, the spade, and the fork."

Mr. MENCHI rose and said—Sir: In deference to, and in accordance with, the desire of our committee, I venture to communicate the results of my experience in the subject matter of the present discussion; feeling that I shall require much indulgence from those members present, who have had longer practice and greater experience than myself in agricultural operations. We are all agreed that *some* degree of cultivation is necessary for our seed-bed; nature herself has proved this necessity by disintegrating the surface of our globe, using the chemical aids of air and of water, and clothing it with vegetation, adapted by the Almighty wisdom to the soil and to the climate, for the use of animated nature. In vain does man select the most imperishable material as a record of his skill; chemical affinity, by the ultimate action of heat and cold, of air and water, decomposes and crumbles to dust and to shapeless masses the architectural beauties of antiquity. It is a singular fact, that rarely do we meet with a farmer who would deny the benefit of a long summer-fallow on tenacious soils—I mean a frequent ploughing of the surface soil; and yet, how few are prepared to admit the advantage of a similar operation to the subsoil! This seeming discrepancy is, however, not to be wondered at. The greater part of the heavy and hard-bottomed land of this kingdom is undrained, or drained too shallow to admit of subsoiling. Experience has proved, that to subsoil without previous draining is most injurious. On undrained lands the open furrows act as drains to the disturbed soil; but when the subsoil is broken up below those furrows without any subterranean escape for water, it becomes after rains a puddled mass, into which the horses' feet force the upper soil, or seed-bed, very much to its injury. In fact, it is a great impediment to cultivation, and hurtful to the crops; therefore, drainage must precede subsoiling. There are many reasons why a disturbance of the subsoil may be profitable, where deep ploughing or digging would be ruinous. Let us beware of burying our seed-bed, which has so long been cultivated and manured: if we do this, and bring to the surface a bad, stagnated, undecomposed subsoil, we shall feel its ill effects for years. I speak practically in this matter; for wherever the yellow soapy subsoil of the new ditches has been spread on the surface, it makes a miserable seed-bed, and is most difficult to work. Let us keep the surface soil where it is; for in breaking up the subsoil, quite enough of it will of necessity be mixed with the upper soil. As the solutions of lime, manure, and atmospheric influences gradually ameliorate the under soil, we can year by year gain one inch by deeper ploughing; remembering, however, that it will be one

hundred tons of new earth per acre, a pretty strong dressing. In dealing with inferior subsoils we must be governed by our facilities for obtaining abundant supplies of lime, chalk, and manure, which would enable us to take a greater liberty with the under soil. I will now state what soils I consider require deep cultivation: Strong, heavy, tenacious clays of almost every description; these should be broken up in dry weather, because the treading of many horses is not then injurious; besides, the subsoil, being dry, is torn or broken up into fragments and irregular masses, which freely admit the summer heats and evening dews; whereas, if done when wet, the putty-like subsoil would collapse, and the surface become kneaded by the treading of horses. Sandy, silty, or gravelly soils, having a *hard* bottom of iron sandstone, or masses of pudding-stone (an admixture of pebbles with protoxide of iron, forming a sort of rusty rock-stone); these soils have generally contained much spring water, headed back by occasional veins of clay, and are much benefited by subsoiling. I find by breaking up these soils to the depth of twenty-one to twenty-four inches, instead of the common depth of four to five inches, that all crops succeed better, particularly roots, green crops, and clover. Their roots descend deeper, and are consequently less subject to injury by the vicissitudes of extreme cold or drought—of course drainage secures them from stagnant water. I speak feelingly on this subject, for before I drained and subsoiled my land our winter crops were often injured, as well as our summer ones. I am convinced that it is the freezing of the *roots* in our shallow soils that often destroys our clovers, our tares, and our wheats. I have traced the roots of wheat and tares from nine to eighteen inches below the surface, even so early as Christmas, where the soil has been sufficiently moved and pulverized; and we all know that clover roots descend very deeply into good, friable subsoils. The pan, or impervious mass, that is often formed immediately below the plough, is a great impediment to the roots of plants; subsoiling remedies this evil. It often requires great force to break up this pan. The advantages of subsoiling on such soils as I have described are observable for several years. One result of deepening the staple is to cause a less rapid, but more perfect development of the plants. Their growth is prolonged, and forms a striking contrast to the hasty prematurity and inferior produce of shallow soils with a hard and unpulverized substratum. It is stated by Liebig, and other eminent chemists, that iron has the power of attracting ammonia from the atmosphere, which contains it in unbounded supply; if so, this at once accounts for the beneficial results of breaking up deeply, and exposing to atmospheric influences our tenacious clays which abound in iron; my heavy soils show by analysis near eight per cent. of peroxide of iron. Another advantage of subsoiling is the destruction of deep-rooted weeds; I know of instances

where roots of thistles and other weeds, as thick as one's finger, have been disturbed by the fork and the subsoil plough, but which were merely pruned by the ordinary plough. Dressings of chalk, marl, and heavy earths sink down in stratified layers, and in a few years are below the reach of ordinary ploughing. Subsoiling and crossing the land by deep summer ploughings often restore to us the lost application. If we needed an argument against those immense mounds or lands, so often met with in the midland counties, the impossibility of cross-ploughing them would be conclusive evidence; still, being so formed, it would be dangerous indeed to alter too suddenly the relative position of the seed-bed and subsoil. My own experience does not extend to calcareous soils; but we have evidence on Mr. Hewitt Davis's Surrey farms, that the gradual breaking up of the chalks is highly beneficial, especially in destroying or checking the growth of deep-rooted weeds. At the farm of the Royal Agricultural College, Cirencester, similar good results have been derived by deep cultivation, under the judicious and unprejudiced management of Mr. Wilson: the soil there is mostly corn brash, or laminated lime stone; the breaking up of this by deep ploughing and subsoiling has a very noisy, and rather ludicrous rattling effect. I have generally a great respect for the practical experience of agriculturists; but I am bound to say, that on the chalks and limestones custom has assumed (without practical experience) that deep cultivation would be injurious. There are some soils in which subsoiling or deep cultivation is, perhaps, rarely requisite, except to remove deep-rooted weeds, resulting from neglectful farming, or to recover a lost dressing of marl or chalk. These are loose, hot, dry sands and gravels; deep, loose, rich, friable vegetable loams, and reclaimed felty bogs. In all these soils air and water have a very free passage. I have reason to know that in many instances some of them are most profitably managed by consolidation with sheep folding, and by heavy rolling, the breast-plough and scarifier absolutely, or nearly superseding the common plough. With regard to the mode and cost of deep cultivation, my experience is, that where horse labour can be properly applied, it is always more profitable than manual labour; the relative weekly cost bearing no comparison with the relative power. In very strong clays during dry weather manual labour is almost unavailable; so also in hard, conereted, rocky bottoms. My mode of subsoiling is as follows: we open the ground eight to nine inches deep, with a strong full-breasted iron plough, drawn by three horses abreast, having an equalizing Scotch kingd iron whippetree. Smith of Deanston's subsoil plough follows in the track of the first plough, drawn by six strong horses, breaking up fourteen inches of the subsoil. The first plough turns a furrow slice on this, and is again followed by the Deanston plough.

The cost is as follows:—

9 horses at 2s.	£0 18 0
3 men at 1s. 8d.	0 5 0
	<hr/>
	£1 3 0

Quantity ploughed five eighths to six-eighths of an acre per day, seldom so much as the latter. Of course

the chains and every part of the subsoil plough is very strong; and it is severe work for six good horses in hard soils. I find a small wheel in front of the subsoil plough a great advantage; it causes the plough to swim true, and prevents those violent jerks so injurious to the ploughman and his cattle. Compare a man using a pick-axe with the power of six strong horses applied to a point almost as small. The hard or stony subsoil, that doggedly resists the repeated hackings of the labourer, is broken up and shivered to atoms by the resistless plough, which groans and rattles as it wedges itself amongst the stubborn masses. The fork and the spade can only be advantageously employed, during the winter months, in soils of a more workable character than some of mine, which are too clung and soapy in wet weather. In a more friable field I have forked, under the plough, seven acres with advantage, at a cost of 42s. per acre, including ploughing. I leave the details of this to be explained to you by Mr. Beadel, who is experienced in this matter, and to whom great credit is due, seeing how much labour he has employed. I say nothing of spade husbandry, because that cannot, yet, become the general custom of the country; however desirable it may be, and undoubtedly is, in over-populated districts during the winter season. After subsoiling, the land is crossed and intermixed by a strong common drag-harrow, having teeth or spikes eighteen inches long, and drawn by four horses abreast, the driver sitting on the frame. Although an old fashioned tool, I can find none better suited to the purpose of deeply raking the ground, and bringing the unbroken lumps to the surface, to be crushed by Crosskill's roller, or to be pulverized by atmospheric influences. As to the recurrence of subsoiling, observation must guide us; there is a tendency in soils to settle down, and become solid. We shall seldom err in trench-ploughing our land for root crops once in four years. Trench-ploughing will be found easy where once the land has been subsoiled; this I sometimes do before winter, having three horses to each plough, so arranged as not to tread or solidify the work. The leading plough has a full bold breast; the second, that follows in the track of the first, has a smaller breast or mould-board. I have used Read's subsoil plough with advantage, and it is a very convenient tool for small farmers with a limited team; of course it does not go so deep as Smith of Deanston's powerful tool. In Scotland it has (with some improvements by Mr. Slight, of Edinburgh) been considered to require less power than Smith's plough. It is the opinion of Mr. Smith, in which I entirely concur, that subsoiling greatly facilitates the passage of water to drains. I find that subsoiling materially assists the evaporative powers of tenacious soils, rendering them dryer, and consequently much warmer; in fact, evaporation is a super-drainage of the soil after the ordinary drains have ceased running. When land is trench-ploughed a second time, it should be across, or at right angles with the first subsoiling. Although I advocate deep cultivation and a loose subsoil, I attach much importance to a fine, firm seed-bed; particularly for turnips, mangold, rape, and mustard:

Crosskill's roller effects this comfortably in dry weather. Allow me, here, to pay a tribute of justice and respect to the father of subsoiling in this kingdom, I mean Mr. James Smith, of Deanston; he is entitled to our gratitude, not only for applying to the subsoil Jethro Tull's admirable principles of tillage, but for his general, ardent, and excellent exertions to promote our native agriculture. We must all deeply regret the generally shallow tillage of this kingdom. In too many instances the mouth of an ordinary wine glass, or 2½ inches, is a common depth in some districts, whilst rarely can we find the furrow slice cut deep enough from the solid land to cover the level of a wine glass in a standing position, which is only 4½ inches. The result of this shallow cultivation is made apparent to all who travel by rail during summer, the question frequently being, which is the strongest crop, the weeds or the corn and roots? In conclusion, I thank you for your patient attention to my very long story; my excuse must be the importance of the subject. I have always felt that agriculture is the corner stone of our existence as a nation—our increasing millions must be fed and employed. Our acres do not multiply—the time is coming when we must use much more labour and capital, and produce a much larger quantity of food from the present space of ground. This can be effected only by greater depth of cultivation, and largely increased supplies of manure. Science and more live stock will help us to the latter; but the cottage-gardens and allotments on our heaths and wastes give undeniable evidence of the productive powers of our poorest soils, under the influence of deep and frequent cultivation.

Mr. THOMAS said he had paused to see if any other gentleman would rise, after the lucid, amusing, and instructive discourse which they had heard from his friend Mr. Mechi, and he certainly would have been glad if some gentleman, older and more experienced than himself, had risen to speak on this most important subject. He confessed that he had never listened with more pleasure to Mr. Mechi than he had done that evening. There was but little which that gentleman had stated to which most of them would not be willing to subscribe. Of this one thing he was by practice convinced—namely, that deep ploughing, like deep draining, without deep subsoiling, was almost throwing money away, and that deep draining could only be used with practical benefit where subsoiling could be used with equal advantage. Here was the difficulty at present. Their horses, and business, and tackle were not generally fitted for such severe work, any more than the ordinary team of the farmer was fitted for the heavy carting of timber, which they saw carted away by those who were in the trade with the utmost facility. If deep subsoiling were introduced more extensively in this country (he believed it had not been introduced to the extent that it ought to be), it would prove successful. The most proper and advantageous mode would be for the parties who felt a deep interest in this matter—for example, the landlords—to keep teams for their own individual profit, which should perambulate the country, being paid properly for the work done; and thus, by constant habit, they would

be able to do that efficiently which the farmer, by means of his ordinary team, would find it exceedingly difficult to perform. Mr. Mechi had told them that they must now apply themselves more to their stock. He must say, that in walking through Smithfield about one o'clock that day, he had seen two thousand splendid oxen without customers; or, if there were customers, the prices were such as afforded no profit to the parties who had bred and fattened the animals. He feared, however, that the present distress of agriculture in this highly-taxed country was owing to causes over which, as agriculturists, they had no control, and to which, as the club excluded politics, he could not further refer. He trusted that the time had come when they might successfully compete with their neighbours, who were far less taxed than themselves; and he was confident that if they could do it successfully, it could only be by the application of more capital, skill, and zeal, and by their availing themselves of such machinery as their attention had been directed to that evening. He agreed with Mr. Mechi that subsoil ploughing had not been carried out to the extent that it ought to be; and he believed that deep cultivation, properly applied, was one of the great mainstays on which they had to rely. He was the more convinced of this, because in the Channel islands—Jersey and Guernsey—he had seen deep ploughing carried out, by fourteen or fifteen parishes putting their horses to the plough, which was the sole means by which such enormous crops had been obtained in those islands.

Mr. BEADEL said he should not satisfy himself, however he might satisfy other members of the club, by allowing this subject to be dismissed without making a few observations upon it, more especially after two or three remarks which had fallen from his friend Mr. Mechi. The subject, as it stood on the card, appeared to him a very important one. Deep cultivation was admitted by Mr. Mechi and Mr. Thomas to be all important, and the object of the discussion that night was to ascertain whether deep cultivation could be carried on best by the plough, the spade, or the fork. If he read the subject rightly as it was stated on the card, that was the proper definition of it; and though all of them might think subsoil ploughing exceedingly important, still it might be that the same object was attainable by other means not more expensive in the application, and more profitable in the result. He felt that in the few observations which he had to make to the meeting—taking a course which he knew to be contrary to the opinions of a great number of agriculturists—he should labour under some disadvantages; still, he knew enough of the independent feeling of the tenant farmers of this country to believe that he should have a patient hearing. He would state boldly, in the first instance, that he was there to prove that deep cultivation could be more cheaply, as well as more efficiently, carried out by the fork than by the plough; and having made that statement, he trusted that the principles which he laid down would not be set aside, injured, or damaged by any preconceived opinions which the club had formed. Mr. Mechi would excuse his saying that, being wedded to the plough, he did not pay much attention to the spade or the fork. That ap-

peared a fitting opportunity for him to state to the club what he had to say with regard to the advantages of the two systems. All he asked was, that the meeting would more fully consider the course he had adopted, and duly weigh and properly compare the two systems. Mr. Mechi had begun by saying that digging would be ruinous, meaning that it would be so if the under-soil was brought to the top. ("Hear, hear," from Mr. Mechi.) In that point he perfectly agreed with Mr. Mechi. Nothing could be more ruinous than to bring up the crude subsoil to the surface; but the system which he adopted had not that effect, and in that respect no ruin could attend the adoption of his plan. He knew how difficult it was to disentangle from men's minds the supposition that he was bringing up the under-soil to the surface. In reality, however, he did no such thing, always keeping five or six inches below the surface. Mr. Mechi had stated that, among other lands which paid for subsoil ploughing, was clay of all descriptions; but he added that it must be done in dry weather, on account of the treading of the horses. Now, the plan which he adopted would do in wet weather, when not a single horse was employed. Mr. Mechi also said that sandy, silicious, and gravelly soils would do for subsoiling. Now he (Mr. Beadel) could speak as to the sandy and gravelly soils, in which he had had to use that awful tool of which Mr. Mechi spoke—the pick-axe. With regard to the statement that loose, hot, dry, gravelly soils were useless to operate upon, he would observe that by his system he had operated upon such soils also; and though it would be too much to say that it prevented burning, yet he must say that it very much mitigated burning. If they had land subject to burning, and disturbed and broke up the subsoil, they would find the burning much less, though the soil itself remained unchanged; and he considered that in that respect his system was beneficial. (Hear, hear.) Mr. Mechi had stated that the expense of subsoiling by the plough was 32s. an acre. He would be able to satisfy this meeting that his system of subsoiling would not cost more than 40s. an acre. Here was a difference of 8s.; but the description of work would more than counterbalance the difference in price. Their friend Mr. Mechi had indulged in a figurative expression when talking of "the resistless plough." He (Mr. Beadel) had heard the words, and put them down. Mr. Mechi asked, "What is your pick-axe compared with the resistless plough with six horses pulling it?" For his own part, he did not think there was anything more resistless in a plough than in a pick-axe. Mr. Mechi had also observed that the plough and the spade could only be useful in summer.

MR. MECCHI: I said in winter.

MR. BEADEL: Yes, but it was to be done in dry weather.

MR. MECCHI: The subsoil.

MR. BEADEL had understood Mr. Mechi to say that the plough would be useful in summer, but the plough and the fork only in winter. The real difficulty which he found—and it was that which first directed his attention to another mode of effecting the object—

was the tendency which the soil had to slip down and to consolidate again in its original state. It was very like what they might have sometimes seen when they had snapped a board and not separated it. If they raised the two ends they would find that the broken parts exactly fitted. He had discovered, in lands where subsoil ploughing had been tried, a tendency to settle down in the same state as before. The soil was not broken up perfectly in clods and disintegrated, while by his own plan it was perfectly disintegrated and turned bottom upwards, and it could not therefore get into its old position. Mr. Mechi said the time had come when they must use more labour, and he admitted the truth of that position; but why he should take six horses against ten or a dozen men he could not at all understand. Having made these observations upon what had fallen from Mr. Mechi—and he repeated that he had listened to Mr. Mechi with the greatest pleasure—he would now remark that he apprehended that in deep cultivation there were three or four things to be kept in view. First, there was the improvement of the land; and he meant those words to apply more particularly to the surface. The next point was the difference in the staple; because he apprehended that on a large portion of the lands in this country the present top-soil was neither more nor less than a portion of the subsoil broken up, then operated upon by the atmosphere and improved by manure. Another point had reference to labour. He quite admitted that no one had a right to advocate the supply of labour unless he could couple with it another thing which was absolutely essential; namely, the securing that the labour should be profitable to the employer. With that object in view, if two plans presented themselves to the farmer, both accomplishing the same object, and both pretty much at the same cost, if one gave labour, and the other did not, that was quite a sufficient reason for preferring the former; inasmuch as it put money in the farmer's pocket by saving the expense of unproductive labour, which was given in the shape of poor-rates. Another object of deep cultivation was the thorough cleaning of the land. They all knew that if they were farming land in which dandelions, thistles, nettles, and other weeds grew plentifully, on the common system of ploughing, they simply scraped off those weeds—they did no more. The same thing was done, to a certain extent, in subsoil-ploughing. Under his plan they were turned bottom upwards, so that they could not grow again. He would now proceed to detail the plan which he pursued, and which experience, as far as it went, showed to be the best. It would occupy more time than could be conveniently spared, to enter into every detail; and he would therefore say, that if any gentleman felt a curiosity on the subject afterwards, he should be happy to give him fuller information. He had followed the system for nearly ten years with almost unvarying success and satisfaction; nor had he any intention of altering it in consequence of anything which had occurred. The system which he pursued was this. I take a field (continued Mr. Beadel)—I take land which has come into fallow, and which is only fit to be cropped with ploughs and harrows. I first dig the furrows in that field with

the fork—of which I must have sent two-hundred specimens into different parts of the country, so that it must be known; and there can be no necessity therefore for me to describe it. The fork is thirteen inches long. I dig the bottom up. The furrow between the stiches is first dug as the land lies. It is no matter what is the width of the stiches. I turn up the furrows thirteen inches deep with the fork. The man goes and takes off a slice of that, and turns it on the top, and of course a furrow is left on each side. He does it with the common plough, and with nothing else (Hear, hear). I go as deep as I can. Five or six inches is the ordinary depth; but on most of our soils, if you went a foot deep you would take up two or three inches more soil than are necessary for your purpose. Thus I have a furrow on each side. Having dug thirteen inches deep, I then take another slice, and thus I proceed till I have completed the entire field. The fork is a three-pronged one, and is made very stiff in the shoulders. I first tried the spade; but when there was a stone or any other hard substance, the long continuous edge of that implement could hardly wriggle by it. Having thus gone through the whole field, by an operation which lasts from October to February, you let the field remain exactly as it is till you are ready for a root crop, which I always take after digging; for this reason, that while I get rid of the root weeds, I bring a vast number of annual weeds under the influence of the atmosphere. These weeds are poisonous, and therefore a root-crop always succeeds the ploughing. After the operation has been performed, and before I sow my root crop, my usual plan is to scarify the land. I do nothing else: I have no other ploughing; there is simply one plough and a scarifier.

Mr. SWIFT: How do you get your farm-yard manure?

Mr. BEADEL: I feel obliged to the gentleman for putting that question, as the point might otherwise have escaped me. Where I have dug I never manure, and experience with regard to the crops has shown me that it is unnecessary to do so. I save the manure, therefore, for other purposes. If any gentleman wishes to put his farm-yard manure on the land he will have no difficulty in doing so; he has only to cart it on the land as he would on fallow, spread it on the surface, and turn it in with the plough. It is an entirely open question, and any one who thinks it best to put on the manure will not be prevented from taking that course. But with regard to the root crops which I grow, I generally find that when I subsoil with the plough I am better without the manure than with it.

Mr. W. SHAW, of Northamptonshire: How many men have you to keep one plough going?

Mr. BEADEL: I do not keep the plough going constantly. If I have eight or ten acres to operate upon I set the men to dig. Suppose I have two men, I give an order for the digging at so much a rod, and put on any man who comes. It is a capital test of industry. I had on one field of nine acres 85 men at work for a fortnight. My own men were engaged perhaps with the horses somewhere else, and if they happen to come near the digging I say to them "Go and plough the fallows." Whenever it requires to be done I order it to be done.

I do not want a plough to be constantly following the men in the fields. I have found it the best workhouse test in the world. Lazy men will not come to you, and those whom you employ cannot deceive you. You have only to walk along the furrows with an iron-shod stick in your hand, and thrust it into the ground, and I defy any man to deceive you. If men ever attempt to cheat you refuse to give them a shilling till they have gone over the work again; and, you may rely upon it, they will not make the attempt a second time (laughter). I am aware that I am propounding to you something rather novel. All I ask is that you would give the plan your best consideration. What appears to be rather *outré* at first, after being tried often proves successful. I request you then to do me the favour to weigh the plan well, and not to condemn it until you have really done so. Observe that I am stating carefully the result of actual and extensive experience. I was, I confess, at first prejudiced against the system; I have been convinced against my will; and therefore I feel sincerely that the principle is a correct one. The next point is the expense of this operation. Here I set out by confessing that unless I can shew that the farmer will be a gainer by it I cannot fairly ask him to expend his money in labour. (Hear, hear.) Now I have bestowed on my calculation the greatest care. I have felt that if the price of corn shall continue as low as it is I shall be able to do the work as low as 2½d. a rod, or 32s. an acre. Last year I gave 3d. a rod, or 40s. an acre. I take 40s. an acre for the digging, 8s. for the ploughing, and 2s. for the scarifying, which gives 50s. as the cost of making the fallow. Now my next remark is, that the ploughing varies in different districts. In my district, seven, eight, nine, or ten ploughings for a turnip crop are not considered an outrageous number. But if you take six ploughings at 8s. it then comes of course to 48s. an acre; and I know that in a large district of the county of Essex, where the land is carefully prepared and cleaned for turnips, six ploughings are not considered at all excessive. Thus there is 2s. an acre difference between making the fallows in that way and digging. Take a farm of 200 acres farmed on the five-course shift. Upon that land 40 acres of fallow would come in course for digging. In all probability, were the plan generally followed, that is a greater proportion than could be done. Therefore I will say take half this quantity, 20 acres each year as it comes in course of fallow. When you have done that you may get rid of some of your horse power. Probably it may not have occurred to many gentlemen present, in considering this question, what is the cost of keeping a pair of horses. It so happens that in some matter of business in which I was concerned it became my duty to obtain this cost. It was found that the expense of the keep of the horses, together with that of the harness, the men, and the shoeing was not under £70 a year. I believe that if you take the keep of the horses, make a certain allowance for risk—for in everything of that sort there is risk—and if you also consider the implements which are used, you will find that the whole expense is nearly £70 a year. At all events that was the effect of the evidence given by two of the largest practical far-

mers that I know anywhere. Therefore if you dig 20 acres of your fallow land, it will supersede the necessity of keeping so many horses by two, at all events, for a considerable time. We know also that there is a great difference between keeping horses in the straw-yard out of work and keeping them in work. If you work them they must be highly fed, but if you do not work them you may keep them upon a sum which will be quite equivalent to the extra cost of digging the land. Another great advantage is the employing labour at a time of the year when the employment of labour is generally short. The digging runs from the latter end of October up to the latter end of February; and if you cannot get it all dug, and if labour is scarce, you have the satisfaction of knowing that you have helped the rates considerably and yourselves too. Looking, therefore, at the plan as a whole, I do feel that either the spade or the fork is preferable to the plough. I approve of the fork, however, for the reason which I have suggested to you, namely, that the use of the fork would be a very great advantage to the farmer in every locality, first, by improving the land, and secondly, by affording labour, and a description of labour which tests a man's industry. You give a man so much a rod; you can tell whether he has done it right or wrong; you cannot be deceived. It is a description of labour which you can go on with at any time and in any state of the weather. Supposing you dig 20 acres, that will be equivalent to employing one man at 2s. a day for a thousand days. Every 200 acres would employ for four months, or sixteen weeks, 10 men. If you only follow out that plan to a limited extent; if you wash and dig five acres or even one as an experiment, and if you find that the result of a careful working out of the system is that which I have stated, you will then agree with me that subsoil ploughing is a mere apology for subsoiling, and that it supersedes manual labour to the prejudice of the labourer and the injury of the farmer. The subject is one which I have studied carefully for a considerable period; and my only desire is that gentlemen who have not tried the system will do me the favour to try it. I should be glad to assist them with more elaborate explanation; though, after all, the plan is as simple as possible when understood. Though every gentleman present should be an advocate for the subsoil plough, I should still be an advocate for the fork.

Mr. W. SHAW, of Northampton, wished to know how many men were employed to keep one plough going. In his opinion Mr. Beadel had evaded the question.

Mr. MECHI believed that 20 men were required.

Mr. W. SHAW did not see how land could be dug unless it were ploughed. Mr. Beadel had said that sometimes he had only two men in the field, and that at one moment they ploughed a fallow and then again they left it.

The CHAIRMAN thought Mr. Beadel had explained that in his speech.

Mr. BEADEL: What I said was this (and I wish to be distinctly understood)—the commencement of the digging is the first operation, so that no ploughing is needed before beginning to dig. My habit is to send men into the field to dig all the furrows in existence;

then to send a man to turn a furrow with the plough; and after the men have approached near the end of their work, he goes and turns more furrows. One of the advantages of my plan is that under it you may employ as few men as you please.

Mr. MECHI believed that it took 20 men to keep a plough going.

Mr. BEADEL: Yes, if you keep the plough going constantly; but I take them as I can employ them, and when there is nothing else for them to do. I repeat that, having tried my system for years, I have found no practical inconvenience, and I am prepared to meet any objection which may be urged. I am quite aware that the plan is a new one, and the fact that it is new is quite sufficient to excite the opposition of some people.

Mr. CHEETHAM said: I have listened with great interest and pleasure to the observations made by preceding speakers on the subject of deep cultivation by the plough, the spade, and the fork. I have myself collected the results of a few experiments which have been made; not by myself, but by other persons upon whose accuracy I can depend. If admissible I shall be glad to give you the result of an experiment made with the plough and with the fork, including the practice of spade husbandry as it is carried on in my own county (Rutland), especially as it relates to small allotments. The experiment was made by Mr. Edward Wortley, of Redlington, Rutland. That gentleman has written a short essay on the subject. He says—"No sooner had I ascertained that a premium was offered for a statement of the comparative merits of ploughing, and of digging or forking, than I determined to undertake the experiment; and having just concluded the carting and weighing of the separate allotments, I feel great pleasure in thus contributing the result to the public, hoping it may tend to establish correct principles, and emulate to advantageous practices in the husbandry of our country. I shall endeavour, in the following remarks, to avoid entering at length into a theoretic essay, and confine myself as closely as possible to a practical statement. Owing to the continued severity of the frost, the land was not broken up, either with the fork or the plough, until the month of March. The experiment extended over four acres, which were cultivated in the following manner:—One acre forked, with the fork introduced into this neighbourhood by R. W. Baker, Esq., of Cottesmore, and drilled with carrots. One acre ploughed once, harrowed, and drilled with carrots. One acre forked and drilled with mangold wurzel; and one acre ploughed once, harrowed, and also drilled with mangold wurzel. I should mention that the tines of the fork are fourteen inches long. It weighs eight pounds and a half. The ploughing was done with a Rausome's N. L. plough—depth five inches. The previous crop—the fourth—was wheat, so that (this farm being cultivated on the five-field system) the experimental crops were last in the rotation, and the land itself by no means of first-rate quality; in fact, some few years ago it was a fox-cover. The soil consists of a light red loam, mixed with red sandstone. On the 12th of April the two acres of carrots were drilled with five pounds of seed to the acre, mixed previously with one cwt. urate for the

purpose of assisting in the more even distribution of the seed, one cwt. being too small a quantity to have much influence as a manure. The two acres of mangold wurzel were drilled, the rows eighteen inches apart, on the 2nd of May—the same quantity of seed as the carrots, and mixed, to facilitate the drilling, with the same quantity of urate. No farm-yard manure whatever was applied to any of the crops; so that, however scanty the fare of food allowed, they were nevertheless all treated alike. The experiment was not for the purpose of testing *manures*, but *implements*. As the plants advanced in growth, the difference between the plough and the fork became very apparent, and was greatly in favour of the fork. Each acre was stumped out separately, but the greater luxuriance of the crops from the forking was so remarkable, that the stumps were rendered quite unnecessary for reference. We began to dig the carrots up the first week in November. I superintended the gathering of all the roots myself, and can vouch for the correctness of the following statement:—

CARROTS.		T.	C.	Q.
Produce from one acre forked		7	8	2
Ditto from one acre ploughed		4	7	3
Difference <i>per acre</i> in favour of forking		3	0	3
MANGOLD WURZEL.		T.	C.	Q.
Produce from one acre forked		13	2	2
Ditto from one acre ploughed		3	5	0
Difference <i>per acre</i> in favour of forking		4	17	2

Thus we see that we have an average gain of very nearly four tons of roots per acre by using the fork instead of the plough, and the only drawback is the difference in the expense between ploughing and forking. The forking cost 26s. per acre: the soil being stony, and never having been moved so deeply before, nearly two cart-loads of soft red stone were brought up in forking the two acres, which the plough, of course, had never touched. Allowing 10s. per acre for ploughing, it leaves 16s. per acre only in favour of the plough, to stand against upwards of three tons of carrots on one acre, and nearly five tons of mangold wurzel on the other! I scarcely know how to place a money value upon the roots, as we are not in the habit of selling any; but to a farmer, who produces and consumes them on his own farm, I do know they are invaluable, both for food and manure. But, taking the market value of carrots at 50s. per ton, and reckoning the increase from forking of 3 tons 3 qrs. per acre of carrots at 50s.—£7 11s. 10½d., and deduct, for greater expense of cultivation, 16s., it clearly leaves us a balance per acre of £6 15s. 10½d. in favour of the fork. Still more remarkable is its advantage in the cultivation of the mangold wurzel. Without deciding upon the price per ton of this root, even if its value should be less than that of carrots, this circumstance is more than counterbalanced by the relative produce being much greater." Mr. Wortley informs me, in a letter this morning, that the benefits arising from forking are the most apparent in the vegetable and seed crops; that it is not so perceptible in the barley crop, he attributes to the circumstance of the land being all so highly ma-

nured by the vegetables being fed off by sheep, that the whole produces a great crop. He conceives that using the fork more than once in the rotation would be prejudicial rather than otherwise. He continues to use the fork each succeeding winter with unflinching success. I am so well acquainted with Mr. Wortley's veracity, integrity, and practical, business-like habits, that I feel the same confidence in these remarks as though I had superintended his experiments myself. I have occasionally seen his vegetables growing, and can speak to their greater luxuriance upon the forked land over the ploughed. For much valuable information relative to cultivation by the spade and the fork, I am indebted to R. W. Baker, Esq., of Cottesmore, Rutland, who certainly has contributed largely to the science of practical agriculture, both by precept and example, and has successfully devoted much time and energy in an endeavour to raise the condition of the labouring classes. And although I am unable to draw a comparison between the merits of the plough, the spade, and the fork, in attempting to elucidate this question, still I conceive that the system of small allotments, cultivated as they are entirely with the two latter implements, and carried into operation under the superintendence and judicious arrangements of Mr. Baker, chiefly upon the estates of the Earl of Gainsborough, will sufficiently illustrate the advantages arising therefrom. I shall take leave, in the first place, to draw your attention to the Exton allotments, 66 in number. These were taken out of the park in 1837, the land being dry and thin, and previously not worth more than 10s. or 12s. per acre. In that year I inspected the crops myself, as one of the judges for awarding the premiums to the best cultivated allotments, and am bound to say that their general appearance was most discouraging; but in the years 1840-1-2, the produce was as follows:—

AVERAGE PRODUCTION UPON 66 ALLOTMENTS.		QR. B.	
1840.....	Wheat.....	5	1 per acre.
".....	Barley.....	3	0 " "
".....	Beans.....	7	0 " "
1841.....	Wheat.....	5	0 " "
".....	Barley.....	7	5 " "
".....	Beans.....	7	0 " "
1842.....	Wheat.....	5	0 " "
".....	Barley.....	7	6 " "
".....	Beans.....	7	3 " "
AVERAGE UPON 122 ALLOTMENTS IN 4 PARISHES IN 3 YEARS.		QRS. BSH. P.	
Wheat.....	5	1	2 per acre.
Barley.....	7	5	1 " "
Beans.....	7	3	0 " "

I regret that I have no satisfactory information relative to the exact quantity of potatoes grown, but I believe the produce ranged from 40 to 50 bushels per half rood. I feel convinced that these results never could have been equalled by the plough upon the same quality of land. I think, however, that the Church Field, or Brand Close, at Uppingham, forms the most striking illustration of the utility of spade and fork husbandry coming within the sphere of my observation. This field was let to the labourers in 1844 most completely exhausted, in which state I saw it; and I am indebted to the kindness of

Mr. William Pickering, of Beaumont Chase, who has watched the system with much interest and attention, for the figures indicating the average produce, in wheat, of the field, in the years 1845-6-7-8, and for the following report:—

1845.	1846.	1847.	1848.
bush. pecks.	bush. pecks.	bush. pecks.	bush. pecks.
5 0	6 3	6 2½	6 0

Considering the unproductiveness of this season, I conceive this to be the greatest produce of the whole. The above quantities were grown, respectively, upon half roods of ground, from one gallon of seed each. The following quantities of wheat were grown by one occupier upon half a rood of ground, from less than two quarts of seed each:—

1846.	1847.
bush. pecks.	bush. pecks.
6 3	6 2

Extracted from Mr. Pickering's letter:—

"All these have been dug with a spade, and from ten to twelve inches deep. I can certainly report the foregoing as being the average produce of the greater portion of the allotments in this once wretchedly-cultivated field, called Braud Close, and let to the labourers by the churchwardens of the parish, who, the year before, or in the winter of 1844, requested me to decide on dilapidations against the out-going tenant, who, indeed, had cropped and sold away until it would crop no longer."

Notwithstanding these disadvantages, its cultivation had attained to such a state of perfection in 1846 as to merit this report, which is copied from a Stamford paper of the period:—"Seventeenth anniversary for awarding the premiums to the most deserving occupiers of small allotments in the county of Rutland. Comparative merits, 'field against field,'—quality of the land, situation, clean and useful husbandry, general management, and the number of years under the system, awarded to the occupiers of the Church field, Uppingham: 25 occupiers, 1s. each. The Ransome prize of one sovereign for the best cultivated allotment in any of the fields, awarded to James Nutt, Church field, Uppingham. These allotments were set out in 1844, and although this is only the third year it has been under the system, by the industry and perseverance of the labourers upon poor and exhausted land, its cultivation has arrived at this pitch of excellence to merit the prize for the best cultivation, in competition with all the other fields, several of which have been under the system from the years 1830 and 1831. Some of the gentlemen who had watched the progress of the system from its commencement, bore ample testimony to the importance of its arrangements and annual examination, and to the progressive increase in production. One fact is worthy of notice, that the last year, in some of the allotments upon poor land taken out of Exton Park, from 8, 9, to 10 bushels of barley were grown upon half a rood of ground, 6, 7, to 8¾ bushels of beans, and 6, 7, to 8 bushels of wheat. This year the judges were of opinion that the wheat crops generally would excel in quantity and quality the produce

of former years. It was also remarked that if the average of each family was five in number, 1000 of the population in the county are thus benefited in no small degree. It is certainly a most desirable feature in the allotment system that, notwithstanding it has been in operation from the year 1830, and has gradually increased up to 1844, until they amount to 198 in number, only one man has lost his occupation for dishonesty, and he was reinstated in three years." I intend, Mr. Chairman, to conclude these imperfect remarks by stating that in consequence of the Royal Agricultural Society declaring that one of its objects was the amelioration of the condition of the labouring classes, Mr. Baker sent to the council a full report of the proceedings connected with the small allotments, from their commencement to the year 1842, in the hope that the system might be adopted by that society on a scale of magnitude commensurate with its importance; but I am not aware that anything useful has arisen out of the communication.

Mr. SWIFT said the observations made by Mr. Beadel as to ploughing eight times for a fallow crop appeared to him to call for some comment. He had never in his life heard of eight ploughings, and he must say that a farm was indeed badly cultivated if the occupier was obliged to plough eight times in order to obtain a crop of turnips. He maintained that three ploughings, if well performed, would be sufficient for any land in England. He would like to know what kind of land should be forked.

Mr. THOMAS confessed that he, like the preceding speaker, could not understand what Mr. Beadel had meant by talking of eight ploughings for turnips. He had never heard of more than five previously; he never gave more than three himself, and the tilth had always been so good that in the course of twenty-one years' experience he had never lost one rood of land by fly in the turnips.

Mr. BEADEL said one of two things must have happened: either Essex as an agricultural county had been blotted out of the map of Great Britain, or his friends who had just spoken were not in the habit of travelling out of the locality in which they happened to vegetate. He undertook to say, that if they went to Essex they would find his statements fully borne out by the practice which prevailed there, as well as in Suffolk. In those counties it was not at all an uncommon thing to give six, seven, or eight ploughings or tilths for turnips. His friend Mr. William Hutley, who was a very good farmer, constantly ploughed his land eight, nine, or ten times. That arose from the nature of the soil. Farmers are not so blest in Essex as in Bedfordshire; nature had not there been so bountiful; the farmers did not possess the advantages arising from deep cultivation and digging, or thorough draining. If the land was thoroughly drained you might plough it. He had tried his own plan both on heavy lands and on light ones; and though it could be carried out better and more conveniently on the latter than on the former, yet if they thoroughly drained heavy land they would find, as a general rule, that out of the four months over which the work extended their men might be employed during three.

Mr. W. SHAW inquired whether Mr. Beadel carried out his system over all his fallows?

Mr. BEADEL replied that he did that so long as he could get men. He would recommend them, as farmers, so long as they had unemployed labour at command, to use it in this way rather than send men to the workhouse.

Mr. BENNETT, of Luton, Bedfordshire, inquired whether Mr. Mechi recommended subsoiling in or near a chalk?

Mr. MECHE said his practice had not extended to that. But his observation of Mr. Hewitt Davis's practice was, that by bringing up about an inch of chalk once a year the chalk became disintegrated and lost. Thus the breaking of the soil by the plough became advantageous to the crops, and the soil itself was less liable to be burnt up in hot weather.

Mr. BENNETT: I have only a few words to offer relative to the subject under discussion, which is, I think, a very useful one in all its bearings. There seems to be some misunderstanding in reference to the different points brought before us. It strikes me that the observations of Mr. Mechi were, on the whole, exceedingly judicious; and I go to the full extent with Mr. Thomas in saying that I never heard Mr. Mechi with greater advantage. The remarks made by Mr. Beadel in reference to the digging and ploughing of land appear to me to admit of considerable question and comment as to how far his plan is practicable with reference to our means, and with reference to the return; which is, after all, the great point on which the whole thing turns. Nothing should be done, especially considering our present prospects, without reference to the question of expense. All I know is that at four different periods of my life I have had land which has had something in it that has bothered me in ploughing; I have then been under the necessity of resorting to the manual labour of digging, and very sick I have been of it (laughter). The expense was almost endless. I first ordered a new plough of extra strength to get through the work, because my men were thoroughly unable to cope with the difficulty, and the thing became exceedingly costly. So far from considering it practicable to carry out forking and digging, I have absolutely been ridiculous enough to take the plough into my back garden. Instead of taking the fork and the spade into the field, I have taken my plough and horses into the back garden (Hear, hear).

Mr. MECHE: Shame, shame (laughter).

Mr. BENNETT: By that means I have gone through the work a great deal quicker, and much more to my own satisfaction (cheers). In the experience which I have had of farming, which has extended over thirty to forty years, I have never seen the practicability of resorting to digging and forking on anything like the cheap scale which is necessary to enable us to produce corn for the people. From that point I will never be driven. As soon as parties can show me that they can do the work cheap enough, I am not so prejudiced but that I shall be very willing to try the system; but all my experience, so far, is diametrically opposed to digging. I appeal to the chairman, who lives in one of the best districts for

soil in Bedfordshire—a district which the late Mr. Foster used to call the garden of Bedfordshire, and in which land lets as high as four or five pounds an acre—whether the gardeners there do not introduce the plough into their gardens, and whether they do not state that they find the plough more economical than digging? (Hear). The biggest half of the garden plots in the parishes of Sandy and Garford are being ploughed; and, in many instances, parties plough two feet deep much more cheaply and advantageously than they could dig. I must, therefore, pause a little before I consent to set aside the plough, and before I employ men first in picking about with the fork, then in something else, and then send them back again into the field. The moving about of the ploughs, the horses, and the men, must be attended with great inconvenience, and I think we should soon be tired of it. In the case of a farm of any size, if the thing be practicable after the wheat sowing is done, the best course would be to employ a given number of men and one plough. Without this, there would be a great loss of time in removing the plough from one part of the farm to another, and in supplying men. As a practical man, Mr. Beadel must be aware of the inconvenience to which his plan gives rise.

Mr. BEADEL: I have tried it ten years, and I have found no practical inconvenience.

Mr. BENNETT: I can only say that while I feel much indebted to Mr. Beadel for his lucid observations on the subject of forking, he has by no means convinced me of the practicability of his plan as a paying operation; and while I see that in the best cultivated districts, where, when I went to school, digging was practised, the improved iron plough has been substituted on it, as much more economical, I cannot but think that by resorting again to digging, we should be going back half a century, instead of availing ourselves of the science and information at our command (Hear, hear). However desirable it may be to employ all the labour that you possibly can employ, that can only be done so far as a profitable return can be secured (Hear, hear). With regard to the observations of Mr. Cheetham, let me say that I have no doubt of the advantages of cottage allotments; but we did not see the whole matter exhibited by him. He did not show the relative value of crops grown after the plough, and crops grown after the spade. We all know that good crops can be grown by spade cultivation; but it does not follow that they are equally good with crops grown after the use of the plough. I could plough a great deal cheaper, and go as deep as the forks for half the expense which forking involves. When I hear of digging 14 inches deep, at 2s. or 26s. an acre, I am staggered by the statement. I have never been able to get land dug at anything like so cheap a rate. In most instances it has cost me from 50s. to 70s. an acre, to work the land well with the spade. Of course much depends on the nature of the soil. On light soils it would be best. On the whole I confess I have been edified by the discussion; but I must say that I think you would be doing wrong, were you to come to the conclusion that either fork or spade cultivation is preferable to the plough in deep cultivation. I am not sure

that it is an advantage to go very deep unless you apply an increased quantity of manure to the soil. The advantages of deep cultivation with plenty of manure are obvious.

Mr. PETER LOVE said—My practice as a farmer in connection with this subject has been rather extensive. I have subsoil-ploughed land in England, Scotland, and Ireland, during the last 15 or 16 years, having every year done from eight to ten acres, and in some years as much as twenty; and I have not seen any instance in which it has acted deleteriously where the land was either naturally dry or perfectly drained beforehand. I have indeed seen many instances of land being made perfectly barren, which before was tolerably fertile, by being subsoil-ploughed before it was drained. I have also seen some instances of land being made dry which was formerly wet by being subsoil-ploughed without being drained. I cannot go into my experience in this country in reference to subsoiling. I have done it all with the plough and with horse labour, pretty much in the way which Mr. Meech has described. I have generally used four, five, or six horses in subsoil-ploughing, and the average depth has been from eight to ten inches with the first plough, and about the same with the second. I have found some land which was proof against the subsoil-plough. I have found a stratum running across a field which no plough could touch; even the pick-axe could not touch it; and I have in that case been obliged to drive an iron bar into it, and get two or three men to wrench it up. That was a soil of rotten pudding-stone. But what was the result. Why, it was by cutting through that very stratum that the whole field was drained. I have never experienced any disadvantage whatever from deep cultivation, where the land has been ploughed before; but in some soils I have experienced considerable disadvantage from ploughing very deeply before subsoil-ploughing. There are some soils which it would be injudicious to plough. When you get a sandy soil, and the soil gets poorer the further you go down, the atmospheric influence has not the power of decomposing the matter which is upon it, the sun and air have not the power of fertilizing to the same extent as on other soils. The soil I have found the greatest advantage in subsoil-ploughing in Northamptonshire is a rotten stone, with certain proportion of carbonate of lime, but generally containing a large amount of protoxide of iron, which gets more oxidated as it comes nearer the surface, and eventually becomes soil. To prove it, I took a stone which was very hard, and placed it on a piece of slate, in order to observe how far it decomposed by the action of the air upon it, by being wetted and dried alternately; ultimately it all became soil. I mention this to show that in the case of some soils it is very injudicious to throw away all the stones which are ploughed up in deep ploughing; because you are, in fact, throwing away a portion of that which, if left to decompose, would eventually become soil to your advantage. I have experienced great disadvantage in subsoil-ploughing dry soils when they were wet, because clay when wet becomes a running substance, and is more tenacious than before. By practical experience I have found that the

clay when removed actually becomes less porous than it was when it was left undisturbed. I must now allude to the description of plough which I consider preferable. I am myself an advocate for a light instrument; but by that I mean an instrument light of draught. A plough which is very light will not face a stony soil, because its own weight is not sufficient to overcome the friction occasioned by the continual jolting. Thus, for instance, a gig travelling on a road will jump over a rut while a heavy waggon will always bottom a rut. The Deanston plough is made of a weight varying from 500 lbs. down to 100lbs. I have used ploughs of all weights, down to 110lbs. I tried one of 110lbs. with eight horses in it; it was quite strong enough, but the horses could not draw it; I then got one of 480lbs., and eight horses worked in the same field with ease, because it always kept its position of cutting along horizontally, whereas the light subsoil-plough was always running its nose downward into the soil, perhaps at an angle of 30 deg.

Mr. MEECH: Did you try the wheel?

Mr. LOVE: I always use the wheel.

Mr. MEECH: Did you ever try the fork?

Mr. LOVE: I have never tried it, but I am sure that if a mode of employing labour judiciously and profitably be distinctly laid down, so long as any man uses a flail he has no right to say anything against digging with a fork. The fact is, we want to use machinery for the purpose of preparing the material we produce for the market, and to employ men in growing their own bread. I think we have no right to grumble at Mr. Beadel for bringing forward a method of employing labour after it has been decided in this club that thrashing machines should be done away with.

A MEMBER: When was that done? (Hear, hear.)

Mr. LOVE: I don't say it was done, but it was nearly done. For my part, I think it would be much better to employ thrashing machines in producing corn for the market than to employ men in thrashing corn, and men and horses in subsoiling with the plough. Certainly, labour is a very important item in the farmer's annual expenditure. By using an engine for thrashing, you do away with horse labour, and by employing men to use the fork, you save the same item of expense. Mr. Beadel's plan appears to me, in some respects, a very good one. On all soils of a gravelly nature, or soils in which there is a considerable proportion of stone and gravel, his system may be a very good one; but, at the same time, I believe the work can be done cheaper by horse and plough (Hear, hear). I object *in toto* to Mr. Beadel's placing one digging and one ploughing and scuffling against six ploughings. I stand here to assert that never since I have been in England have I ploughed a fallow twice. I have always cleaned it with the scuffler; and, according to the cleanliness or foulness of the land, has a greater or smaller number of scufflings been required. I want to keep the scuffling going, in order that what is on the top may not be turned into the ground to vegetate, and that it may never come up until I have an opportunity of eradicating it. Even where there are good ploughs, if there be no scuffler I generally find the farm dirty.

Mr. W. SHAW, of Northamptonshire, corroborated

the statement of Mr. Love. He said: I plough many fallows only once. After harvest I pare the surface of weeds with a broadshare; then plough the land once, and I do no more to it except with the scuffler. I cannot conceive it possible that anything like six ploughings are necessary. As to strong land, I contend that before the wheat crop is sown the fallow should be dunged for the next year, and should not be trenched again until the turnips are drilled into the ground. How six or eight ploughings can be brought into operation, I cannot imagine. In the case of land which is well ploughed and drained, I do not see how Mr. Beadel's plan can be either economical or expeditious.

Mr. J. C. NESBIT said: Whether you use the spade, the plough, or the fork, is immaterial to me. All I wish to show is, that a certain action will take place on the land if it be stirred, which will not otherwise take place, and that this action varies according to circumstances. You are perfectly aware that the atmosphere, which contains certain chemical properties, acts very powerfully on the surface of rocks; and if those rocks, through being powdered or pulverized, present a larger surface to the atmosphere, the atmospheric action is, of course, proportionally increased. It is clear that our soils have been formed by the disintegration of rocks beneath, by the atmospheric action on the subsoils, and that the subsoils become pulverized and lightened by the atmosphere, and thus continually constitute surface soils. The question, then, arises whether it be not possible to assist nature, and, by mechanical means, to expose to the action of the atmosphere a greater amount of the surface soil than would be exposed without such interference. This may be done by stirring the soil. I apprehend that under the old system the use of fallow was merely to expose the surface of the land to two years' action of the atmosphere in order to obtain one year's crop; and under the new system of cultivation, in which we are eschewing fallow altogether, we ought to use some other means to secure an equal amount of atmospheric action upon the soil. Before I go into the mechanical working of the soil, I must deal with the question of draining. It is impossible for the atmosphere to act upon the soil, however much you stir it, if that soil be filled up with water; for in that state of things the air cannot operate. The first point, then, is to drain the soil; and if your drains act well, the deeper you go the better. I know that in some soils the drains will not act. Supposing the lands to be properly drained, you then have to follow by deep cultivation; for, in the case of anything like deep draining, deep cultivation must follow it. In this deep cultivation you must take into consideration every particular connected with the nature of the soil. It will not do to plough too deeply at first. Many soils are so constituted, that if you bring the subsoil to the surface, there will be a deleterious action upon the vegetables growing there which will have the effect of impeding their growth for years; and this may be expected to arise when the subsoil contains a large amount of protoxide of iron. But this cannot happen if, when you have ploughed to the usual depth, you use the subsoil plough, and merely stir the soil without bringing it to

the surface. By deepening the ploughing a little every year you will gradually get a much larger proportion of soil which is capable of producing vegetable life. Therefore, upon all soils the deeper the cultivation the better. Reference has been made to chalk soils; and I have no hesitation in saying that deep cultivation on chalk soils is attended with the greatest amount of benefit. In support of this view, I might refer you to Mr. Huxtable's experiments, which, though they are not the experiments of a practical farmer, are certainly those of a gentleman, who, by means of his experiments has conferred very great benefit upon agriculture. (Hear, hear). But I prefer referring to the experience of Mr. DREWITT, of Guildford, who farms upon chalk; and who, by subsoiling twenty inches, and ploughing eight or ten inches, has produced crops which are an example to all the neighbourhood, and rank Mr. DREWITT as one of the first farmers in Sussex. (Hear, hear). My personal observation goes to show that no soil ploughs so well for deep cultivation as chalk. As to continuous ploughings, the question is altogether one of pounds, shillings, and pence. (Hear, hear). Some soils will turn up far more advantageously than others. Mr. HUTLEY has told me that he uses four ploughings for his mangel wurzel before Christmas, and leaves the soil exposed throughout the winter and spring; and upon his farm I have seen finer mangel wurzel crops than anywhere else in the south of England. Recollect that the good or bad effects of ploughing on land, or of deep cultivation, must depend very much upon the natural constituents of the soil. I need not tell you that soils differ very much in their constituents: and on some poor and barren soils only a very slight amount of benefit might result from the disintegration of the material. There are in Norfolk some light sandy soils which you could not subsoil at all. So exceedingly light are they, that the less they are stirred the better. A most singular power is possessed by porous bodies of absorbing gases from the air; for instance, one cubic inch of common charcoal will absorb ninety cubic inches of ammoniacal gas. When a large amount of surface is exposed, the absorbing power is proportionably great; so great, indeed, that if you take a piece of spongy platinum, which is very porous, and put it in the stream of a gas pipe, so much of the gas in the air would it absorb, as to set light to the gas used for domestic purposes. This is a most important point to consider in connexion with agricultural pursuits. It is by the fineness of the tilth, and continuous exposure to the atmosphere, and ploughing in dry weather, and not in wet weather, when all the pores of the soil are filled; it is by such means that you will do as Jethro Tull did, who was of opinion that by the exposure of a surface sufficiently large, you would not want any manure at all. However you may dispute about the mechanical means of stirring the land, it must be drained; and you must make the soil soluble by bringing atmospheric action to bear upon it. You will thus be able to grow a greater quantity of crop than you could by means of a two or three inch cultivation.

Mr. LAWRENCE said: I quite concur in what has been said as to the advantage of deep tillage, and beg to

express my obligation to Mr. Love for the information which he has given us. By deep tillage we get more general warmth carried down into the lower surface by means of the drains, and that I consider an important object. Again, all our manures contain a great many soluble substances, and these are by the rains washed below the surface. With reference to the description of plough, let me say that I use Read's subsoil plough, with a pair of horses; and if the horses are properly adjusted to the plough, with an experienced ploughman, I find no difficulty in attaining the proper average depth. We meet continually with stones of from fifteen to twenty inches in diameter; and we throw them up without any difficulty whatever. My plan is to use the common plough as deep as it will go—say, from five to seven inches—and to follow that immediately with Read's subsoil plough, with a pair of strong horses; and by this means I find the work no greater than for the first plough. Thus I get twelve inches deeper, at a less expense than I could by forking. Mr. Beadel's observations as to the effect of his system on the poor-rates may be perfectly true; but I cannot believe that any method is cheaper than one by which you accomplish a depth of twelve inches by means of a pair of horses.

Mr. C. LOVE: Where I have seen Mr. Read's subsoil plough tried upon rocky land, it has certainly failed.

Mr. MECCHI: Mr. Lawrence's soil is the laminated limestone rock. Yours (addressing Mr. Love) is the pudding-stone, which extends sometimes for yards. There is no comparison to be drawn between the two.

Mr. W. F. HOBBS: I have listened with considerable attention to the remarks which have fallen from the several speakers. I was particularly pleased with those of Mr. Mechi, and his able advocacy of deep cultivation. Mr. Mechi seems to be of the same opinion as myself—namely, that deep cultivation is the foundation of good farming, but that it cannot be carried out without sound and deep drainage. I must say, however, that I was rather surprised that he did not go more into the comparative merits of the plough, the spade, and the fork. I know full well that we have crotchets in the county of Essex, and we have had a particular proof of that tonight, in the statement of Mr. Beadel that the fork is an effective instrument in the subsoiling of the land. I differ from my friends respecting it, though I am persuaded, from experience, that it does its work exceedingly well. But I cannot, as a friend of agricultural improvement, advocate the use of an instrument which for a great number of years was the common instrument of manual labour, when placed in juxtaposition with the science of the present day, and the improved machinery which has been brought into operation in farming (Hear, hear). I cannot believe that an instrument like the fork or the spade will bear comparison with the plough and other improved instruments which have been brought to bear on the deep cultivation of the soil; and in all the experience which I have had of the fork, I could never find that, with regard to expense, it could at all compete with the plough. I myself have subsoiled in the same field both with the plough and with the

fork. I have used Read's subsoil plough at a cost of less than £1 per acre, whilst the other operation has cost me from 40s. to 45s. per acre; and I defy any gentleman who may walk over that field, which was subsoiled three years ago, to point out to me the advantage of the fork over the plough. I feel persuaded that where there is a surplus number of labourers, and where manual labour can be obtained advantageously, it is desirable to employ as many men as possible. That is a point which we ought to consider more than we do in the present day; for, in the present distressed state of this country, unless we employ our labourers we cannot expect that the country will long remain in a peaceable and quiet condition. If, for a difference in expense of only a few shillings an acre, we can bring the fork into operation instead of the subsoil plough, it is in my opinion our duty to do so; but as a practical farmer, I cannot believe that as a general rule the fork or the spade can at all compete with the plough. There is one remark of Mr. Beadel's which, as an Essex farmer, I cannot suffer to pass unnoticed; namely, that we there give eight or ten tilths as a preparation for root crops. I can only say that I never in my life heard of its being done upon any farm in Essex; at all events, it is not common in many districts. Mr. Beadel, as a land agent, is more experienced than I can be, and the thing may be done in his own locality; but I can assure him that in my neighbourhood I never saw or heard of the practice. And I will say further, that in the district where it is carried out, there cannot be much acquaintance with the improved implements of the day. The remark of Mr. Mechi, that the thanks of the country are due to Mr. Smith, of Deanston, for having brought out his subsoil plough, appear to me to be perfectly just. I think he did much, in his day, to forward the present improvement in agriculture, both by drainage and by deep cultivation. Though I differ from him most decidedly with regard to shallow drainage, and also in reference to his subsoil plough, yet I do think that great credit is due to him, and that this opportunity ought not to pass without our thanks being given to him for his foresight and skill in bringing out the subsoil plough in the manner he did. I cannot believe Mr. Mechi is right in advocating the use of the Deanston plough in the present day. Mr. Read's plan, wherever tried, has invariably superseded it; and if Mr. Mechi will come to the Agricultural Society's Show, and see the variety of subsoil ploughs tested, he will find two, three, or four subsoil ploughs which, for general purposes, are much superior to Mr. Smith's. Although upon some strong soils the common Read's plough now in use may not be strong enough, still the principle upon which that plough is constructed is far superior to that of the Deanston plough. The subject of deep cultivation is one of great importance. If we are to produce large crops, and have but small returns for them, we must look about us, and endeavour to cultivate deeper. That involves another question, namely that of the employment of capital in the soil. On the whole, I am of opinion that the committee were wise in determining that this subject should be discussed. Though while we are here advocating agricul-

tural improvement, but little encouragement is given to us for the investment of capital in the soil; yet I do hope that brighter days are dawning, and that we shall have all the encouragement for deep cultivation, the employment of the subsoil plough, and the effecting of agricultural improvements generally, which may be necessary to ensure success.

Mr. LAWRENCE: In the prize essay in the Royal Agricultural Society's Journal, mention is made of eight, nine, and ten ploughings in Essex.

Mr. W. F. HOBBS: The prize essay for the county of Essex, which appeared in our Journal five or six years ago, contained particulars as to many of the old systems of husbandry carried out in Essex; and although our friend Mr. Baker, the author of it, thought proper to give the customs of the different districts rather than to express his own views, still I am not one of those who would admit that where good farming is carried out, the custom of Essex is such as we have heard described.

Mr. MECCHI, in reply, said he was glad that the subject of deep cultivation had received such ample discussion. However his friend Mr. Hobbs might gloss over the practice of Essex, ploughing six, seven, or eight times with the summer fallow was a common occurrence.

Mr. HOBBS: I deny it.

Mr. MECCHI continued: There could be no doubt that it was rendered in some degree necessary by the almost total absence of drainage upon the heavy soils of Essex. The soil was broken up into such broad masses that, in the absence of Mr. Crosskill's roller, that number of ploughings was necessary to reduce the enormous and stubborn clods by atmospheric exposure. Seeing the thing every day, he could answer for that. His friend Mr. Thomas objected to the great and strong horses, and the strong chains and other things necessary to plough stubborn and heavy soils, 16 inches below the common plough. It was with very great regret that he said he objected to the present form of farm horses owing to the feeding of them on straw, and on large quantities of grain food. When corn and hay were substituted for the present inefficient mode of feeding, there would be no difficulty in obtaining animals with muscular forms, adapted to the draught of strong heavy ploughs. He had had no difficulty in working his heavy subsoil ploughs with the very horses which he found upon the farm when he first took possession. Whatever advantage might be derived from subsoiling with the fork, he maintained that Mr. Beadel could never use the fork with advantage in yellow, soapy clays in the winter season. As to Mr. Read's plough, however great might be his respect for the judgment of Mr. Hobbs, he must say that upon such soils having regard to depth was a toy in comparison with the Deanston plough. With the Deanston plough they could do sixteen inches below the common plough; with Mr. Read's plough the utmost depth which they could obtain was from six to seven inches.

Mr. HOBBS: You are wrong.

Mr. MECCHI: Can you go deeper with Mr. Read's?

Mr. HOBBS: Yes; ten or twelve inches if you like.

Mr. LOVE: I have never seen any go deeper than seven inches.

The CHAIRMAN, in closing the discussion, said, it struck him that it did not do to compare the expense of spade or fork cultivation with cultivation by the plough. They must not, however, throw cold water on the observations of Mr. Beadel. He (the chairman) resided in a pauperised district, which had a large quantity of surplus labour, and in which it was necessary to invent expedients to keep labourers from the workhouse. He looked upon Mr. Beadel's plan rather as an expedient to be adopted in certain cases than as one for universal adoption. Any one who cultivated upon Mr. Beadel's system to a great extent would not, he thought, succeed in obtaining a profitable return. He quite coincided in Mr. Nesbit's observations. Two or three years ago he attended a lecture delivered by Dr. Playfair in reference to the advantage of turning over the soil in order that it might have the benefit of exposure to the atmosphere. At that time a field in his parish was left on his hands as an assignee. No manure was applied; but there being horses upon the ground it was ploughed several times—five times he believed. When the valuers came, they said, "We shall not give you more for your five ploughings than we should have done for three." The price was accepted; but what was the result? Why, that the field produced the finest crop of corn that was ever seen in the parish.

Upon the motion of Mr. HOBBS, the following resolution was then agreed to:—"That this meeting feels strongly impressed with the importance of the deep cultivation of the soil; and although they consider that the fork and the spade are effective instruments for the operation of subsoiling, yet that the same may be generally carried out by the plough with greater economy, expedition, and advantage."

The CHAIRMAN said he hoped the meeting would not separate without first recording its sense of the able manner in which Mr. Mechi had introduced the subject for discussion. He begged therefore to propose a vote of thanks to that gentleman (cheers). Mr. W. Bennett seconded the motion, which was put and carried by acclamation, and afterwards briefly acknowledged by Mr. Mechi.

Thanks having also been passed to Mr. Pain for his able and impartial conduct in the chair, the meeting separated.

ON SOWING GRASS SEEDS.

SIR,—Now that the conversion of arable land to pasture is becoming so frequently necessary, a few practical hints may not be considered ill-timed from one who has paid particular attention to the subject. The common practice of sowing only one kind of grass, the rye-grass, with clover is very defective; a considerable variety is necessary for the complete and permanent occupation of the ground, to the exclusion of the couch and other grass weeds; and these should be adapted to the nature of the soil. The *Alopecurus pratensis*, for example, of the greatest value in some few soils, would be thrown away upon others; the selection is best left to the careful seedsmen.

The land should be in good measure freed, by fallowing, from such root weeds as thistles, docks, and couch-grass, which it is

so difficult or impossible to remove from pastures; annual weeds, and such perennials as the field sow-thistle (*souchus arvensis*), which will not long exist among grass, may be safely left to shoot up, and then, if desirable, removed with the scythe. I consider the spring the most favourable season for sowing; the autumn sowing sometimes fails, especially on bleak lands; the spring sowing will furnish a strong plant the following year. A thick plant will be obtained by sowing the grass seeds alone without corn, if economy should require it; otherwise a few more seeds sown the following spring, and trodden in with sheep, where the land is dry, will supply deficiencies.

Care should be taken not to cover deep by harrowing—much seed is lost in this way. A roll and light bush-harrow will supply covering enough; indeed, in a showery season it is best to leave the seed on the surface to be washed in. What

is called a fine "season" is essential; repeated rollings in dry weather, when the plant is well up, are beneficial. It is hardly necessary to say the same of top-dressings of ashes, guano, or well-rotted manure.

The question of haying or grazing young grass seeds is still disputed; I am disposed to recommend the careful feeding with sheep or young stock after the plant is well established.

The study of the pasture grasses, begun by the late Duke of Bedford, and carried on so perseveringly since, now points out the method of a rapid and easy conversion of lands, when exhausted by repeated ploughings, to profitable and permanent pasture; in which condition they may accumulate fresh stores of nourishment for cereal plants, should a change in our position or an increased price encourage or demand their cultivation.

HENRY ROGER SMITHE.

Eastling, Faversham, March 23.

HINCKLEY AGRICULTURAL SOCIETY.

At the usual monthly meeting of this society, on 5th February, 1849, a lecture was delivered by Mr. John Ashford, an eminent surgeon residing in that town, to a numerous and respectable body of agriculturists resident in the neighbourhood, on

AGRICULTURAL CHEMISTRY.

After taking a review, in the earlier part of his discourse, of the objections taken to this branch of the science of chemistry, the Lecturer proceeded:

"But, further, it is necessary that something should be added to ordinary information. You must read a little, and learn a little; for you know 'that he who reads, and who brings no judgment to his reading, is like the child that gathers pebbles from the shore.' To understand what especially appertains to agricultural chemistry, you must keep in your mind's eye the basis: you must acquire a knowledge of the foundation to arrange the superstructure."

The essential elements, as they are called, viz., oxygen, hydrogen, nitrogen, and carbon, were then

spoken of; and their historical outline and properties were explained in a manner so that every one could comprehend their meanings and uses.

"I beg of you to bear in mind, that no element has yet been found in any living body which does not also exist in inorganic matter."

One portion on *oxygen* we must needs transcribe, relating to the history of its discovery:—

"With oxygen is associated the name of Priestley; a man who, under the most disadvantageous circumstances, made, singly, more important discoveries than any other chemist; who was subjected to, and hunted down by, a spirit of persecution and bigotry; and was obliged to fly from this, his land, to seek a home amongst better men."

The tribute to the memory of Priestley was concluded by the following emphatic sentence:—

"Recollect this happened less than eighty years ago."

Carbonic acid gas was then reviewed; and its history and properties examined. With regard to the first of these, we quote:—

CHEMICAL TERMS.	COMMON NAMES.	HISTORICAL OUTLINE AND PROPERTIES.
CARBONIC ACID GAS.	Fixed air. Choke damp.	Discovered by Dr. Black in 1757. Carbonic acid gas is separated from limestone by means of heat. Lavosier demonstrated its nature and composition. It is formed during respiration, fermentation, and combustion. Its relative proportions are 28 parts by weight to 72 of oxygen. Carbonic acid gas exceeds in weight almost every other, and is almost twice as heavy as atmospheric air. It is unfit for respiration. It is this gas which suffocates persons who incautiously descend into vaults, wells, or pits, where a lighted candle will not burn; hence it is called choke damp. It is always present in the atmosphere; and plants purify the air by withdrawing carbonic acid from it, and in return yielding oxygen.

CHEMICAL TERMS.	COMMON NAMES.	HISTORICAL OUTLINE AND PROPERTIES.
<p>OXYGEN. Name proposed by Lavoisier; he considered it the cause of acidity.</p>	<p>Dephlogisticated air. <i>Priestley.</i> Empyreal air. <i>Scheele.</i> Vital air. <i>Coudorcet.</i></p>	<p>Discovered by Priestley in 1774, and by Scheele soon after, without the previous knowledge of Priestley's discovery. Oxygen gas is absorbable by combustible bodies and converts them into oxides or acids—an almost indispensable condition of combustion; is highly necessary for the respiration of animals; is obtained from oxide of manganese, nitrate of potass (saltpetre), and from oxy muriate of potass in a state of purity. Oxygen, combined with hydrogen, forms water. Oxygen is a non-conductor of electricity—is heavier than atmospheric air. All substances burn with great brilliancy in oxygen gas.</p>
<p>HYDROGEN. Because it forms water.</p>	<p>Inflammable air.</p>	<p>Its nature and properties first pointed out by Mr. Cavendish, in 1766, recently said to be the discovery of that great genius James Watt. Hydrogen gas is the lightest substance in nature. Two parts hydrogen to one of oxygen, united chemically, form water. Sir I. Newton conjectured from its great refracting power that water contained a combustible substance. Hydrogen gas is easily procured by passing the vapour of water over red-hot iron; or by putting iron filings or zinc granules into a common retort, and pouring upon them a little water and sulphuric acid.</p>
<p>CARBURETTED HYDROGEN GAS.</p>	<p>Inflammable air of marshes Heavy inflammable air. Fire damp.</p>	<p>When mixed with atmospheric air occasions dreadful explosions; the sole products of these explosions are water and carbonic acid. Carburetted hydrogen gas often issues in large quantity from between beds of coal; and, by collecting in mines owing to deficient ventilation, mixes with atmospheric air and forms an explosive mixture (see art. "Lamp, Safety;"—<i>Penny Cyclop.</i>). It is this carburetted hydrogen which is used in lighting streets and thoroughfares.</p>
<p>NITROGEN.</p>	<p>Mephitic air. <i>Rutherford.</i> Azote. <i>Lavoisier.</i> Phlogisticated air. <i>Priestley.</i></p>	<p>First shown in 1772 by Dr. Rutherford. Lavoisier and Scheele afterwards proved it to be a constituent part of the atmosphere, in the proportions of 78 or 79 to 100; its great use in which appears to be a diluter of oxygen. When united in other proportions, viz., 70 in 100, it forms nitric acid, <i>i. e.</i>, aquafortis. Nitrogen may be obtained from animal substances, but more generally, for chemical purposes, is procured in decomposing atmospheric air by lighted phosphorus. It is hurtful to respiration, and quickly kills animals. It generally occurs in hot springs. Uniting with hydrogen, under certain conditions, forms ammonia or "volatile alkali." "Animals will not live on food which contains no azote."</p>
<p>CARBON.</p>	<p>Pure charcoal.</p>	<p>Pure inflammable principle of charcoal: impure in coke. Lavoisier first proved the diamond to contain carbon; he fused it by concentrating the sun's rays on a powerful lens in a vessel of oxygen gas. The diamond and charcoal are chemically the same substance. Tainted water and meat are rendered fit for use through this, in combination with sulphuric acid.</p>

The extract we have given is from a syllabus copies were placed in the room, with the intention compiled by the Lecturer some years ago. Several of bringing more forcibly to the minds of the

hearers what he very piquantly called "the A B C of agricultural chemistry."

The more ordinary combinations which take place between earths, acids, and alkalis were then referred to and explained; together with the definition of "chemical attraction, or affinity."

CHEMICAL TERMS.	COMMON NAMES.	COMPOUNDS.
1 SULPHURIC ACID	Oil of vitriol.	with Potass forms Sulphate of Potass (polychrest salt).
2 Ditto	Ditto.	with Soda forms Sulphate of Soda (Glauber's salts).
3 Ditto	Ditto.	with Lime forms Sulphate of Lime (gypsum, or plaster of Paris).
4 Ditto	Ditto.	with Magnesia forms Sulphate of Magnesia (Epsom salts).
1 NITRIC ACID	Aquafortis.	with Potass forms Nitrate of Potass (saltpetre).
2 Ditto	Ditto.	with Soda forms Nitrate of Soda (manure salt).
1 MURIATIC ACID	Spirits of salts.	with Soda forms Muriate of Soda (common salt).
2 Ditto	Ditto.	with Potass forms Muriate of Potass (explosive salt).
3 Ditto	Ditto.	with Lime forms Muriate of Lime (bleaching salt).

"AFFINITY, OF CHEMICAL ATTRACTION, is the basis on which the science of chemistry is founded, and is exerted between the minutest particles of different kinds of matter; so that, when they combine, new bodies are endowed with new properties. By way of illustration, two or three simple instances will afford a notion of what it comprehends. Thus, water and sulphuric acid combine readily; while oil and water show but little disposition to unite. In the first, chemical attraction or affinity is shown; in the latter, there is a want of affinity in the different bodies. Again, we may use, for example:

SULPHURIC ACID } Potass.
 } Soda.
 } Lime.
 } Ammonia.
 } Magnesia.

In this table sulphuric acid has a greater affinity for those substances placed in the order they are, and may unite separately with each. Ammonia will separate magnesia—lime, ammonia—and so on."

Then followed the distinctive differences in the animal and vegetable world; and as it was insisted on to be of the utmost importance clearly to understand, we subjoin what was said concerning it:—

"The great contradistinction between animal and vegetable life is this: that we inspire oxygen, which is carried through our bodies, in which progress it unites with the wear and tear that takes place, and so produces animal heat; for it is a consequence of the union of oxygen in the atmosphere with carbon that heat is evolved. It (oxygen), moreover, purifies or vitalizes the impure blood; so nourishment, health, and warmth are produced. The great source of this powerful element (oxygen) is the vegetable world. So while the vegetables give out oxygen, to sustain our bodies; we, in

return, constantly afford for them carbon, and its compounds necessary for their life and health, and to effect this all substances must go through the process of putrefaction and decay. So that it is said—'The first substance capable of affording nutriment to animals is the last product of the creative energy of vegetables.'

"THEORY OF LATENT HEAT.—Heat exists in bodies in two opposite states: in one it is supposed to be in chemical combination without its ordinary characters, and remaining quiescent; in the other it is free and uncombined, passing readily from one substance to another. Thus heat is always evolved, whenever a substance without change of form passes from a rarer into a denser state, and also when a gas becomes liquid or solid, or a liquid solidifies; because a quantity of heat previously combined, or latent within it, is then set free."

Allusion was then made to the immense quantity of land yet remaining uncultivated, or nearly so; and as remunerative and reproductive labour just now engages so much attention, we think we can hardly do justice to this lecture in omitting that part of it:—

"Forgive the presumption, but it will not be curbed. Here of itself is remunerative labour for twelve hundred thousand strong, robust paupers, now in 'union houses;' which places are, by strange perversion, called 'work houses,' where no work is done. Here are so many working men cabined and confined, while the Earth says, 'Come and till me! come and reap me!'"

Then as to *lime*:—

"Now lime is a substance which nature has largely supplied to effect the improvement of all bad soils; that is, presuming moisture be neither defective or in excess. It is found that lime has the greatest affinity for all acid combinations,

whether derived from the metals or from decayed vegetable matter. This is a complete antidote before you, for all that is noxious in soils. The lime renders the clay more soluble, the earthy salts are separated and are taken up by the plants; yet is chemistry nothing to your purpose? Are the plant investigations of that great and good man, Dr. Black, to be turned aside, with a sneer, as void and of no effect?"

"As to ammonia, what is it? Whence its source? How far does it appertain to agricultural chemistry? Ammonia is the alkaline air of Priestley, for he first procured it in a gaseous state. It is composed of hydrogen, the element of moisture or water, and of nitrogen, which we have called the diluter of oxygen in atmospheric air. In speaking of vegetable life it was said, that organic matter must pass through the process of putrefaction and decay in order to fit it for vegetable life. Now, ammonia is evolved from the putrefaction of animal and vegetable matter; and it is a singular circumstance that nitrogen, to be selected by plants to form vegetable gluten, must be offered to them in the shape of

ammonia; and that this peculiar combination of these two gases are not easily re-united when they have each assumed their gaseous state. Ammonia is found combined with muriatic acid; in this state it is called 'sal ammoniac.' It was formerly procured from the feet of camels, dung, and was an article of commerce. We detect its hartshorn smell in recently-made dung-hills; we scent it powerfully in closely pent-up stables. Volatile salt is a combination of ammonia with carbonic acid. The alkaline earths readily decompose ammonia; hence we see in this a double purpose is performed; the soil becomes ameliorated, and one of the natural elements of plants is evolved from the same substance. It is to be borne in mind that ammonia will not be of avail unless the earthy salts are in the soil. Nearly the same may be said as to lime. Lime is necessary so long as organic matter is retained in the soil; but lime alone will not do good unless manure has been previously afforded. In short, you must return to the soil what vegetation has taken away."

CLASSIFICATION OF SOILS.	Clay per Cent.	Sand per Cent.	Carb. of Lime per Cent.	Humus per Cent.	Value.	Supposed depth of Soil, six inches, Subsoil sound.
1 First class of strong wheat soils	74	10	4½	11½	100	1, 2, and 3 are alluvial soils; and, from the division and intimate union of the humus, are not so heavy and stiff as the quantity of clay would indicate. 4 a rich clay loam. 5 is very light and rich, and best adapted for gardens and not for corn; hence its comparative value can scarcely be given. 6, 7, and 8 are good soils; the quantity of carbonate of lime compensates for the smaller portion of humus. 9 to 14, lime or marl would be the greatest improvement. 15 and 16 poor light soils, requiring clay and much manure.
2 Ditto ditto ..	81	6	4	8½	98	
3 Ditto ditto ..	79	10	4	6½	96	
4 Ditto ditto ..	40	22	36	4	90	
5 Rich light sand, in natural grass	14	49	10	27	?	
6 Rich barley land ..	20	67	3	10	78	
7 Good wheat land ..	58	36	2	4	77	
8 Wheat land	56	30	12	2	75	
9 Ditto	60	38	2	2	70	
10 Ditto	48	56	very insignificant quantities.	2	65	
11 Ditto	68	30	2	2	60	
12 Good barley land ..	38	60	2	2	60	
13 Ditto second quality	33	65	2	2	50	
14 Ditto ditto ..	28	70	2	2	40	
15 Oat land	23½	75	1½	1½	30	
16 Ditto	18½	80	1½	1½	20	

* * * The last column, of comparative value, is the result of several years' careful valuation of the returns, after labour and seed have been deducted.

COMPOSITION OF SOILS.

Rich Soil.	PARTS.
Carbonate of lime	28
Siliceous earth	32
Alumina	29
Animal and vegetable matter	11
	100

Light Sandy Soil.

	PARTS.
Carbonate of lime	63
Silica	15
Alumina	11
Oxide of iron	3
Vegetable and saline matter	5
Water	3
	100

Loam.	PARTS.
Argillaceous sand	57.0
Finely-divided clay	33.0
Siliceous sand	7.4
Carbonate of lime	1.6
Woody fibre . . . . .	.5
Humus and soluble matter . . . . .	.5
	—
	100.0

Explanations.—Carbonate of lime (chalk); siliceous (quartz rock earth); alumina (clayey or potter's earth); argillaceous (clay).

“Again, as to loam or fertile earth. This, you see by the syllabus before you, is composed of clayey earth, lime, and siliceous sand or flint earth. These, in due proportions, form a soil capable of producing almost every species of plants fit for food; in other words, the mineral elements of plants are afforded. Beyond the carbonic acid the atmosphere gives, a fresh source of this carbonic acid is supplied to the roots, so that increased development of the plant follows. Soil must be brought to this state, or to one approaching it, before the improvers we have to speak of can be used with any probable chance of success. Heavy soils must be drained; their redundant moisture must be got rid of. To procure this, loam is the object of all the amendments you put to the soil: climate and moisture do the rest; and to compensate for wear and tear, salts or manure is added, and a fresh supply of loam results. Thus, the carbonic acid in it unites with the oxygen of the atmosphere, the elements are formed which are natural to plants; and so, by the aid of moisture, vegetable life is sustained. Here we see how it is by draining pits and bogs a noxious earth is left behind, and how readily this is corrected by adding lime; so that large quantities of fertile earth are at your service.”

The subject of liquid manure was then spoken of; for which the Lecturer confessed a predilection, to use his own words, “perhaps in this he was a little hobby-horsically inclined.”

“I mean by liquid manure, the application of

restoratives or fertilizers to the soil in a liquid state; and if liquid manure has its advantages, I propose the following method. I do not mean by liquid manure *merely* the drainings from dung-hills, the urine from cattle-sheds, stables, and pigstyes, nor the soap-suds from the wash-house. This is meant only the medium of solution for the various salts and substances to be afforded to your lands. But simply in the form of liquid manure it has great and useful properties. It contains all the salts you get in solid manure or rotten straw; and is said to be worth ten times as much. These salts it contains are the indispensables to fertilization; yet I believe it has been much neglected in this country. But let us suppose, however, that you object to the use of liquid manure; while you do so it will be well to bear in mind that in it you have a valuable medium for making an excellent compost by absorbing the fluid in the tank with sand for heavy soils, and by the same process with marl (which is a compound of clay-earth and lime-earth) for soils of a light or sandy nature.”

To this followed a ready mode of making the nitrate of soda in solution; the mode of preparing ground gypsum, so as to form the urate so extolled in France; and the phosphates were also recommended to be prepared after the same method. It was clearly shown, too, how farmers could make their own guano. The economy, nay, the preference for this mode of manuring land was stoutly maintained. Allusion was made to the discovery of coprolites by Dr. Buckland, in 1842, along the banks of the Severn; and a general review of the secretions of plants, their analyses, together with the recommendation that farmers should note down the results of their experiments for years in succession.

“The progress of science is, like the development of Nature's works, gradual and expansive. After the buds and branches, spring forth the leaves and blossoms; after the blossoms, the fruit.”

CHEAP MANURING.

No. II.

SIR,—Having put together, in your last, the best directions for the enlargement and improvement of the dunghill, that I have been able to collect, both from practice and science, let me again request those who try it, to take especial care of the urine and drainage from the heap, which are the *spirit* and *essence* of the manure; and to be also careful not to let water, whether rain or stream, get into it,

more than is required to keep it properly damp; keeping it covered from the rain, and turning the streams away from it. And after two years' trial, with these precautions, they will hardly need further recommendation to continue it.

We may now proceed with suggestions for

CHEAP MANURING.

The farmer well knows that the art of economical

manuring does not consist in using the lowest priced dressing, in the smallest quantities; but little farmers are not always aware of what it does consist in—namely, in appropriating the dressings to the course and crop, so that each crop shall have just what it wants, and not that which better suits another product. We must feed our plants, as we would our animals, with what nourishes them best. Give your dogs bones, and your cow clover; not waste bones upon your cow, and clover upon your dog. So if you are dressing for wheat, give it what wheat requires; and for mangel wurzel or carrots, vary the dressing accordingly.

Now it is just in learning what each plant requires, that the art of manuring has made the greatest progress of late years. And this I must first endeavour to make clear to the class of farmers for whom I am writing. To know how to feed up our plants, so as to get the heaviest produce, we must first know what they consist of.

If we burn a handful of wheat (or any other vegetable) we have, first, a flame; and when this is burnt out, there remains a skeleton of charcoal; and if we keep this red hot in the air, the charcoal itself burns away, and ashes only remain; but these are fire proof, and may be kept red hot for hours without loss. Thus the wheat seems to have been first reduced to flame and charcoal, and at last to ashes, the charcoal also having burnt away into the air. The quantity of ashes is very small, not perhaps two-hundredths of the plant burnt. But all the burnt part dissolves in the *air*, from which plants can get it again: while the small quantity of ashes will not dissolve in the air, and the plant can get them only from the *soil*. But they are quite essential to the plant's thriving, though in such small quantities; and it is chiefly in the proper supply of this small quantity, that lies the art of

CHEAP MANURING.

The combustible ingredients are, as will be immediately shewn, the same in all plants; but the incombustible ashes differ between one and another, so that whilst they cost little and are easily portable, it is of the first importance that each crop and course should have its right supply, as well in proportion as in quantity. It is right, however, that the farmer should have plain notions of the nature and distinctions of all these ingredients.

Although the combustible ingredients constitute the bulk of the plant (the ashes averaging not more than two-hundredth parts of it, as before said), yet they are the less numerous, consisting of only four in all, named *Hydrogea*, *Carbon*, *Oxygen*, and *Nitrogea*. The flame, which first appears, is due to the *Hydrogea*, or inflammable air; the charcoal is called in chemistry *Carbon*; and the other two, *Oxygen* and *Nitrogea*, are the ingredients of the air

we breathe. Of these, oxygen may be called the spirit of the air; as it alone supports our breathing and the burning of our fire and candles. Although it is only one-fifth of the air (the other four-fifths being nitrogen), yet if we extract the oxygen, a candle can no more burn, nor a man breathe, in the nitrogen, than under water. Thus, then, we have *Carbon*, the charcoal; *Hydrogen*, the inflammable air; *Oxygen*, not inflammable itself, but the necessary supporter of fire and of animal breathing; and *Nitrogen*, which will neither burn itself, nor suffer anything else to burn or breathe in it, and which seems to be mixed in the air (like water with brandy) because the oxygen alone would render fire so fierce as to be unmanageable, and would inflame our blood in breathing it. Yet it will be seen, by and bye, that this inert nitrogen plays a very active part in exciting vegetation.

It must be added that these four substances combine one with another, producing compounds of great interest in the growth of plants. Carbon, in burning, unites with the oxygen of the air, forming carbonic acid; which spreads through the air, and gives back its carbon to the leaves of the plants. Hydrogen, in burning, also unites with the oxygen, and forms water; falling again upon the plants in rain and dew. And nitrogen, though it will not burn, can yet unite with oxygen by other means, forming nitric acid; or with hydrogen to form ammonia; both of great importance in *cheap manuring*.

But whilst the constituents of the bulk of the plant are only *four* in number; those of the little residue of the ashes number no less than *eleven*:

- 2 alkalis—Potass and Soda;
- 2 alkaline earths—Lime and Magnesia;
- all which are pretty well known to the farmer, the magnesia chiefly as a medicine;
- 3 acids—Sulphuric, or vitriol;
- Muriatic, or spirits of salt; and
- Phosphoric, the acid of bones;
- 2 earths—Silica, fine sand or flint;
- Alumina, the soft element of clay;
- And 2 metals—Iron and Manganese.

These also generally exist in the soil in combination with each other. The acids are sour; the alkalis and lime nauseous and biting, but having the power of neutralizing the acids, and allaying the sharpness of both. Thus muriatic acid and soda, either of which would take the skin off our tongue, united form common salt; sulphuric acid, still more destructive than muriatic, forms with magnesia, Epsom salt; disagreeable enough, but not dangerous; and phosphoric acid, also sharper than muriatic, forms with lime the insipid white earth of bones. Silica constitutes the fine sandy part of most soils; and their clayey portion consists of si-

lica combined with alumina. Iron and manganese are united with oxygen, as earthy powders, whenever found in the ashes of plants, or in the soil.

We will conclude this with the remark, that whilst the number of these incombustible ingredients is so great, their quantity in the plant is

small (as before observed), and their influence upon its growth and products important and characteristic: hence their especial suitability for

CHEAP MANURING

as will more distinctly appear in our No. 3.

—Plymouth Herald.

J. PRIDEAUX.

TENANT-RIGHT.

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS,
WITH THE EVIDENCE.

(Continued.)

Evidence of Mr. WILLIAM BARNES.

CHAIRMAN.] You reside at Staplehurst in Kent?—Yes.

You have extensive practice as a valuer amongst farmers?—Yes.

Are you also an occupier of land?—Yes.

To what extent?—One thousand or 1,200 acres.

What is the rate of compensation for improvements as between the outgoing and incoming tenant in your part of the Weald of Kent?—We vary considerably in Kent.

Explain to the committee the different customs of compensation?—In the weald of Kent nearly everything is paid for. In the eastern part of Kent the custom is not quite so extensive; for instance, the dung is not paid for, it is the property of the landlord, and the tenant is paid for labour to it only; this difference does not exactly take place where the division of the county for other purposes is taken; I am speaking generally, there may be a few exceptions. We have another mode in what we term Mid Kent. In the weald of Kent, the payments made there to the outgoing tenant are for the underwood down to the stubb, the fallows, including rent and taxes and manures, and generally speaking half manures, but they are in some cases now being bought off by the landlords; hop poles, hay, straw, ploughings, seeds sown, dressings, young hops planted, seasons, and generally we pay for those things that we consider to be an improvement for the land, which the tenant incoming would derive the benefit of, such as striking up land to let off the water, and if the hop land is also struck up, and laid up round, to take off the water; that is paid for too.

Have you compensation for draining there?—Drainage has been introduced into the weald but a few years; when I say introduced, I mean generally; a great deal has been done within the last seven years, and the question very frequently arises when we go to take a valuation, whether or not the outgoing tenant could claim for the drainage. I have had it disputed in many instances, and lost it, if the tenant did not pay for it upon entering, and had no agreement to be paid upon leaving: but if left to ourselves as valuers, we always charge the incoming tenant with it, and in doing so, if it be wood, we allow four years to run out; if one year is fallow, it goes over another; if one crop is taken, we give three-fourths of the outlay; and if two, half; if three, one-fourth; and if four, nothing is allowed.

You are understood to say, that a valuer always does agree to allow for drainage if no objection is taken?—Invariably, we think it right to do so.

If objection is taken what happens then?—The outgoing tenant loses it unless he can show an agreement

specifically pointing out that he shall be paid for it, or paid for it upon intering upon his farm.

Is not that uncertainty rather a discouragement to the improvement of land?—Very great; a great deal of the weald of Kent requires it very much, as much as any part of England; it is not drained in consequence.

Is there any other kind of improvement, such as chalking, in the weald of Kent?—No; I never saw a field chalked in the weald of Kent; we have several other little matters that are paid for, we have sometimes things done in preparing our grass lands for years to come; the seed is occasionally paid for in those cases, and also that which is sown with artificial grasses for the next year's crop, that is paid for; we have in general in the weald of Kent, I think, as much paid for as any part of England, in passing from tenant to tenant.

Are you of opinion that draining would be extensively beneficial in the weald of Kent?—Yes on arable land.

Therefore would it be desirable that a tenant's claim for compensation on drainage should be rendered certain by law?—No question about it. I am often consulted about this matter; the tenants, anxious to drain, say, "Shall we be paid?" I say, "Show me your agreement," and if I find any provision absent, I say, "No; go and get an understanding with your landlord."

Are you able practically to judge by its effect upon your own farm of the good effects of drainage?—Yes, I have drained a good deal of what I occupy.

Have you increased the produce of your own farm by that?—Yes, decidedly, where I have underdrained.

To what extent do you think you have increased the produce?—I should think the increase would be nearly one-third on the arable land, not on the grass land.

Have you increased the corn crop by one-third?—Yes, I should think so.

When land is drained in the weald of Kent, do you stock it with sheep, or is it too strong; that is, will it grow root crops, and can those root crops be fed off the land?—No, very little in the weald will admit of that.

Not even after being drained?—No.

Do you grow root crops?—Yes, and take them off.

Though you cannot produce more mutton upon your farm, you could produce more beef?—Yes, and mutton too, because sheep are kept in the yards occasionally with us.

You have increased, in consequence of draining your land, the growing of root crops; have you there-

by increased the quantity of beef on your farm?—Decidedly.

Can you say to what extent?—I think on my land a third more stock might be kept by root crops.

On your large farm?—Yes.

You say, in other parts of Kent there is no compensation?—It is not so extensive. I can point out in the weald a mode for paying for different things, different from other parts; for instance, hay passes from the outgoing to the incoming tenant at what is called a feed price, which is a mode that I have not met with in other districts, and I value in three or four counties. I have not met with that in other counties, though it prevails throughout the weald of Kent and Sussex; feed price is a price between what we may term the foddering and dung price, and sale price; that is to say, if it was worth £4 a ton, that would be 50s.; the dung falls in the same way; our dung is valued in the weald of Kent and Sussex in the same way, at a feeding price.

Is the dung valued according to measure, or partly according to measure and partly according to quality?—Both; we always measure the dung, and make the best inquiries we can of what the dung is made of; if cake has been fed, we pay more than for manure made in the straw-yard.

Then it is an encouragement to a tenant to keep up the condition of his land, and feed his beasts well, if that is considered in the quality of dung, and he gets a corresponding improvement in the price?—Our difference in price is not so great as the difference in the quality of the manure.

As far as it goes it is so?—Yes, as far as it goes it is so.

Should you not consider it a discouragement to the tenant if the dung all belonged to the landlord, whether made with oil-cake or water only, and all went to the incoming tenant for nothing?—It would.

Must not that be a great inducement to a tenant to lower his farming in the last year of his tenancy?—It must; there is no question about it.

Then if this system of compensation, as you have described it, were made more certain, would it tend to the encouragement of good farming generally?—Yes; I wish to be understood that that custom is dependent entirely upon whether the tenant can show he is entitled to the custom; we have many painful instances of the tenants taking farms without securing themselves at the first outset, and valuing them out with loss consequently.

Can you state those cases to the committee?—Yes.

Give them without mentioning names?—I remember one case in particular; there was a fire upon the premises, the whole of the premises were burnt down except the farmhouse. The landlord built up what was absolutely necessary to go on with the farm, and left the tenant to do the other things; he did so, and shortly after he had notice to quit. I am speaking of cases coming under my own notice. I know many more; I was called upon to value him out, and he requested to be paid for the erection of the minor offices, which were built by the tenant's timber as well as by his labour. The garden was also laid out, and the fruit trees planted; a considerable expense it is well known will arise in filling up those small things in a farmyard and premises, none of which the steward would allow the outgoing tenant for.

Mr. MOODY.] That was because there was no special agreement?—Yes.

There is no custom at all?—When I speak of the custom of the weald, I speak of the custom when the lease states that the tenant is to go out according to custom; it is very common in our agreements, that the

tenant should be allowed according to the custom of the country, but we do not consider him entitled to that unless he can show something by which he is entitled.

Then it amounts to no custom except by agreement?—Just so.

CHAIRMAN.] You say in this case it was a great hardship upon the tenant that he was not allowed for the buildings he put up?—Yes, and I asked the steward if he might take the materials which were quite detached; he said no, nor the fruit trees; he left the whole without any compensation.

Could you mention some other case to the committee?—I will give you another. I went from that farm to another; they were both in adjoining parishes; the one I shall mention now was a large occupation; the occupier had offended the landlord by some means, and very unexpectedly he had notice to quit; he had farmed exceedingly high, and done a considerable deal of draining, and planting, and so on; and I was called upon to do the valuation upon his leaving, and in none of the cases which were not strictly and closely provided for in the agreement could I get any allowance.

What were the outlays for which this outgoing tenant obtained no compensation?—Such as drainage, filling up pits, grubbing hedges, and making new ones, making them straight where they were crooked, and planting fruit trees.

Could you state any other case to the committee?—Yes, I can state another very strong one: a person took a farm in my neighbourhood, and paid for everything at coming in; he even took the household furniture as well as the live and dead stock, and the agreement for holding was drawn up by a solicitor who, perhaps, was not acquainted with drawing up agricultural agreements, and he omitted to put in what he was to be allowed for upon leaving, and left it entirely silent in fact. The gentleman whose property it was had a son grown up, and he was desirous of putting him in the farm, and gave notice accordingly. I received a letter from the proprietor to go and value such effects on the farm as he was bound to take; his son met me to give instructions; I went and called upon the tenant to produce his agreement; I read it over and said, "I do not find that you have any provision at all to be paid;" he said, "I took so and so, and here is my inventory;" I observed it was no use unless he could find an agreement from the landlord to be paid according to the custom. I referred to the young gentleman who was the son: I said, "Is your father willing you should pay according to the custom of the country?" he said, "I do not know; I have brought you that letter of instruction." I said, "I shall be very happy to do your father's business, but I cannot enter upon a valuation so unfair as that." I perceived the man going out had got the land in a good state, and prepared his fallows for wheat, and his manure was cast, the haystacks were in good order, and his underwood part ready to be cut. I said, "I cannot undertake this, I decline doing it, I would rather go back;" he said, "I have no authority but what I brought you;" I said, "I will do this one thing; I will go over the valuation according to the custom of the country as usual, and deal as between outgoing and incoming tenant, and send it to your father without his being bound to what I do; if he chooses to do it, it will be fair and right; it cannot be expected your father should wish you to go in this farm, the tenant preparing you fallows for wheat, and to leave you his underwood and other things." I sent my amount accompanied with a letter of recommendation. He refused to pay for it and abide by my valuation, and the result was that the

outgoing tenant commenced an action to recover. His solicitor found he had no chance I believe, and they gave up, he being paid for what he could move off, his hay-stacks, and hop-poles, and so on. Though a small holding the tenant lost £200 all from the want of a well-established tenant-right.

You are understood to say that the lease did not state that the tenant was to hold contrary to the custom of the country, without compensation; but it was by mere silence of the lease as respects the custom of the country, which was an accidental silence, that the landlord deprived the tenant of the very claim to compensation for that which he had paid himself upon entry?—Yes, exactly so.

What was the extent of that occupation?—About 130 or 140 acres.

Was that a heavy loss to the tenant?—Yes.

Then the committee are to understand you, that though you have a custom of compensation, it is an uncertain custom; and you think it would be desirable that the legislature should ratify the tenant's claim for well-considered improvements?—Yes, we think we have no custom unless there is something to give validity to it, some agreement of some kind; and if the agreement says we are to value according to custom, I should give them what the custom is.

Mr. MOODY.] With regard to this last case, you would not include in the tenant-right, supposing the outgoing tenant had taken all his predecessor's stock, that then the incoming tenant should be bound to take the stock again, and so in respect to the furniture as well?—No.

It seems to be a loss incurred by this man in that manner?—No, there was no loss in that; he could take it away. I did not ask for that to be taken.

You mentioned that the incoming tenant took his stock and furniture, and the young man, when he came to take on the farm, would not take the stock or the furniture?—No, he would not pay for anything that could not be moved off.

CHAIRMAN.] Can you state any other case of hardship to the committee?—The other day I took a valuation upon a large estate, and it happened to be omitted that the tenant should be paid for underdraining; the steward was present, and he, himself the taker, refused to allow it.

When you say the steward was the taker, what do you mean?—He is, besides an occupier, the steward to a large estate, and he occupies two or three farms, and he increases his occupation by this one.

And the steward of the property is taking one of his employer's farms into his own occupation, and refuses to allow the tenant for drainage?—Yes, because it happened to be omitted in the agreement, which was produced by himself.

In this case the compensation for draining was omitted to be mentioned?—It was omitted to be mentioned in the lease.

Did that tenant conceive he was entitled to compensation when he was draining?—Yes, decidedly.

On what grounds?—Very many; in consequence of the great advantage of drainage, it is generally allowed; we very seldom find those who refuse to allow drainage, but it is a mere voluntary act of the parties, in the absence of an agreement to be paid, and none paid for on taking in consequence of none being done.

Then it comes back to what you were understood to say before, that though there is a general expectation of compensation for drainage, and a general wish to establish the custom, that this custom of compensation is not sufficiently binding, but that if the incoming tenant refuses to pay, the outgoing tenant is unable

to enforce his claim?—Decidedly so, without agreement, or having paid for it on entry.

It is so far the custom, that the valuers for the outgoing and incoming tenant, if they are neither of them instructed by their clients to object, would on their own view allow the claims for compensation?—Yes, we make it a point to do so.

If it is left for you to decide, acting on both sides, what should be paid for, you in your own judgment would allow compensation for drainage as being according to the custom?—I should.

But then you were before understood to say that this custom is so far not binding, that if the incoming tenant objects to its being allowed, you have no power to enforce it?—Certainly not. I wish to be distinctly understood; when I use the word custom, I mean rather the mode of valuing; because I would observe, if the custom is not binding, it is not a custom at all; it is very common in our agreements that the tenant shall be valued out by the custom of the country.

Mr. NEWDEGATE.] You stated that the practice of drainage in the weald is rather of recent adoption?—It has not been adopted, except in hop land, till within the last few years.

Are the tenures in the weald from year to year, or on lease?—Three out of four are yearly tenants, or holding under very short leases.

Do you find that the custom is not more binding in the case of yearly tenants than in the case of leasehold tenants?—No, I think not.

You state that there is no power of recovering, by process of common law, compensation under the custom, unless such compensation has been specified in the agreement?—I am not aware of any; we do not obtain it; I cannot say what the law would give: I do not profess to be a lawyer.

You do not know any instances where that has been the case?—No.

Most of the cases you cited were losses owing to the absence of specific clauses in the agreement giving compensation?—Yes.

And those clauses have been omitted to be sought by the tenant, by neglect, or through ignorance?—You must understand that our tenantry, as a body, do not look at their agreements much; they have the agreements drawn, and they ask, "Is it right?" and they receive the answer, "Yes," and they sign it, and the thing is passed. The other day a man came to me, having given notice to leave, and he said, "I leave, I suppose, according to the custom, as I took it;" I said, "Let me see your agreement," and I read his agreement; I said, "Why did not you show this to some surveyor before you signed it?" he said, "I asked the lawyer if it was right, and he said it was, and I signed it:" the man had signed half his things away.

Those cases of losses which you have cited must be exceptional, they are not of frequent occurrence?—It is too often the case.

Then does this negligence of the tenant farmers prevail in the face of such losses as you have cited?—It does not occur twice. "I will take care," says the man, "when I take another farm I will look at the lease, or get some one to look at it for me."

Then surely it is the fault of the tenant if he signs an instrument which is inadequate or faulty?—I admit that; but the farmers in the weald of Kent and Sussex may not be such as you may be acquainted with, upon the whole.

Are the tenants of Kent and Sussex so ignorant that it is necessary to pass a law to secure them against the faults of the agreements they have themselves entered into?—I think it is necessary to pass a law that they should be entitled to what is fair and right at leaving,

without leaving it to their own judgment; looking to a great number of them.

Do you think that the tenantry of those counties would admit that they are not competent to form their own agreements?—Several of them have told me so.

Is the agriculture of Kent generally of a good description?—I am speaking of the weald of Kent and Sussex. I wish to be distinctly understood upon that point.

Is the agriculture there far advanced?—It has been improving very considerably within the last few years.

It has only improved recently?—Yes, until quite recently our roads were impassable in winter, with the exception of the turnpike roads; we used to take our wives behind us on our horses, and get along as well as we could upon a stone path the width of this table.

The negligence of the tenantry, and the losses owing to the informality of the leases, do not prevail extensively except in those districts where you say agriculture is only progressive?—They do prevail more extensively than you may be aware of. We have difficulties very often in our valuations; and as a valuer, I should be exceedingly glad if those difficulties could be removed by some clearly defined mode.

You want a clear mode for testing the right of the tenant and the validity of the agreement?—Yes.

In short, you require some additional facilities for deciding matters in dispute, which arise under the different interpretation of agreements, and under the custom of the county?—We want some well-defined custom, and we should find no difficulty in applying it; I should find no difficulty in applying it; if by the introduction of a Bill a general mode could be pointed out, I am sure there would be no difficulty in bringing it to bear.

The customs in other parts of Kent and Sussex are more defined, and more satisfactory, are they not?—The custom in the eastern part of Kent is not to pay for so much; the dung there is principally the property of the landlord; and there the land is of a better quality, very little fallow is done, and consequently very little is paid for; the hay is paid for pretty generally in the same way as in the Weald.

The custom then in the more improved district is less extensive; there are fewer payments, but it is more defined and more general in its operation?—Mid Kent is better cultivated than the Weald of Kent, and things are paid for higher, hay, and straw, and dung, at a market value, for instance.

And there the custom is more certain?—There the custom is more certain; it does not embrace such a variety of things as the mode of cultivation in the Weald of Kent requires.

As far as your practice goes, the simpler the custom, that is, the less it involves the larger number of payments, the more easy in its application, and there is more certainty of recovery by the tenant under it?—It is easier and better understood. I should think the Bill under contemplation would be the greatest boon to the poorer districts, bringing them into cultivation, and giving the occupiers that spirit which is found in the better districts. In the better districts you find better and more affluent farmers; you cannot find any district anywhere, where farmers of greater intelligence and more opulence exist, than in Mid Kent.

In short the custom seems to have improved with the cultivation?—No, the land is so very different; in a good deal of Mid Kent the land is worth 50s. an acre and in the weald some of it 10s. an acre is a high price for it; and then in the better lands the more opulent occupiers often become purchasers, or have a better opportunity of becoming tenants, and the lower class of farmers are generally found in those districts that I

have named: in a poor country you generally find the poorer tenants; in good rich land you find a richer tenantry; the nature of things would produce that.

Then which is the most extensive district, the East Kent, the Mid Kent, or the Weald?—I should think the East Kent would be the largest. I am speaking of those divisions that we used to make use of to understand each other before the division took place, of East and West Kent, for the Reform Act; it is quite distinct now. I am not to be understood in my remarks to apply to that division, but what we understand when speaking the different parts of Kent.

You use the term to explain the difference of custom as prevailing in those districts?—Of the different parts of Kent, as is generally understood by a Kentish man.

Do you think that if landlords, who are tenants for life, had the power of entering into an agreement to give compensation, and the farmers know that agreements would be more generally made, that they would be more carefully looked after than they are at present?—Very many landlords reside afar off, and they do not understand these things, and the tenant says, "Will you let me drain and do other improvements, and pay me for it?" They say, "I do not know anything about it; I cannot say anything about it;" and it is put off from time to time, and the thing is not done. If the landlords lived on the spot, and saw the importance of it, there would be no difficulty about it; but they do not many of them.

But after all, is not it the tenant's own fault in the Weald of Kent if he does not recover, owing to his having become a party to an agreement that does not secure him the compensation that he seeks at last?—I admit it is his own fault; but I have described the character of the men; it will be found that there are farmers in my neighbourhood, if you read any agreement they would not understand it; you could not make them understand it.

Mr. T. EGERTON.] When you are valuing, as you state, between the in-coming and out-going tenant, or as between them and the landlord, do you take into account any dilapidations?—We do, when we are permitted to apply the custom.

You do take into account the dilapidations as to farm buildings?—Yes.

And also as to acts of husbandry?—Yes, anything that we consider to be detrimental.

CHAIRMAN.] You say that in Mid Kent the allowances are more favourable to the out-going tenant than in East Kent?—Yes.

And that Mid Kent is better farmed than East Kent?—A great part of Mid Kent is hop and fruit plantation. I do not say it is better farmed; it is different sort of land; there are not so many hops and fruit in East Kent as in Mid Kent.

Supposing an in-coming tenant made an agreement that he shall be paid for improvements when he quits the farm, according to the custom of the country, and that he drains upon that covenant, and supposing the in-coming tenant, as you say he may do, refuses to take to the drainage, and denies the existence of the custom, what remedy has the out-going tenant?—I think within the last three or four years we have generally understood each other, that we should consider the draining as embraced under the term custom of the country.

You were understood to say you thought it was a custom that was not binding, and that if the in-coming tenant refused to enter into it, he had the power of preventing its valuation by not sanctioning it?—Yes, if he gives a positive order to that effect; we do not take it if not paid for on entry.

Then you are to be understood to say, that if the tenant makes an agreement that he shall be compensated according to the custom of the country, and on the faith of that agreement executes draining upon his land, that although he has done his best to secure himself the compensation, it is in the power of the incoming tenant to deny the existence of the custom, and to instruct his valuer not to allow compensation for draining to the out-going tenant?—I have known several cases of that, and I have treated it in this way: I have asked the out-going tenant to produce his old inventory, and if I found he had paid for it, I have considered that to be the custom upon that farm, and I have insisted upon its being paid, if not, I have given it up.

Therefore, if an incoming tenant takes to an undrained farm, and drains it, under an agreement that he is to be compensated according to the custom of the country still if his successor refuses to admit the custom, you, acting on his part, would have no power to enforce it?—I think not; I have lost it in several cases. There is some doubt about it; much depends upon the custom of the estate to which the farm belongs.

You have lost the compensation for draining in several cases, though the out-going tenant had executed the draining upon the faith of being compensated upon the custom of the country?—Yes.

MR. NEWDEGATE.] You were understood to say that draining is a modern invention in this district, that it is generally accepted as a case of compensation under the custom?—Most generally, but not always.

It is becoming so?—It is becoming so. The Chairman has put the question quite right in asking the question whether the farmer took to the undrained farm; it was the case in all the instances I refer to.

CHAIRMAN.] And no farmer, holding by agreement to be compensated by the custom of the country, can tell at this moment whether or not he will be allowed for draining?—I think not, if there were no draining when he took it; but if there were draining and he paid for it, I do not think it could be refused.

The question was, the draining being a new practice, no tenant holding his farm under a condition of being compensated according to the custom of the country, can tell whether he will be compensated or not for the draining, as he does not know whether his successor would be an awkward customer or not?—Yes, there might be some difficulty about it.

That is the state of uncertainty in which the farms in the weald of Kent at present are?—Yes, and that is the reason why a great deal more draining is not done.

MR. MOODY.] It is daily growing into a custom independent of the law?—Yes; the importance of it is seen by so many individuals, and adopted by them. I have no doubt in a short time we shall get it established as we have done our manures and other things.

Those have grown into a custom simply from the manner?—Yes.

CHAIRMAN.] Still you are understood to say that this state of uncertainty is a great discouragement to the Kentish farmer in draining his land?—Yes, it is; and I am sorry to say that a great many landlords, to whom application is made, do not evince that disposition to encourage improvements which we could wish they would. There are causes, no doubt. Our tenantry are not in a position to undertake a great deal on their own account; it is highly necessary for the landlord to do the under-drainage, and charge a percentage for it.

MR. T. EGERTON.] No system of tenant-right would give that?—No, not in that case, but then it is so necessary to improve; the object of the tenant-right bill

is to improve the land, and I am pointing out something that may assist in effecting it.

CHAIRMAN.] Although you think it desirable, where there are poor tenants, that the landlords should do it if they are not poor landlords also, are you of opinion that where the landlord does not find it desirable to make those improvements, it would be desirable to enable the tenant to do so?—Yes, most certainly; some land which is church and hospital property is in that situation that it is all left to the tenants to improve; and many of them, in consequence of the insecurity of being paid for it, do not do it. I know one farm in particular in our parish, recently taken, where if they could be fully secured, the parties taking it would go on with the drainage of it.

May 22nd, 1848.

MEMBERS PRESENT.

Mr. Tatton Egerton	Mr. Newdegate
Mr. Hayter	Mr. Pusey
Mr. Henley	Mr. Sotheron
Mr. Moody	Sir John Trollope.

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of WILLIAM PINCHES.

CHAIRMAN.] You are a resident landed proprietor in Shropshire?—Yes, I am.

You are also president of the Wenlock Farmers' Club?—I am.

Have you turned your attention to the question of tenant-right?—I have, for many years.

When is the period of entry upon farms in Shropshire?—On the 25th of March invariably; never at Michaelmas; and from year to year, determinable by half year's notice, given on the 25th of the preceding September.

Does the out-going tenant receive any remuneration from his successor for any improvements he may have made upon the farm?—Never in that county.

Nor for any artificial manure or food?—Never.

In your opinion, is that a defective system?—Undoubtedly it is; it prevents the improvement of the land.

In what way does it operate against the improvement of the land?—It makes the out-going tenant very careful how he lays out anything during his last year's occupation; in fact, instead of keeping up the farm to the usual and customary cultivation, it deteriorates in value the few last years before he intends to leave it.

Is land generally held for a term, or from year to year?—There are leases, and there are terms of years given; but, generally speaking, in Shropshire and Montgomeryshire, the tenancy is from year to year, a rack tenancy.

In point of fact, do you, as a landed proprietor, see many improvements by which the productiveness of the land in Shropshire might be increased if the tenant had a greater security for the outlay of his capital?—Undoubtedly I do.

You say you see many points in which the productiveness of the land might be increased by a freer outlay of capital; would you be so good as to state to the Committee in what respect you think it might be improved?—In many respects; the out-going tenant would employ more labourers, and lay out more money in artificial manure; he would drain more extensively, and, in fact, would do all acts of husbandry more fearlessly and with less hesitation if a legislative enactment would protect him in the outlay, in the event of his quitting the farm. All farming operations he

would set about with more earnestness, and they would be gone through with more determination than he could do prudently now.

Does the land require draining in many parts of Shropshire?—Yes; what has not been already done requires doing almost throughout the whole county.

Are you of opinion that farmers are deterred from the outlay of capital by the want of security?—Most decidedly.

Is there any other evidence which you wish to lay before the Committee on the subject of tenant-right?—No other evidence, except in stating my opinion as to the absolute necessity of tenant-right in some shape or other; I see the want of it every day, although I suppose in the county of Salop we have as good landlords, I mean the large proprietors are as good landlords as any in the country. It is as safe to occupy a farm under them as under an enactment of this kind if such an one passed; but I think, looking to the whole county generally, there are many cases where rack tenants are occupying farms where they cannot lay out money upon them; they are afraid to lay out money; my opinion is, generally, that if such an enactment as this were to pass that more capital would be invested in agricultural pursuits; that is what we want; we want more capital invested in agricultural pursuits; we have so many poor farmers now, men who have no money.

Mr. BOUVERIE.] Have improvements of the character you have referred to taken place under those good landlords, as compared with those who you say are not so good?—Yes, they go on more fearlessly in laying out their money, because they know their tenure is as safe almost as it can be. Certainly circumstances may arise in which they may be turned out of their farms; the question of game very often leads to notice passing between landlord and tenant, and in that case they would be no better off than anybody else.

As a matter of fact, have improvements taken place on those large estates that have not taken place on the smaller ones?—They have more generally.

Is that under agreement or in reliance upon the owner of the land?—In reliance upon the owner of the land; their family having lived there for generations in the same tenancy.

Mr. HENLEY.] Has the condition of the agriculture in your county improved within the last 30 years?—Decidedly it has improved.

Has the improvement been progressive?—It has so.

Does that extend generally over the whole county?—No; I cannot say it does.

What proportion of your county has improved and what has not, should you say?—Somewhere about a half, I should think. I cannot speak with any degree of certainty. I know the whole county tolerably well.

You say that about half has improved; are the Committee to understand that that half has more improved than the other, or that the other has stood entirely still for the last 30 years?—Upon my word, there has been very little difference in that other part.

You have said that some of the farmers are poor in your county?—Yes.

What proportion should you include under that description?—I should think I should include two-fifths certainly; but those are questions of course I could not answer minutely. I am speaking to the best of my impression.

The two-fifths of the county being occupied by men with insufficient capital, probably that may have been some reason why the improvements have not taken place?—It may have been, certainly.

Want of means is a very great impediment to spirited farming?—Certainly.

And two-fifths of the county being occupied by men who under your notion would be called poor farmers, that may be some reason why they have not improved so much as their richer neighbours?—Certainly that would be one reason.

Do you think that any legislative enactment should be retrospective as well as prospective in its operation?—I think not. I should be perfectly satisfied with it prospective.

Do you think it ought to be voluntary or compulsory?—Compulsory.

That neither party should have the power of excluding themselves from it?—That is my opinion.

Are there many estates in your county held by persons having limited interest in them?—Yes, many.

Would it be an improvement, do you think, if powers were given to persons having limited interests to bind their successors for a reasonable term?—Yes; I think so.

And so to enable parties to give security to their tenants?—Yes.

Could the security necessary to enable the tenant to lay out capital upon the land be given by a fee-simple landlord willing to grant it?—It is not given by him.

The question is, whether in your judgment it could be given; that is, could a fee-simple landlord, disposed to give security, give that security to the tenant, in your judgment?—He might now by agreement do it: by special agreement.

Can you point out any advantage which there would be by that being done by law instead of by agreement, both parties being willing to make an agreement?—The one would be only optional with the parties, and the other would be compulsory.

If both parties agreed would there be any difference?—It would be one and the same thing, if both agreed that the tenant should be remunerated for any outlay of capital that he might not have reaped the benefit of at the termination of his occupation.

Is land let generally on lease in Shropshire?—No, generally rack tenancy; I think there are few leases; they are generally rack tenancy, and chiefly living under those gentlemen I have alluded to, who are what we call excellent landlords.

Speaking generally, a large portion of the county of Salop is held at will, and has been greatly improved in the last 30 years?—That is the portion that has not been so much improved.

The portion that is held at will; what portion is not held at will then?—That portion that is held at will under rack tenancy is the least improved.

Without reference to the landlords?—The landlords I have alluded to make a great difference; tenants are more fearless in laying out their capital living under those landlords.

You were understood to say, that a large portion of the county of Shropshire was held under excellent landlords, and that the tenants had improved their farms considerably?—Yes.

And also you were understood to say, that a large portion, one-half the county, had been very much improved within your memory?—Yes; it has certainly.

All that has taken place without any legislative interference?—Yes.

Are those poor tenants, generally speaking, under the good landlords or under the bad ones?—Under the bad ones.

Therefore this state of things results in this, that where the tenantry are men of capital, holding under good landlords, the country has been improved without legislative interference?—Undoubtedly it has.

And that a considerable portion of the residue is held by men of small capital, and they have no security,

and that is where there are no improvements?—A great deal of it is held by men of capital, but they are afraid to lay it out; they do not feel their tenure secure enough to justify, in justice to their family, the laying out of their money in improving their land to any extent; that is, they will not do drainage or other permanent improvements.

What operations do you confine your remarks to?—Those under the head of permanent improvements.

You spoke in the early part of your examination of the general cultivation and employment of labour; what do you include under those heads?—I include the removal and shifting of fences, and the straightening of fences, and the drainage of the land; I do not know that there are many other improvements which I could put under the head of permanent improvements, except buildings and things of that kind, putting up any buildings that are necessary.

You do not mean these observations to apply to the ordinary acts of husbandry necessary for clean cultivation?—They are acts of husbandry, and very necessary before you can call a farm in a well cultivated state.

But do you not mean the term general cultivation to apply to the ordinary acts of husbandry necessary to keep a farm clean?—No.

Is artificial manure much used in Shropshire?—Yes, it has been more generally used during the last eight or ten years; since the introduction of guano it has been used more extensively.

Is artificial food much used in Shropshire?—A good deal of linseed and oil-cake are used.

That has been probably increasing in use within the last 10 or 15 years?—It has considerably till within the last year, when it has been so dear as to be out of the reach of an inland county like Shropshire, where the carriage comes so expensive; it has not been so much used during the last two years as before.

Up to that time it was increasing?—Yes, and will again if the price becomes moderate.

It does not pay at a high price, but it does at a moderate price?—Yes.

There is no other reason why it has been discontinued?—No, none but that.

Is lime used in your county?—Yes, a great deal of it is used.

What period of time should lime be thrown over; that is, how many years should the in-coming tenant be made to pay for lime used by the out-going tenant?—Not more than two years, I think.

What would be your judgment upon the subject of guano?—I should think four years.

You would put guano at four years, and lime at two?—Yes, but then the fourth year would be at a considerable decrease.

That would be your judgment?—Yes.

What would be your judgment with regard to oil-cake used as artificial food?—I should put that upon the same footing as guano generally.

You would throw that over four years?—Yes.

Has this object occupied your attention for some time?—It has certainly.

The Committee may take this opinion as your considered and decided opinion upon this matter?—Yes; I have not been in the habit of feeding myself much upon oil-cake and linseed, but of course I have had opportunities of judging of these things, and being brought up to farming from my infancy I can form a good idea of the application and importance of them.

And that would be your judgment of them, having considered them?—Yes.

What period of time should the expense of draining be thrown over on arable land?—It depends upon how

it is done; if it is done in the best manner, I should say 30 years.

What would be your judgment in regard to fences; over how many years should that cost be thrown?—That is a very difficult question to answer; I should think it should be spread over 20 years.

What is the principle upon which you calculate those things?—Upon the expense attending them in the first instance, and upon the period which the party doing them would be remunerated for his outlay.

That is to say, interest for his money?—Yes.

Fair trading profit?—Yes.

And a sinking fund to reimburse his capital?—Yes, that is the principle upon which I have answered those questions.

And considering this as the ground upon which the calculation ought to be made, is it still your opinion that, upon arable land, the cost of drainage would not be repaired in less than 30 years?—I do not think it would if done in the best manner.

What is your notion of the best manner of doing it?—My idea of the best manner of doing it is that you should have a duct for the water, by means of a pipe, or a tile, with a sole under it, and put a foot or 14 inches of stone upon it; that I consider the best method of draining.

And about what cost does it come to per acre?—I do not think it could be done for much less than £10 an acre, including cartage and all, if the stone lies at any distance.

Mr. BOUVERIE.] How many drains, and what distance apart do you calculate for?—Three feet deep, and eight yards apart.

Mr. HENLEY.] That £10 an acre you think would not be repaid upon arable land in less than 30 years?—No, I should not think it would if the tenant had to do it all.

Do you make any difference in your calculation upon good land or poor land?—Yes; generally speaking the stiff clay soils require more drainage, and they do not repay so soon as the better sort of land.

To what species of land do you mean 30 years to apply?—I meant it should apply generally to all land.

To land that is worth 10s. an acre, and land worth 40s. an acre?—We have not that difference in Shropshire.

You have no land so high?—No; a very little so high of arable land, except in certain localities.

Some poor clays are worth very little, whilst the rich loams are worth a great deal more for arable purposes?—Yes.

Perhaps as much as the previous question premised?—No.

You speak of land in Shropshire?—Where it is adjacent to a town, and its situation is advantageous, of course we have land worth more; I speak generally.

Mr. BOUVERIE.] Do you occupy any land besides your own?—None but my own; I occupy 400 acres of my own.

Mr. SOTHERON.] What is the tenant right which you would have enacted by law?—It is, in a few words, an enactment that would secure the tenant farmer, upon the quitting of his occupation, for the outlay of any capital which he had not had time to receive the benefit of during the time of his tenure.

In what manner would you estimate that?—I would estimate it according to the work done; according to the nature of the acts of agriculture which would call for it.

Would you estimate it by the number of years that have elapsed since it was done?—Yes, I would, according to the nature of the operation.

Would you estimate it by the value to the incoming

tenant from the time he came into possession?—I think that the outgoing tenant should be remunerated by some party, and if he was remunerated by the incoming tenant it would be the same thing as if the landlord did it; it does not matter how it is done, but he ought to be remunerated, and without that we cannot have good cultivation of the soil.

There are two modes: one fixing the number of years that have elapsed since the improvement has been made, and the other is by estimating the value of the thing, whatever may have been the number of years elapsed at the time; upon which of those two ways do you think the principle should proceed?—The latter one.

Of the value to the tenant?—Yes, of the value to the incoming tenant or to the landlord; the landlord is enabled to set his farm upon more advantageous terms if it be in good condition than he can if it be in bad condition; there are many cases, I know of numberless cases, where a landlord is obliged to set the farm at reduced rent for three years before he brings it to the rent of the last occupier, owing to the bad condition at the time he set it.

Suppose the case of a tenant expending £100 in erecting a shed, and he erects it substantially, and he occupies the farm for 20 years; at the end of those 20 years the shed is nearly as valuable as when erected; would you consider it right that he should receive for tenant right the value of the shed at the time, or would you say a certain sum ought to be deducted from the £100 for every year?—Certainly, that is the way; there should be a sum deducted for the benefit he had received for the 20 years it had been erected, though it may be as good at the end of the 20 years as it was at first; that is, he ought not to be allowed the full value that shed cost him in the erection.

Should he be allowed the full value that shed would be to the incoming tenant?—It is not as good, and cannot possibly be as good as when it was erected.

Suppose it is worth £90, should he be allowed £90, or should £5 a year be taken off from the time it was erected?—A certain portion should be taken off for the benefit derived from the time of erecting it; I am not prepared to say what proportion would be a fair sum at the end of 20 years.

You approve of that which is the principle of the honourable chairman's bill, that there should be some deduction for every year of additional occupation after the improvement has been made?—Yes, most certainly.

Mr. NEWDEGATE.] Have you drained much land?—Yes, a great deal of land; most of my property.

Have you found the outlay generally average £10 an acre?—No, much less on an average; I am speaking of draining three feet deep, eight yards apart, and putting a water-way at the bottom of the drain, and a quantity of stone at the top, which has to be hauled perhaps a mile to get it to the place, and then it has cost be £10; that has been the maximum.

Have you found a great increase of produce in consequence?—Undoubtedly, I find the benefit of it.

To what extent do you think the increased produce has been, to one-fourth, or one-fifth, or one-third, or in what proportion?—Upon a great deal of the land, I have found it to be threefold, where there have been springs, which have completely made the land barren, where you could not get horses upon it to cultivate it as you ought to do without draining in the first instance.

Did you find that effect upon the first crop or the second crop?—We found it to have its effect after the first dry summer after the operation is completed; no draining acts well until we have had a thoroughly dry summer over it, and then it acts as well as it ever will do.

Taking the usual run of summers, one summer out of two perhaps would bring the draining into full opera-

tion?—Yes, I think so; such a summer as last was, certainly.

That would bring you one wheat crop, and in that case you say the increase would be nearly threefold?—Yes, where there have been springs.

In the case of wheat crop of threefold increase that would be almost equal to the first cost of the drainage?—Yes.

Then the capital would be returned after that crop, after the first crop, when the drainage had full effect?—In those situations where there are springs, upon those portions of a field where the spring breaks out, at the top it may have that effect.

And those are the cases where the draining wants the most expensive manner of laying?—They are much about the same.

Then the subsequent crop to this when the capital would be repaid would remunerate the person who drained entirely, giving him also full and adequate benefit?—I do not mean the committee to understand that one crop would repay for the drainage of this land at all.

Not if the increase was threefold?—No.

You stated that in some instances the increase of the crop was threefold?—Certainly the value of the land was increased threefold. I did not say the increase of the crop, but the value of the land by the operation of draining in certain localities.

The value of the land is increased owing to the increase of this productive power?—Yes, clearly.

And the evidence of this productive power has been the threefold increase of the crop?—Yes, in those particular places.

And the threefold increase of the crop would, in cases of wheat crop, most likely repay the outlay of drainage?—You would not find it so if you came to calculations; at the low price of wheat, it would not recompense you for drainage at £10 an acre.

Sir J. TROLLOPE.] Have you never known a crop of wheat worth £10 an acre?—Yes.

Mr. SOTHERON.] You mean after deducting the expenses it would not pay at £10 an acre?—Yes.

Mr. NEWDEGATE.] Supposing you had land that would not grow wheat, and that you made it grow wheat, that would produce a difference by its improvement of three times its value?—Yes.

If that only grew twitch and grass before, and then it became available for wheat, that land would be three times as valuable?—Yes.

And that was the basis of your evidence?—Yes; the land would be three times as valuable in some certain instances, but not speaking generally. I spoke only of bogs and decidedly unsound places, owing to springs.

Taking the case you put where the drainage was extremely needed, in such a case as that would not two wheat crops be at least equivalent to the expense of draining and for the profits to be allowed to be for the improvement, considering that the land would not produce wheat before?—I am speaking of portions of fields that you could not use in that way before. We know that the growth is much less where land is unsound than where it is drained; in those cases we have very little return. When we drain those places we make them the best land; if you get the wet from it, it becomes the most productive land.

Take the case where it was not worth while to grow wheat, and where it became worth while to grow wheat after the land was drained, you are asked whether two crops of wheat would not repay the outlay for drainage, with profit to the person who drains?—Not if you deduct the expenses attending the growth of that crop of wheat; then I do not think it would.

Taking the increase at threefold, perhaps three crops would do it?—But those crops will not follow each other in succession.

Taking three crops, they would be spread over a period of 12 years, without counting the intervening crops that might be applied to the land in the interim; would then this threefold produce of wheat for three successive crops, without counting the increased produce of other kinds, repay the outlay for draining that land with a profit?—I do not think it would be so in all cases in my neighbourhood.

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Evidence of Mr. JOHN JEPHSON ROWLEY.

CHAIRMAN.] You are a tenant farmer near Mansfield?—I am.

Are you acquainted with Derbyshire?—Yes.

What is the usual time of entry in Derbyshire?—Always at Lady-day. I am not aware that there is any deviation from that rule.

Has the outgoing tenant an away-going crop?—He has not in the county of Derby.

What payments are made by the incoming tenant to his predecessor?—Those payments are generally regulated by the restrictions and covenants under which the generality of tenant farmers live.

Then it is seldom by custom?—Seldom by custom.

Is there any compensation to outgoing tenants for improvements they have made in the farm?—They are extremely limited in most cases; there is an allowance for bones unexpended, and for other kinds of tillages, such as guano and rape dust.

Is there any compensation for drainage?—Generally speaking, there is no compensation for draining; the tenant by his conditions is not allowed compensation for draining, but in most cases the landlord finds the tiles.

Is there any improvement made in buildings by the tenant farmers?—Yes, there are considerable improvements made by the tenant farmers.

Have they any compensation for that?—I believe not.

Are you of opinion that if the tenant farmers had more security for their capital they would increase the produce of their farms?—I am quite sure they would be able to do so.

In what respect do you think improvements could be made?—I think the want of tenant right is most injurious, by the admission of men of slender capital to the occupancy of farms, prohibiting them from, in a great degree, applying sufficient capital for the improvement of the soil.

Are there any other points you wish to mention to the committee?—In many cases where tenants are living under conditions, the whole of the manure made upon the farm is generally taken away from him and given to his successor; I have noticed some cases during the last spring where tenants leaving farms have left unconsumed the whole of their hay and straw too, so that there has been no manure made upon the farm for the preceding winter.

Where the manure belongs to the incoming tenant, or, what is the same thing, where it belongs to the landlord, the outgoing tenant, you say, has no interest in making good manures for his successor?—None.

Is that, in your opinion, a discouragement to good farming?—A heavy discouragement and a serious injury to a farm and to the future crops.

Is there much room for improvement in the farming of Derbyshire?—Yes, there is great room for improvement.

You have no doubt that an increased application of capital would increase the produce of the soil in Derby-

shire?—I have no doubt of it; capital alone seems to be wanting.

In what way do you think capital could be laid out advantageously in Derbyshire, speaking of the particular modes of outlay which, in your opinion, would be advantageous on the farms in Derbyshire?—Chiefly by drainage, and by the erection of substantial farm buildings with feeding sheds.

Sir J. TROLLOPE.] You say manure is left behind on the farms of Derbyshire, made of the hay and straw; is there nothing paid for the hay by the incoming tenant when it is left behind?—Yes.

Is not it taken at a consumable price?—It is taken by the award of the arbitrator, subject to the tonnage upon the farm, that could not be consumed off the premises.

But it is allowed for at a price for consumption on the farm?—Yes.

Which is a lower price than if sold off?—

Could the tenant, if he were keeping the farm, have sold that hay and straw off the farm, if he wished?—No.

Then would there be any loss by leaving it behind, if he was paid for it at a consumable price?—It would appear not to be a loss; there is a difference between the consumable price and the market price.

You state that the obstruction to good cultivation seems to be from the slender capital of tenants who take the farms frequently?—Yes.

Supposing there were a heavy outlay for tenant right to be paid to the outgoing tenant, would not the slender capital be still less left for the cultivation of the farm?—Yes, it would appear so. Still I do not see that the old tenant should be prevented of his right to benefit the successor; but if there were a small class of tenantry in that district, they would still have a less capital now than they require.

It would require more capital; where would that capital come from if they have not enough now as it is for the purpose of taking the farm?—There would be candidates for farms possessing more capital than there are at present.

Are the farms small in that district you have spoken of?—They will vary from 50 to 300 acres.

Those are usually considered in many districts of England but small farms?—Yes; but small farms.

The class of people generally who are competitors for those farms are almost invariably people of very slender means, are they not?—Perhaps in the applications for the small class of farms they are; it is not the case precisely in the larger farms.

Are they dairy farms or arable?—On the magnesian limestone there is a large district of arable land; and in many parts of the country there are considerable dairy farms.

On that limestone you do not require drainage?—No.

What is the land requiring drainage, pasture or arable?—Both.

Are tiles used in that district?—Yes.

Does the landlord ever find them?—Yes, generally.

The tenant does the labour and the haulage?—Yes.

How long ought he to be paid for that, after the drainage is done?—In most of the conditions and covenants on which tenant farmers are living, I believe seven years is allowed.

Is not that a discretionary allowance?—Yes; it is not the general rule.

In some cases they allow nothing?—In some cases nothing is allowed.

You say that people are frequently allowed seven years?—That is partly dependent upon the conditions.

And partly upon the workmanship?—I think in some

of the conditions under which tenant farmers occupy, that no compensation is allowed for drainage.

Where the tenants find the tiles and do the labour, you allow a per-centage upon the cost?—I believe they generally do it without any charge whatever.

Have you allowances for artificial manure?—No.

Nor for cake?—No.

Nor for guano?—Yes; there is an allowance for that; that has been lately introduced, and has not been used to any extent upon the turnip farms of the neighbourhood.

Do you mean that the manure has been lately introduced, or that a plan of an allowance for it has been lately introduced?—Both.

Has there been an allowance for lime lately?—There is a small allowance for lime; I am not able to say to what extent.

Then without a legislative tenant right, new systems of allowances have grown into custom within your district; that is guano, for instance, which is a new manure altogether. The question is, whether allowances have not been lately introduced which formerly did not exist, without any legislative tenant right and without any compulsion upon the subject?—I think I stated in the former part of my evidence that usages of the tenant farmers were generally dependent upon the covenants, and I am not aware that there has been anything new introduced with regard to guano.

Guano is allowed for?—I think guano would be allowed for; it is a thing that is very little used, the principal tillage being rape dust and bone dust.

Mr. HENLEY.] And which they are allowed for?—Yes.

Sir J. TROLLOPE.] How long are they allowed for?—It depends upon the size of the bones. I think the half-inch drill bones extend over a period of six years; it may vary according to the conditions. I think that is generally about the number of years it docs extend over.

What is your course of husbandry; is it four course or six course?—It is generally about a fifth course.

A five years' course?—Yes, upon the turnip farms.

Is it general to let farms upon covenants to tenants at will in your neighbourhood?—Generally.

Would not those covenants be all invalidated if an act of parliament passed giving those rights to tenants; would not an act break through the whole of those covenants?—That would depend upon the nature of the act of parliament itself, I think; so far as that, any act of parliament that may be passed would be strictly inoperative in my part of the country.

Till the termination of those covenants, that is the covenants that now exist?—I am not speaking of leases, only the restrictions under which the tenant farmers are farming the land.

They are covenants for management?—Yes, but not for years.

Are not the allowances that tenants are to take on leaving their farms recited in those covenants?—Yes.

The question then is, whether those covenants would not be broken through by any act passing at this moment on the subject?—Do you allude to the act of parliament commonly called Mr. Pusey's Bill?

The chairman of this committee's bill?—If I understand that bill rightly, it tolerates the special covenants and conditions in the letting of farms; therefore, so far as my part of the country is concerned, that bill will be inoperative.

And would not break through any of those conditions and covenants?—No.

CHAIRMAN.] You say the bill that has been mentioned would be inoperative, because it is not of a compulsory nature?—If I understand it rightly, it tolerates

or rather permits special agreements and covenants between landlord and tenant.

Your objection to the bill is understood to be this, that it is not compulsory?—Yes.

Evidence of Mr. STEPHEN GIBBONS.

CHAIRMAN.] You are the agent of Lord Yarborough for his property in the Isle of Wight?—I am.

Can you give any information to the committee as to the tenant right which his lordship has given there?—Yes.

You object to any compulsory enactment to carry out the principles of tenant right?—I do.

First as to the agreement which Lord Yarborough has granted. What are the allowances which Lord Yarborough has granted to his tenants in the Isle of Wight?—They are upon the same principle as upon his lordship's estates in Lincolnshire. I am one of Lord Yarborough's Lincolnshire agents, and lately have had the sole management of his Isle of Wight estates.

What is the usual period of entry in the Isle of Wight?—Michaelmas, the 11th of October.

What are the payments made by the incoming to the outgoing tenant?—I believe there have been no payments.

What was the state of the property generally when you undertook the management of it?—It was not in a good state of cultivation.

Were there good turnip crops?—No; generally speaking, they were not good.

You say no allowance was made for spending oil-cake; was any oil-cake spent?—I think not, or very trifling.

Was the manure left behind by the tenant?—Yes.

Was it of a good quality?—No, that was one of the defects. I think that the produce was not converted into good manure.

Then you are understood to say that his lordship has introduced the system of Lincolnshire tenant right in the Isle of Wight?—He has introduced a tenant right on the Lincolnshire system, but varying as to the period over which the allowances should extend.

What allowance do you make to tenants for linseed-cake in fattening sheep or cattle?—In Lincolnshire we do not allow anything for linseed-cake for sheep. I have introduced it in the Isle of Wight.

What allowance do you make in the Isle of Wight?—Two-sixths of the cake used the last year, and one-sixth of the year before; making, if the tenant continues to use about the same quantity, the allowance of one-half of what he would use the last year. At first when we introduced it into Lincolnshire we allowed one-half of the last year's oil-cake, but that was abused, as we saw people spending more the last year of their tenancy than ever they had done before; and therefore we spread it over two years, which I consider a great improvement.

How do you propose to satisfy yourself as to the tenant having used the oil-cake?—By producing his bills, and his men and himself giving evidence upon them.

What allowance has Lord Yarborough given to his tenants for guano in the Isle of Wight?—One half.

What allowance for bones; is it one-half the preceding year?—We make it extend over four years, and in Lincolnshire three years.

Mr. T. EGERTON.] Is it bones with acid?—I have made no distinction between bones mixed with sulphuric acid and bone dust.

That is not the grass land?—No, arable land only.

CHAIRMAN.] Why do you give four years in the Isle of Wight and only three in Lincolnshire?—Although Lord Yarborough's agent, I essentially belong to the class of tenant farmers; my connexions and family are tenant farmers, and therefore I have frequently heard this question of tenant right discussed, and I know what the general feeling about our Lincolnshire tenant right is, and where I think they have not been quite liberal enough I have made them rather more liberal.

What allowance does Lord Yarborough make for the use of lime on the Isle of Wight property?—It extends over four years there.

For chalking the land?—It is 10 years; that is much longer than it is in Lincolnshire, where we only allow seven.

Why do you allow more in the Isle of Wight than in Lincolnshire?—I think the tenant does not always get repaid in that time; if he happens to put on chalk and there comes a dry season, and not much frost, it does not fall. I have seen, myself, where it does injury to land for a year or two, and therefore have made it extend over a longer period; I think seven years too little.

What allowance do you make for under-draining, where the tenant finds the tiles and is at all the expense?—Twelve years.

And where the landlord finds the tiles and the tenant finds the labour, what allowance do you make then?—Four years.

Do you consider this a beneficial system on the Isle of Wight property?—Unquestionably.

You consider that the state of the farming requires such encouragement?—I think it would be improved by it.

Then the old state of farming, in your opinion, required some such encouragement and security as this to tenants?—I think so.

Will you be so good as to state to the committee your objection to such tenant right being enforced by law?—One reason is, that I think where parties are at liberty to make their own bargain, they very often discuss it with a better spirit; and have less difficulty in coming to a fair conclusion; and another is, that, if I understand this compulsory tenant right correctly, the landlord would be in a great measure at the mercy of his tenants. For instance, I have known some very clever and sensible men generally, who have had particular fancies about farming. Some have a fancy for machinery, and some for one thing, and some for another, and they probably would be trying experiments; and then if they found out, as they would do sometimes, that they had made a mistake, they might take the shortest way of getting the money back again; they would think the best way was to give up the farm, and probably the landlord would have to pay for an expensive tenant right, where the tenant had not spent his money judiciously. I know very clever men I would not trust to spend my money.

Sir J. TROLLOPE.] Is not it, in fact, letting another man spend your money?—Yes; I am so far an advocate for establishing a tenant right, that I have thought one of the best things I could do was to recommend the landlord to give a fair and liberal tenant right upon his estate; but I should prefer making the arrangement myself to allowing other people to make it.

In your memory, has not this tenant right, and the principles upon which it has been acted upon, very greatly extended in Lincolnshire?—It has become more general.

And for more articles?—And for more articles.

And the same principle has been gradually extending; in your own case, and within your own knowledge

it has extended from Lincolnshire to the Isle of Wight?—Yes.

Has that practice been pursued in the Isle of Wight by other landlords as well as Lord Yarborough?—No; those agreements are not signed yet.

It is nearly a new thing?—Yes, an entirely new thing.

Within how long?—Since April.

You are only just bringing it into notice in that island?—Yes.

You have been in the business a good many years?—Yes.

The whole system of tenant right has sprung up voluntarily?—Yes.

And extended from one end of that great county to the other?—So far as my knowledge goes it has, but the custom has varied; if a landowner or a tenant wishes to make special terms, they take it out of the custom by having special agreements. Upon Lord Yarborough's estate, which comprises 60,000 acres, we have not a single word in any agreements about any tenant right, and the custom is so well established that it is all left to the custom; but some other landowners have agreements.

And have you known any landowner object to this tenant right being introduced upon his estates in Lincolnshire?—No.

Do you know any trial to enforce it?—No.

Have you known any actions at law arise out of the system of tenant right; do you recollect any between the outgoing and incoming tenant?—I do not remember any.

Has not it been so well established as to become law by custom?—I know that people have different opinions as to whether the custom could be enforced in a court of law, but I have known some particular cases where I believe parties would not willingly have given more than they were obliged, but who felt obliged to submit to an arbitration, though I dare not say that the parties would have been able to have recovered in a court of law.

Do you ever undertake valuations?—No, not at all.

There has never been any hesitation or difficulty of extending the tenant right to new articles that have been thought beneficial to the land, particularly referring now to guano; there has never been any difficulty of including that in the custom of tenant right in Lincolnshire, where there is no law to compel it?—No.

Do you remember rape-cake being first used as a manure for turnips?—It is not used for that.

Not in the Wold?—No.

Is not it used on the heavy land?—Very little.

Do you remember in your practice any extension beyond guano for which payment is made between the incoming and outgoing tenant?—Oil-cake is a recent allowance, and I should say tile draining is too within my recollection.

Those are both introduced as tenant right valuations within your memory?—Oil-cake certainly within the last eight or nine years; and tile draining was so little practised, I think I may say the same of that.

Have you much experience of other counties out of Lincolnshire, except the Isle of Wight?—No.

Then you see the extension of the principle gradually gaining ground and confirmation not only in Lincolnshire, but in the other districts you are acquainted with, without a law upon the subject?—I see it is discussed, and there is so much common sense in favour of it that I think it will make its way. I cannot speak from my own knowledge to what extent it is gaining ground, but it is one of those things that must come.

And without the law?—Without the law.

Mr. HENLEY.] You stated you were connected with families engaged in the cultivation of land in Lincolnshire?—Yes.

And have been acquainted with it all your life?—Yes. Was the tenant right you have spoken of in Lincolnshire generally arranged by the tenants, or by the tenants and landlords?—I should say, speaking of Lord Yarborough's estate, it is a matter which none of them have had much to do with; but the valuers who have been called upon to settle those things have, from time to time, settled the principle until it has been pretty well established.

And the valuers have settled that upon principles that have been, generally speaking, satisfactory to the occupying tenantry?—Yes; I should say that a party about taking a farm knows what the custom is; and if he was not satisfied, he would, before he took the farm, ask if he might not be allowed to have certain variations introduced into his agreement; and, generally speaking, they would be so, if he could point out anything that showed the propriety of it.

The question related to the system that had gone on in Lincolnshire now for many years; is that, in your judgment, generally satisfactory to the occupying tenantry?—I think it would be more satisfactory if the allowances which are put in the Isle of Wight agreements were adopted; for instance, if chalk was extended from seven to ten years, and draining was rather more extended also. Our present system is that the landlord shall find the tiles, and the tenant be at the expense of putting them in. If, after he has had one crop, he leaves his farm, he gets no allowance. Now that many people, and I amongst the rest, contend is unfair; I say he ought to have it five years to repay him.

Mr. NEWDEGATE.] That is one course?—Yes.

Mr. HENLEY.] If the time were extended it would be more satisfactory in Lincolnshire?—Yes, in two or three matters.

Of course the value of those things can only be settled by experience?—No.

And that experience probably will correct the matter in Lincolnshire if the general opinion is the same as yours?—I think it will.

It is not very easy at the first introduction of any custom to come to a sound opinion as to what its effect will be?—Certainly not. I have no doubt that if Lord Yarborough attempted to introduce into his Lincolnshire agreements anything about tenant right, they being at present silent upon it, his tenants would ask him for an extended allowance, some such as I have put into the Isle of Wight agreements. In fact, I may say, that before that agreement was offered to the tenants in the Isle of Wight, it was submitted to several people in Lincolnshire of the class of landowners, gentlemen occupying their own property, land-valuers, and tenant farmers; and I believe, with one exception, that that scale of allowance was approved of by the whole of them.

Taking this very large estate of Lord Yarborough's, his extensive tenantry are content to settle this matter among themselves, without having any agreement for it?—They have been so.

And you think they are so still?—Yes, under his lordship. I should not be content to take a farm under some people. As a general principle, I consider the tenant ought to have all those matters put into his agreement, but there has been that degree of confidence between Lord Yarborough and his tenants that it is not asked for.

Sir J. TROLLOPE.] Did you hear of a petition presented last year against the Tenant Right Bill?—I know that there was one.

Did any of Lord Yarborough's agents or tenants sign that petition?—Not to my knowledge.

You did not yourself?—No.

You do not know of any of the tenantry doing so?—No.

Mr. HENLEY.] You have spoken of the expense of chalk being thrown over ten years; of course that would depend very much upon the situation of the chalk, and the expense that it cost?—We have it upon the Wolds; the only land that is chalked is the Wolds, and the chalk is immediately underneath it. You can get it in any part of the fields.

If the chalk had to be fetched from any distance, and the expense were higher, it might be necessary even to throw it over a larger number of years before the tenant was repaid?—It might be; but where that is the case, it is burnt into lime, and then the cartage is lighter.

In parts of Essex they fetch chalk from a long distance and put it on?—Such a practice is unknown to us.

If the expense varied very much, it might be requisite to vary the number of years?—Yes; but it would be a serious question with us, if the cost was much increased, whether it would be repaid by the benefit. If it would, then if that expense was larger, it ought to extend over a greater number of years.

That is the reason why those things are better settled by private agreement between the parties than by making a general law to suit everybody?—A general law is not suitable to every case.

Mr. NEWDEGATE.] You say that you know of no instances where the question has come before a court of law?—I do not know of any.

What is the system of valuation; is all this valuation given in the aggregate, or are the sums stated?—The particular articles are specified in the valuation, but only the sum total is given.

In case of any difficulty arising, would it be very difficult to test the valuation?—I apprehend that the parties who make the valuation generally keep memorandums, and they would be able to state the prices they had put upon each.

Have you ever known the case of an umpire being called in?—One is appointed invariably; and I should say that most generally he attends when they make the valuation.

He is appointed in the first instance?—Yes, before the begin to act.

And in case of a difference between the arbitrators, would they have to submit the items upon which they formed the gross sum of the valuation to the umpire?—Unquestionably.

Their books then are, in fact, open to the umpire?—Generally speaking, he attends the meetings of the arbitrators, and each of them put their own valuation; and if they differ, he settles it then and there, and decides between them.

The umpire is appointed in the first instance?—He is.

But in cases where the umpire does not attend, the arbitrators should be bound to produce to him the items which, when completed, made the aggregate of their award?—Undoubtedly; but they would only ask him to decide such questions as they differed about.

Did you ever know a difference arise between the arbitrators upon the whole of the items?—Upon every one of them?

Yes.—No; those things do not come out before the public generally, if they do.

In order to form a law, it would be necessary to have some stricter system of valuation than at present

prevails?—I should not like to leave an extensive property in the hands of valuers generally, without giving them some rules to guide them.

And if that were attempted by law, the law must make the rules?—I take it that the landowner, if he were allowed, would at once set to work in every instance and make his own bargain, so as to take it out of the operation of the law, if he could.

You think, in short, that the landowners would endeavour by all means to evade the interference of the law?—I do.

Is there a great desire among the tenantry for interference by law?—I can only answer that question from what I read in the papers; in our neighbourhood the question has not been much agitated.

The tenants are perfectly satisfied in your neighbourhood with the custom as it prevails?—Yes; with some exceptions which I have pointed out.

But they are satisfied with the system?—Yes.

If there is any difference of opinion, it is only on the details?—Yes.

Mr. T. EGERTON.] In Lincolnshire when the tenant makes any permanent improvements, such as draining and the erection of farm-buildings, does he give notice to his landlord or agent?—If he wishes to erect farm-buildings, he goes to the landlord or agent and makes a bargain.

In the case of drainage, how is it?—The usual and indeed almost invariable custom is for the landlord to give the tiles, and the first question asked is, where and how they are going to do the draining, and if that is settled satisfactorily the tenant has the tiles, it being left with the agent to say either yes or no.

Take the case where a tenant, without asking his landlord or the agent, effected general improvements in draining of his own accord, what would he be entitled to claim for that, according to your custom, at the end of his tenancy?—I take it that he would be entitled to something, but the allowances are too small; they are not so liberal as I have put them in the Isle of Wight agreements. No tenant would attempt to do it without having some understanding with his landlord. The custom as to allowances for drainage refer more especially to those cases where the landlord finds the tiles; the others are isolated cases. There are indeed but few cases of that kind.

In the form of your agreement it is stated that in case the landlord finds the tiles, and the tenant the labour, you spread it over four years; and in case the tenant finds tiles and labour, you spread it over twelve years; what is the reason of that difference?—The labour is generally rather the largest proportion; but in the one case the landlord contributes liberally, by giving the tiles at once, and the tenant sooner gets repaid his outlay. He derives the same advantage from the drainage of land where the landlord has given the tiles as if he has found them himself; but as the advantage is obtained at less cost to him, it takes less time to get it back. You will see in that agreement that the works of draining and marling, which are the most expensive works, can only be done with the consent of the landlord or agent; that is a provision I would put in every agreement.

Mr. HENLEY.] Do you not draw a distinction between marling and chalking?—It may not be correctly expressed in Lincolnshire; but it is sometimes called marling and sometimes chalking, and both mean the same thing.

Do the Isle of Wight people understand it, do you think?—They do not use much marl or chalk at present; they will understand it before much is done.

Mr. NEWDEGATE.] In one sense, marling means ap-

plication of clay?—Yes; it is introduced there in the sense I tell you; probably not correctly.

CHAIRMAN.] You say you would object to a compulsory Act of Parliament, as putting the landlord too much in the hands of his tenant?—Yes.

Upon what item do you think that the tenant would be likely to incur an expenditure that might be inconvenient to the landlord?—I understand it is intended that buildings should be considered tenant-right. I have known people have peculiar notions about buildings; some have a fancy for one thing, some another. Some people are never happy except among bricks and mortar; they might put up many buildings that another man might consider a nuisance rather than an improvement. The in-coming tenant would object to pay for them, and the landlord would be obliged.

In your opinion, it would be very objectionable that tenants should be enabled, by Act of Parliament, to put up buildings without the landlord's consent on his farm, and make him responsible for them?—Yes.

Is there any other item in which you think the expenditure of the tenant might be inconvenient to the landlord?—I think opinions vary so much about draining, that it would not be safe to leave that in the hands of the tenant altogether.

In your opinion, should the landlord be consulted previously to any amount of draining being undertaken?—Yes.

And his consent should be necessary before any amount of draining should be undertaken that is to become chargeable upon his property?—Yes, I think so.

Mr. T. EGERTON.] Would the same answer apply to taking away old hedges and making fresh ones?—Yes, the landlords ought to be consulted about all those improvements if he is made liable to contribute anything to them.

With respect to manure, you do not think so?—I would leave that as much as possible in the hands of the tenant, but I have seen some people apply bones to land that did no good; the allowance however extends over so short a period that not much mischief would arise from tenant-right in manures.

Mr. HENLEY.] That is not so serious a question as the other?—No.

Sometimes bones do no good?—Yes.

CHAIRMAN.] You think the farmer would soon find it out, and the landlord would not be seriously inconvenienced by the tenant using artificial manure without applying to the landlord?—Cases might arise where probably there would be a little mischief done, but that would not be so serious.

You think that landlords would, if the tenant-right were recognised by law, wish to make private agreements with their tenants not to leave the whole thing open in the hands of valuers?—Prudent men would.

Mr. HENLEY.] An in-coming tenant being asked to pay a large price for a building would be very apt to say it was not wanted?—I should think he would; I would not allow another man to spend my employer's money.

CHAIRMAN.] If the landlord's consent were requisite, you say the land-agent representing the landlord would be very careful in giving permission to the tenant to make any large improvements in buildings?—Exactly so; my own opinion about buildings is that they ought to be provided by the landlord in the first instance; and if any special case arose where a tenant wanted something for his own fancy, he should pay for it.

Some landlords are not able to afford in the backward parts of England all the money that would be necessary to put their estates in such order as most of the Lincolnshire property is in?—I apprehend not.

Mr. T. EGERTON.] Would there be any objection to giving a tenant the power of erecting the buildings an

removing them at the termination of the tenancy, if the in-coming tenant or the landlord did not choose to take them at a valuation?—Assuming that no buildings were there, there would be no harm perhaps; but assuming there were some buildings, and he took them down and put up others, then an objection would arise, unless he replaced the old ones.

Sir J. TROLLOPE.] Has it been the custom on Lord Yarborough's estate to substitute good new for old bad buildings?—Lord Yarborough generally builds in the first instance, and the tenant afterwards keeps the buildings in repair; if a building is worn out, or the tenant wants additional buildings which it is not considered the landlord should pay the whole cost of, the tenant contributes the labour.

Are you able to recollect the conversion of the rabbit-warrens and heaths?—Some of them I recollect being converted.

Have they been done at the expense of the tenant or the landlord?—The landlord made the boundary fences and, in some cases, the subdivision fences also; the rest the tenant does.

The tenant merely does the surface cultivation?—Exactly so.

Is that a case that requires compensation?—I think not, because there is a degree of freshness in the land that compensates him.

With the subsequent crops?—Yes.

Evidence of Mr. THOMAS BONIFACE.

CHAIRMAN.] You are the agent for the Duke of Norfolk, on his property in Sussex?—I am; I have been agent for the Duke only about five years; previously to that I was extensively engaged in Sussex and the adjoining counties as general land agent and valuer.

You are opposed to any compulsory legislative enactment upon the subject of tenant-right?—I see great difficulties about it rather than being opposed to it.

What is the time of entry on farms in that part of Sussex which you are acquainted with?—Michaelmas; generally the 29th of September in preference to the 10th of October.

What are the payments usually made by in-coming tenants to out-going tenants?—The customary payments differ very much in the different districts of the county; the Weald of Sussex and the eastern parts generally have customs that are different from the south-west of the county; I should say that, taking the boundary on the north as the South Downs, Hampshire on the west, on the east the Adur, the south being the sea, the customs differ very much from the other parts of the county.

In this part of Sussex, west of the river Adur, what are the customary payments by the in-coming to the out-going tenant?—They are confined very much to acts of husbandry; the hay at a feeding-off price, and the fodder of the straw.

And in the Weald what are the payments?—They are extended to the payment of dressings and half dressings of dung and lime, and to the payment for fallows and tillage performed on the fallows, and the rent and taxes thereon, and for lays.

Mr. NEWDEGATE.] Including rent and taxes?—Including the rent and taxes.

CHAIRMAN.] Then the payment for dressings is for the manures?—Yes; made on the land, and from which no crop has been produced. Half-dressings comprise the dung from which one crop has been produced. So with regard to lime, where no crop has been produced, or if it be in the heap on the farm, it is paid for at the full cost. If it has produced one straw crop, then is half the cost.

Is the payment for the fallows a payment for a naked summer fallow?—Yes it is a payment for a naked summer fallow.

On your heavy land is it usual to give naked fallows?—In the Wealds of Sussex, Kent, and Surrey, it is the case.

Then the tenant has received no advantage from the expensive course of ploughing and cleaning into which the field has been put?—No.

And therefore it is customary to allow him for that, which is a benefit to his successor, but which is no benefit to him?—Yes.

Does the outgoing tenant also receive the rent for the year for the field that has been a naked fallow?—Yes.

And the taxes?—Yes.

You have spoken of the payment for the clover lay; will you describe that to the committee?—It is usually in the event of its being an old lay which has remained over one year; an allowance is made of a year's rent, or a portion of it, as the circumstances may be as to the state of cultivation in which it is found; but by the custom of the country there is a claim for the old lay.

The foundation of the custom then is this, that according to the ordinary course of husbandry a tenant would be entitled to break up the clover lay after one year for a crop of wheat?—Yes.

And inasmuch as he has forfeited the advantage of this crop of wheat he might have had by the ordinary rotation, he is considered as having a claim for that advantage which he has forfeited, and which now accrues to his successor?—Yes, that is so; and to explain the principle that has now been laid down so justly, and which is acted upon there in many cases from the land being in a bad condition, possibly the outgoing tenant is not disposed to sow it, and in that case a much less sum is paid for it than if it comes to the in-coming tenant in good condition.

Sir J. TROLLOPE.] Is there any valuation of the lay according to its goodness?—Yes.

But it is paid for as a lay?—According to the condition in which it may be found.

And if it is in a foul and bad state it would not be paid anything for?—Precisely so; they are also paid in that district of country for the hedge-rows and underwood, if included in the occupation.

CHAIRMAN.] When they enter upon a farm they enter upon the underwood also?—Yes.

They pay to their predecessors in proportion to the number of years' growth of the underwood?—Yes.

And the principle of underwood is applied also to the hedges?—Yes.

Which are often very wide, and approaching the nature of a copse?—Yes.

What they call shaws in Kent?—Yes.

Sir J. TROLLOPE.] Are they allowed for the growth up to a certain number of years?—For the stem, usually, unless there is any special arrangement to the contrary; by the custom they would be valued to the stem.

CHAIRMAN.] Are the committee to understand that the difficulties you wish to state to them as to any general enactment, apply to acts of husbandry or to acts of improvement of the farm?—My difficulty as to any legislative enactment applies to the whole. I am very desirous in all cases to see the fair beneficial interest paid to the leaving tenant. I am very anxious to see that as an arrangement between landlord and tenant, but the circumstances under which the tenants of different counties hold, and the customs of the different counties differ so much, that I am very fearful it will be impossible to bring any legislative enactment

on the subject into operation that would not rather confuse than help; the principle is good.

You would object then to any general terms of compensation being laid down?—Yes, I should be afraid to attempt that. Of the two I should prefer the leaving a large discretionary power somewhere, and then the important question is, where that power should be placed, and I should have difficulty in stating whether it should be placed in a board or individuals.

You would be altogether opposed to any enactment with the view of rendering uniform the custom of compensation for acts of husbandry?—Yes; for myself I cannot see, and I have not been told, how it will be possible when one reflects how various the customs are, not only in different counties but its different districts almost in each county.

As to the acts of husbandry?—Yes.

With regard to acts of improvement, such as the use of manure, draining, and so on, if a large latitude were left to the valuers, subject to the power on the part of the landlords of making special agreements, what would be the principal difficulties which you would wish to point out to the committee?—In the event of such a state of things I should be anxious to see official persons appointed as arbitrators between the parties; in case of disagreement I should not be at all satisfied to see the power that has been mentioned invested in the hands of the ordinary rate of valuers as referees and umpires in valuations; each party we will assume would appoint a referee, those referees would appoint an umpire; I think that umpire should be a superior person from the ordinary valuers of the neighbourhood.

MR. NEWDEGATE.] Supposing a person to have been appointed an official referee, it would be necessary that he should have access to the whole items of the valuation?—Unquestionably.

And if you were to select a person as referee, whom would you select; and what class of men would you select him from?—I think the persons best adapted for that office would be men who have been extensively engaged in the higher departments of a valuing surveyor. There are great distinctions in the grade of men who act as valuers. The experience and practice of some men are entirely confined to acts of husbandry, and those in a very narrow district. There are other men of superior education and information who practise, and who have previously to the Inclosure Bill acted as Commissioners of Inclosures, and who have been extensively engaged in the valuation of large estates, in copyhold enfranchisements and apportionment of tithes. There are men of that description, and I think this office would be more safely intrusted to them than to persons who have not a practical knowledge of agriculture.

It would be essential to their qualifications that they should be able to judge of everything?—I think the class of persons I have referred to would be preferable to professional men who may have a knowledge of evidence, but not of practical matters of farming.

Then what is to be gathered from your evidence is, that the difficulty that would be first obviated is the decision of differences arising between valuers?—Most clearly.

Has it ever occurred to you whether, by having valuations more specific with respect to the items, it might be referred to any court, such as the local court, for decision, so reducing the whole question to a matter of evidence?—I am afraid it would not. In cases of reference to professional men I have observed that although they may have had a general idea of agriculture, still they have had difficulty to see their way

clearly where a more practical man would have been quite at home.

That difficulty might in some degree be removed by an examination in open court?—Yes.

But you do not see your way for removing it entirely?—I do not.

MR. HENLEY.] The coming in upon a Sussex farm, where those tillages and half tillages, and rent and taxes go back, must be considerable now?—It is very heavy indeed.

Of course if there were to be any additional items it would be still increasing the payments of the tenant's entry?—Yes, very much.

In practice now there are very often attempts on the part of the outgoing tenant to make a good bill against the incoming tenant?—Yes; although I am anxious to see a fair system of valuation universally adopted, as between the landlord and the outgoing tenant, so that the outgoing tenant may receive for the beneficial interest which he leaves behind, I am bound in answer to that question to state that I have found the greatest difficulties in valuing the tillages where the custom of the country allows the outgoing tenant to claim upon those acts that have been performed in former years. The difficulties have been very great, and the temptations to mis-statement are very great.

You have found in practice that there has been an endeavour to force the incoming tenant to pay more than in your judgment was justly his right to pay?—Yes; particularly in the case of half-dressings; it is most difficult to get evidence to satisfy yourself upon it.

Of course the amount of money, by increasing the articles to be paid for, is increased, and the temptation to defraud would be greater?—Yes, truly. To show you how that has been felt by persons practically engaged, an acquaintance of mine, that I often met on matters of business some years ago, stated to me that he found the principle of valuing half-dressings so difficult that he thought he should advise a person for whom he acted as agent to buy them up. I mention that as showing clearly the difficulty which he felt at that time, which is quite consistent with my present view. I said, "I fully agree with you that those difficulties are very great;" and we often have exaggerated statements made of half dressings. Still I think the principle is good to induce a man to make a quantity of dung, and to make it well; it induces him to make it good, because it ensures him a better price. I felt with him the practical difficulty, but still I thought the principle correct.

You find this difficulty in practice in the county where those customs have existed time out of mind?—Yes.

Where all parties are acquainted with the custom?—Yes.

Of course, if it had been newly introduced into a district where the parties were not so much in the habit of it, the difficulty would be greater?—I do not see that that would follow.

If you introduced the system of tillages and half-tillages where the valuers were not so much used to dealing with them, there might probably be greater difficulty in preventing fraud?—I do not quite concur in that. I think one man having successfully obtained a larger valuation than he has been entitled to, by exaggerated statements of his half-dressings and tillages, would be an encouragement for his neighbour to do the same thing.

The question had reference to the inability of the landlord to detect it?—There might, perhaps, be more probability of detection than in the other case; but I think where it has been many years the custom you would be more in danger of exaggerated statements than where it was a new practice.

Would you always be equally able to find persons to detect those exaggerated statements?—Yes, I think so.

You think they would grow up one with the other?—Yes.

Do you think the tenant farmers in Sussex, where those heavy payments are made in coming into their farms, would like to have a law to prevent their receiving that when they went out?—No, I think not at all.

Would it be, do you think, just to give men, who have come into farms without paying anything, by the act a right to take that from their successors which they did not pay to their predecessors?—That would not be just.

A general law would do that in one case or the other?—Yes, the question of rent, speaking of yearly tenancy, is always a difficult one, and it is quite impossible to fix it so as to ensure a fair rent for each year. Suppose such a year as 1828 or the last year, when the price of wheat was high, as regards the landowner, there would be but little difficulty at such a period; he, being a man of reflection, would feel that if the high price continued his farm would be worth more money; this he would not expect, but on the contrary consider these seasons, the extreme of high prices, to produce, when coupled with seasons of the extreme of low prices, the average price he had in view when he let his farm, and, consequently, would see no reason why his tenant should be disturbed; but reverse the state of things, and suppose a year when the price of wheat is low, the tenant becomes oppressed or alarmed; he then suggests to his landlord that the rent is too much, and that, consequently, an alteration is requisite. Now the landlord's reply is quite just: I did not go to you in the year of high price for an increase, you must not come to me this year of low price; the thing left alone will remedy itself, and you will get a better price by and by. In the low price years of 1833, 1834, but few instances of this nature perhaps arose, because the tenant had an interest in continuing in his occupation that he would not have had if he had been entitled to such a principle of valuation as I suppose was intended by the bill presented to parliament in the last session. The great probability is he would have given his landlord notice to leave, and if it were in many of the poor districts I have mentioned in the Wealds of Sussex, Surrey, or Kent, it is very possible that there might have been so high a valuation that the landlord might have been unable to procure a tenant. If the farm happened to fall in a year of average or high price that difficulty would not apply; in the event of low price it might be a great difficulty.

In your judgment the existing tenant right has that effect?—Yes, in many instances.

It enables the tenant to give notice, and in consequence of the heavy tenant right a successor is not easily found?—Yes.

That leads to compelling the landlord to reduce the rent?—Yes.

And unduly?—Unquestionably; I allude to the year of low price.

It is very likely, in consequence of the alteration of the law that has taken place, that we may have as great if not greater alterations of high and low prices than we have been accustomed to heretofore?—I have been so mistaken upon that subject that I should have difficulty in venturing an opinion upon it so.

We have had the experience of higher prices than we have known for a vast number of years before?—Yes.

And it is possible we may experience an alteration to very low prices?—I cannot but think so; it is quite my opinion.

Therefore the reasons that have been stated would apply with greater force?—Yes, they would.

With regard to buildings, what is the practice in Sussex?—The buildings are usually maintained by the landlord providing the material and the tenant applying it. There are exceptions to that rule.

Do you think it would be just that if a tenant put up a building for his own convenience he should be on the same footing as the tradesman, and at the termination of his period he should be allowed to remove that building if not convenient to the landlord or the incoming tenant to take it?—Yes, it would be quite just; and if there were no difficulty or confusion in legislating upon it, I should be disposed to go further, and carry my opinion to this extent, that if a tenant placed a useful and desirable building upon a farm, I should be glad to see it taken at a valuation on his quitting by the landlord.

Do you see any practical objection to putting the farmer and the tradesman upon the same footing?—None whatever. I see every reason in justice why it should be so.

That would be an improvement?—A very great improvement.

Would it be an improvement to enable landowners having limited interests or estates upon a mortgage to be able to give security to tenants for such term as they might think fit, say for seven years, to bind their successors?—Would it be desirable, do you think, for instance, in buildings or permanent improvements upon the land, where the tenant wished to make permanent improvements, the landlord having a limited interest only, that he should be able to give the tenant security for a period to be named, say seven years?—Assuming that the money would be judiciously applied, it would be most desirable.

The question would have reference to the landlord consenting to the improvement about to be made?—I quite understand the question, but I have difficulty in giving a reply. I can only repeat that if the money were properly and judiciously applied it would be desirable.

The landlord would not give his consent unless, in his judgment as well as the tenant's, the money was about to be properly and well expended?—There might be those cases in which the interest of a tenant for life might not be considerable enough to secure that the money was properly invested. If the money was properly invested it would be a most desirable power to give for all concerned. I have seen instances in which estates have been injured from the want of such a power.

Taking so limited a period as seven years, how would it be?—There are some improvements that would require more than seven years to compensate the tenant for doing them; the difficulty that now suggests itself to my mind is as to the proper application of the money. I am asked if I thought it would be desirable that a tenant for life should have such a power; and my reply to that is, if it can be secured that the money will be properly applied, and applied in fact as the person who held the fee of the land would apply it, I think it is most desirable, but in many cases seven years would not be a full compensation.

In your judgment, would it be prudent to extend that beyond seven years?—Yes.

To what period would it be prudent to extend that, in your judgment?—From 10 to 12 years; there are improvements, such as draining, which, if well executed, I think in many cases would require a longer term; a person performing draining well would be entitled to at least from 10 to 12 years.

It would be a mutual benefit that there should be a power for the landlord to extend it to that period?—Yes, provided the point is secured I have mentioned,

Taking the answer of course with the proviso you have made, would there be any difficulty in its being ascertained whether drainage, for instance, was likely to be beneficial?—I think there would be no difficulty in ascertaining that fact.

Would there be any greater difficulty in ascertaining whether putting up buildings would be beneficial?—There would be no difficulty at all.

Those are the more expensive improvements; probably it would extend over a longer period in those cases than in the others?—There is another improvement, that of chalking. A witness spoke just now of chalking and marling; they differ materially as I understand; I understand marl to mean a species of calcareous clay, that comes into operation on the land sooner than chalk, and would consequently require a less time to remunerate the person applying it.

Would there be any practical difficulty in ascertaining whether chalking would be an improvement which ought to be binding upon the successor?—None whatever; chalking should extend over a longer period; I think 10 to 12 years.

There would be no difficulty in ascertaining whether it was beneficial to the land or not?—None whatever. Chalk in certain seasons may be an injury to the land for the first two or three years, instead of a benefit; it may lie about in large blocks, and not come into operation until the frost has broken it.

You see no objection to the legislature providing that agricultural tenants should be put upon the same footing as tradespeople, and that persons having limited interests should be able to bind their successors for a proper period?—None whatever.

CHAIRMAN.] You say that you have a difficulty sometimes in ascertaining what is the real claim for half-dressings?—Yes.

What was the nature of the half-dressings; was it dung employed?—Dung and lime. The difficulties I have experienced have been first as to the quantity applied, as to which you must take the statement of the person interested, and the next difficulty has been as to the quality of it.

Those were manures that had not been purchased?—Manures that had not been purchased.

Where of course no bills could be brought forward to corroborate the statement?—Yes, just so.

You have stated that supposing a tenant in consequence of the lowness of the price of corn to give notice to quit, then the tenant right of Sussex might produce a difficulty in the landlord's finding a successor?—Yes; provided the low price of corn continued up to the period that the farm came in hand.

You are understood to say, that a considerable portion of that tenant right consists in acts of husbandry, improvements performed upon very cold land?—Yes; I have described what those customs are; they are confined to acts of husbandry, and the dressings and half-dressings, and payment for lays.

Mr. HENLEY.] And rent and taxes?—You would have no difficulty in rent and taxes; there could be no mis-statement as to that.

CHAIRMAN.] With the exception of payments for manure, this tenant right is not of a nature to improve the value of the land; those fallows, and the charges incident to them, and so forth, belong to the ordinary course of husbandry, and those are not of a nature to improve the value of the land?—Not exactly so. In making a fallow, of course the value would depend upon the horse labour expended upon it, and the value and the quantity of horse labour, and the number of ploughings and harrowings.

Those are in the ordinary course of Sussex husbandry; though they are incident to the farming as now practised

in Sussex, they are not in a nature to raise the value of the land?—No.

Would not it be possible that if another kind of tenant right were introduced, based upon the improvement of the land, such as money expended judiciously in draining, chalking, and so forth, that would in a measure counterbalance the difficulty that the landlord might have in finding a new tenant?—I think so. The question was asked me as to the custom, and in reply to that question I could not state that those allowances have become the custom; still it is proper I should explain that they are daily themselves gaining ground; that in arrangements that are made between the landlord and the outgoing tenant, the tenant who has employed considerable capital in his farm has generally the means, with the consent of the landlord, of making a fair arrangement with the incoming tenant that he shall be paid for the beneficial interest left on the farm. I have seen that in every-day operation, and I am convinced it is gaining ground and coming far more satisfactorily into practice from circumstances, than it could be brought into operation by a legislative enactment. I am very much disposed to see a fair payment made for beneficial interest to the outgoing tenant; and I should be sorry to say anything which would induce the committee for a moment to feel I was not anxious on the subject, because I feel that it is very essential to improved agriculture.

The committee desire to draw your attention to the distinction between the tenant-right for acts of husbandry and for naked fallows, which it would be unwise to attempt to alter the tenant-right for the improvement of, and you are asked whether, though a heavy payment for naked fallows might be oppressive to the incoming tenant, and so render it difficult to let a farm, still, with judicious expenditure in draining, inasmuch as it must improve the letting value of the land, must not that have a contrary effect?—Truly it would if you could secure that the work would be well done; a man not entitled to a valuation for draining by custom, knows that if it is not efficiently and judiciously done he shall get no payment for it, and so does it well; but if, by legislative enactment, he was entitled to payment, I do not believe he would be so careful in the execution of it.

You think in all cases it is desirable that the tenant should, before he begins, give notice to the landlord of his intention, the landlord having an opportunity of exercising a voice upon the subject?—Yes.

You were understood to say, in answer to a question put to you, that you knew estates that were injured for want of buildings?—My reply was that I knew estates which were held by tenants for lives, that had been injured in consequence of the tenants for lives not having the power of making an arrangement for the payment of any improvement that might be effected.

When you speak of 10 or 12 years as the utmost time for compensation for improvement, would not that be inadequate for buildings?—I did not intend that to apply to buildings. I stated a different principle and opinion as to buildings. I would go to the extent that, provided it was good and necessary building, I would be glad to see the landlord take it at a fair valuation, that is, at its value at the period of the tenant's leaving the farm.

You would probably require the landlord's consent to the erection of the buildings before the tenant could establish a claim against him on the estate?—Yes.

You would not allow the tenant to establish a claim against the landlord for building, which he was pleased to put up without the landlord's previous consent?—No.

And if the landlord gave his consent, would you make it binding upon his successor in the case of the owner of a settled estate?—I am anxious that the difficulty I feel should be understood. I am afraid, that in all cases the

tenant for life has not sufficient interest to guarantee that the money would be properly laid out, or the buildings properly raised. Provided the money is judiciously spent, I would be glad that he should have, with the consent of the tenant for life, a power to hold the estate liable for the payment of it.

Would it be desirable, in order to protect the remainder man, to prevent the landlord from consenting to the expenditure of more than a certain amount of the value of the estate?—Provided there was a fair probability that the money would be properly expended, I should be quite satisfied to give the power, but I do not think that in all cases the tenant for life would have an interest to insure a judicious expenditure.

Would you propose any other mode of checking the tenant for life?—No.

Mr. HENLEY.] Manure is paid for as well as the naked fallow?—In part of Sussex (I refer to the Weald, and the eastern part) it is paid for at its value; if artificial feeding or corn has been used upon it, of course it is paid at a higher rate than if it is merely the produce of the farm.

And that, of course, tends to swell the bill for the incoming tenant to pay?—Yes. I will give the amount of a valuation in this neighbourhood, in which the rent was £100 a year, and the valuation was between £500 and £600, between five and six years' rent.

Sir J. TROLLOPE.] In that case the money would have been ample capital, perhaps, for such a farm?—It would have gone far towards it, provided there had been no payment.

Was it tillage or pasture?—It was arable land generally.

Arable land does not require a capital above £6 an acre generally in Sussex, does it?—Yes.

Without a valuation?—Yes. There are large districts in Sussex, I am sorry to say, where the capital hardly amounts to £6 an acre; if you take the average rate of any considerable extent of arable land, it should exceed that amount to cultivate it with success.

Should you think this heavy tenant right a bar to good cultivation, by the expenses absorbing a large portion of the incoming tenant's capital, so that he is not left with ample means to manage the farm?—No; for this reason, the tenants in this district have no difficulty in borrowing money.

That is not their own capital though?—Still they obtain it in addition to their own capital. If a man takes a farm in a district where there are not those valuations, there is a difficulty in borrowing capital; provided there is a valuation to show as an inducement to lend money, he can borrow it; there is a facility in that matter to a man who farms in this district, where there are those tenant-rights existing which other men have not.

Then in fact and practice, the tenant right is very frequently mortgaged?—Yes, certainly.

Mr. HAYTER.] You say that £600 was paid for compensation in the shape of tenant right to the outgoing tenant by the incoming tenant, upon a farm of 100 a year?—Yes; between £500 and £600.

What would be the capital besides that, which would be required on such a farm?—The farm is less than 200 acres.

Then what would be the capital so put upon the farm of less than 200 acres, after the £600 had been paid?—I should think the man probably employed, in addition to that, £1,000.

Then the capital upon the farm would be £1,600?—Yes, it would.

Mr. BOUVERIE.] Can you give loosely the particulars of that payment of between £500 and £600?—

Yes; the valuation comprised the hedges and under-wood, the dressings and half-dressings of dung and lime, the lays, the hay and straw at a feeding-off price, and the fallows.

Mr. HENLEY.] Rent and taxes and fallows?—Yes, the fallows, which include the rates and taxes.

Mr. T. EGBERTON.] What proportion of that would be for the wood?—I cannot say; a small proportion of it, however; the labour upon the fallows is very expensive.

Mr. HENLEY.] How many ploughings do you allow for in that district?—Four, I should think, and the harrowings.

Sir J. TROLLOPE.] Is it the same as in Surrey?—In Surrey they are higher rather. In the Weald and East of Sussex there is a custom, which has become almost obsolete, to pay for the half fallows; that is not the custom in Sussex or Kent, but it is in some parts of Surrey.

CHAIRMAN.] How many pounds do you allow for a naked fallow; how many pounds, that is, do allow for acts of husbandry on a naked fallow?—There is no arbitrary sum allowed; it is the number of ploughings and harrowings that have been performed upon it that would be paid for.

On the average, at what amount would you put that?—Usually about four ploughings, and 15 or 16 harrowings.

What do you allow for the ploughing?—In the heavy districts the price is from 10s. to 14s. an acre.

Mr. HAYTER.] Each ploughing?—Each ploughing; I am speaking of the Weald.

CHAIRMAN.] You allow from 12s. to 14s. an acre for each ploughing; how much do you allow for each harrowing?—The drag harrowings 1s. 6d. and the horse harrowings 9d.

You are probably aware that if land is drained it often requires much less ploughing and harrowing?—Yes.

You are probably aware that in many districts, where the usual practice has been naked fallow, that it has been given up altogether, and that green crops have been grown instead?—Yes.

You have no doubt, as a practical man, that the tendency of draining land would be to enable the farmer to dispense with the summer fallow, and that it has done so to a great extent?—Yes.

Suppose a farmer after the land was drained was able to grow summer vetches or root crops, instead of the naked fallows, would not the heavy charge for fallows be diminished to his successor?—If sheep were watted off upon it, and subsequently ploughed and made a half fallow of, it would be less.

Is not the tendency of improvement in agriculture to get rid of naked fallows altogether?—Most unquestionably it is.

And draining is one of the first steps necessary to that improvement?—Yes; as regards draining, the present want of arrangement is, I think, very much to be deplored as regards the water-courses; where properties are mixed up one with another, good and thorough draining is impeded for the want of an outlet to the main course.

Those acts of husbandry on the summer fallows, with the rent and taxes that arise out of the land, having been useless to the tenant, form a large proportion of the valuation of tenant right to the incoming tenant?—They do.

Mr. HENLEY.] Have you availed yourself in Sussex of the provisions of the act passed a few years ago to enable you to clear your brooks; you say the difficulty of draining is from the want of getting the small water-courses clear?—Yes.

You mean that you are often inconvenienced by the property of other owners intervening, which occasions considerable difficulty in getting a complete drainage; but is not there a power by law of getting it done by a simple mode?—Yes.

Have you ever got it done?—No, nor would it apply to all cases. If I am correctly informed upon it, it might be done in some instances.

But you have never tried it?—No. I can only say, if there is a remedy it is very desirable that it should be applied. The great inconvenience to modern draining is the want of a thorough outfall for ditches to the main sewer of the district.

MR. NEWDEGATE.] For the purpose of assessing compensation for improvement, you would take, as the basis of the calculation, the original outlay, including and adding to it a fair trading profit and interest upon the capital so expended?—No, I would take as the basis of the valuation the benefit to be derived by the incoming tenant to the landlord.

That would be your principal basis?—Yes.

Without respect to the outlay?—No. I should have regard to the outlay, but the basis would be the benefit to the incoming tenant.

May 29nd, 1848.

MEMBERS PRESENT.

Mr. Tatton Egerton	Mr. Newdegate
Mr. Hayter	Mr. Pusey
Sir Charles Lemon	Mr. Stafford
Mr. Moody	Sir John Trollope.

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of MAJOR FRANCIS BROWN.

MR. NEWDEGATE.] You have for many years held property in Lincolnshire?—Yes.

And have had the management of it in a great measure yourself?—Yes, for upwards of 53 years.

In what district of Lincolnshire is that?—It is about equi-distant between Grantham and Lincoln on the one hand, and Sleaford and Newark on the other; it is in the western part of the county, very near Nottinghamshire.

I believe that property extends partly upon what is termed the heath, and also into the valley?—It is of almost all kinds.

Embracing several sorts of soil?—Yes.

Are you acquainted with the custom which prevails in Lincolnshire, by which tenants recover compensation for the improvements that they have made upon the land?—I am not critically acquainted with it; but I do know that they receive a proportion for the outlay they have made in artificial manures and in under-draining, and in other respects, according to the length of years that they have enjoyed it. There is a certain proportion allowed per annum for a certain number of years; the principle is universal, I believe, in our county; but the details vary slightly in different districts.

Can you remember the origin or the growth of that custom in Lincolnshire?—Perfectly well.

What was its first phase; what was the first form in which it was established?—Lincolnshire, in my early period, was in a very bad state of cultivation indeed; in short, one-third of the whole county was entirely uncultivated, or very wretchedly and badly cultivated; the four-field system was gradually introduced, and artificial manure was introduced also; and then after a lapse of time, when tenants had to quit their farms, valuers began to make allowances to them; it was a very gradual thing in its early progress; it was

fought very stoutly against; but it is now, I believe, universal.

The custom then, if I understand you rightly, has grown up with the improvement of the cultivation?—Exactly so.

Do you consider that that custom is the consequence, or was it the cause of that improvement?—It was the consequence; but it has been extended by the circumstance of the tenant being insured, if he has any cause to quit, that he shall receive a compensation, so that it has stimulated the improvements.

And the state of agriculture in Lincolnshire has become highly improved?—Very much so.

Has the custom in Lincolnshire the force of law?—Yes.

In short, if the tenant were in danger of losing the capital which he had expended upon the land, or of being deprived of the fair interest and profit upon it, he could recover it by law under the custom?—I am no lawyer, but I have always understood that custom in cases of that kind established the law; that is a question that I really am not prepared strictly to answer, because probably it is a question of law. Unquestionably, if the valuations are conducted in a proper way, that is, if bonds are executed, and an adjudication made upon those bonds, then it most unquestionably would be legal.

Are not those bonds what are generally termed covenants under an agreement?—No; when there is any important case, I have always understood that in order to do away with the possibility of litigation they enter into a bond of agreement that they would be bound by the decision of the valuer; when the tenant is quitting, the outgoing tenant and the incoming tenant enter into an agreement to abide by the decision of the arbitrator.

Are the farms in Lincolnshire generally held upon lease or by yearly tenure?—I really am not aware at this moment of a single farm in my neighbourhood, or within my knowledge in the county, that is held under lease; I do not mean to say there are not cases, but I am not aware of a single one.

CHAIRMAN.] You intend to say they are almost entirely under yearly agreement?—Yes.

MR. NEWDEGATE.] Are leases generally desired by the tenantry of Lincolnshire?—I think not; I have no doubt there may be cases in which they may be desired, but there is that good feeling between the landlords and the tenants that I do not think they are often asked for.

There are compensation clauses generally in the yearly agreements by which the farms are held?—That I can only speak to in my own case; I think not; I do not think in respect of any one of my own tenants, or of the land I occupy as a tenant, that the agreements have those terms in them; that is left to the valuers.

Under the custom of the country?—Under the custom of the country.

Are the improving tenants of Lincolnshire practically secure in their holdings?—They consider themselves perfectly so.

You have not known many instances of arbitrary ejection by the landlord, or of consequent loss of the capital invested by the tenant?—I cannot call to my recollection anything of the kind; there may be instances, but I cannot call to my recollection anything of the kind.

You consider that under the custom of Lincolnshire the capital of the tenants is practically secure?—I do.

Is the amount of the rent frequently regulated with a view to compensate the tenant for improvements that are required upon the farm he takes?—I do not know

instances positively; I could not state instances; but I have always understood, and I believe, that in cases where a tenant takes a farm with the buildings out of order, or the farm out of condition, that he takes it upon a lower rent for a certain number of years, that he may make those improvements himself. The buildings of course belong to the landlord, and he ought always to do them, but sometimes it happens the tenant does them; then there is a compensation rent; but in such cases I presume that there are leases.

In estimating the value, then, of the compensation to be given to the tenant, the valuer is to take into account the amount of rent he pays in proportion to the value of the land when he took it?—No, not so, I think. I assume that in such cases as the one just now put, that where farms are in a bad state of cultivation, or the buildings in a bad state, and the tenant takes it to make all the improvements himself, then I presume that there is an agreement for a term of years, a lease, or agreement, or whatever it may be, in order that he may be secure of a return for the capital he has laid out; I cannot speak to that positively.

Are the farm buildings in Lincolnshire generally adequate, and are they provided by the landlord, or are they constructed by the joint capital of the landlord and the tenant?—They are generally amply sufficient for the farm upon which they are erected, but in all cases, except by special agreement, they are erected by the landlord.

The instances, then, in which the tenant undertakes part of the expense of erecting farm buildings are exceptions?—They are exceptions.

Is draining generally performed entirely at the expense of the landlord or at the expense of the tenant?—Generally the tiles are furnished by the landlord, and the expense of the labour is furnished by the tenant, but in a great many instances the tenants do the whole themselves; but as a general principle the landlord finds the tiles.

And when they have done the whole themselves, or have shared the expense of the drainage, they are entitled to compensation, should they leave their farm, under the custom of the country?—The rule, as I understand it, is this, if the tenant is at the whole expense of drainage, that is, finding the tiles as well as the labour, he is supposed to have derived the full benefit from it in seven years; if he quit in less than seven years, then he has a proportionate allowance made him. If the landlord finds the tiles, and the tenant only the labour, then it is spread over five years. I believe that is the usual practice in my neighbourhood.

And the same custom extends to other improvements, namely, manures, and the system of cultivation to be pursued, particularly at the close of the tenancy?—The system of cultivation is generally the subject of agreement; the rotation of cropping, which I understand to be meant by the system, is generally the subject of agreement; but in any artificial manures that are purchased, there is in my neighbourhood, and I understand it prevails generally in Lincolnshire, a certain proportion allowed each year; for instance, say bones. If a person applies bones for his turnip crop, he is entitled to the whole if he leaves after the turnip crop; if he takes a barley crop, then he is entitled to two-thirds, and if he takes a third crop, then he is entitled only to a fourth; that is, if he takes three crops out of four; and for the last crop he is entitled to a fourth; that is the custom in my neighbourhood.

And that is found satisfactory to the tenants generally?—Yes, perfectly so; it encourages them to lay out their capital in the improvement of their land, because they are sure to have a reasonable return if the tenant quits before the course of husbandry is finished.

Do you think that any legislative interference is necessary to define or to secure, or to enlarge the custom and the compensation under it as it at present exists in Lincolnshire?—I think it would do a great deal of mischief; I can only speak of my own county; I think there the custom works exceedingly well; it is flexible, and adapts itself to all new improvements, which no act of parliament, I apprehend, could possibly do; therefore I think we are better as we are than to be protected by an act of parliament. I am largely both a tenant farmer and occupier of my own land.

To what extent do you occupy your own, and to what extent do you hold under any other person?—I should say about 800 acres of my own, and I rent about 900 or a little more; I have let two or three of my farms, or I used to occupy a great deal more.

With respect to the 900 acres which you rent, you stand in the same position as the tenant farmers generally?—Exactly, without a lease.

And you are satisfied with that position?—Perfectly.

Is the system upon which the arbitrators decide the compensation upon tenants leaving their farms generally satisfactory and just?—I have never heard any complaints of it; it has worked well, as far as I know: it is not in my knowledge that any dispute has occurred afterwards.

You are not aware that any dispute has arisen upon those arbitrations; are you aware that any cases have been submitted to courts of law arising from those arbitrations?—I have been told that there have been such cases; but within my own knowledge no such thing has occurred.

Is it your impression generally, that the tenantry of Lincolnshire desire legislative interference in respect to those matters at present regulated by the custom of the country?—I think you will get that question answered better by other gentlemen than myself; I can only give a general answer upon the question: my own impression is that the people are satisfied.

CHAIRMAN.] It was some time before the custom of compensation was firmly established in Lincolnshire?—Yes.

And it was a good deal fought against?—It was a good deal fought against by the valuers and the incoming tenants, who regarded it at first as an innovation.

You are understood to say that when bonds are entered into, the arbitration is binding upon the outgoing and incoming tenants?—Yes; I believe that in ordinary cases that expense is not incurred, and I know of no evil arising out of the neglect of it.

You object to any interference with the customs of Lincolnshire, on the ground that no act of parliament could satisfactorily define the proper length of compensation suitable to each individual case?—I look upon agriculture, even now, in Lincolnshire, to be in its infancy; I think that the present system of valuation works so well, and adapts itself to all the new improvements, gradually I admit, but ultimately, that I think we have better security, and that we feel better protected than we should do by legislative interference.

In your opinion any act of the legislature should leave you at the same perfect liberty as you now enjoy as to your custom of compensation?—Yes; I think no act of the legislature could be so comprehensive as to embrace not only what is, but what may be hereafter, made in the shape of improvements in agriculture.

You have no doubt that your present system works well?—There is no doubt it works admirably.

And you wish that the legislature should, as far as Lincolnshire is concerned, let well alone?—Yes.

And that if any bill passed the two Houses, that care

should be taken not to disturb your present arrangements?—Yes, exactly so, except in one point; in one clause of the proposed bill, if that clause were carried out further it would be better; that is as to the buildings put up by the tenant; I think it would be an admirable thing, because by the law of the land the tenant cannot remove a building which he has attached to the freehold; and therefore if any act of the legislature would give protection to a spirited tenant not having sufficient building upon his farm to manage it in the way that he deems it proper to manage it, that would be productive of great benefit.

You think the custom of Lincolnshire is perfect, except so far as regards buildings?—I do not presume to say that; but I think it is better than it would be by a legislative interference.

Although it is well known you have admirable farm buildings in Lincolnshire, you still think that the outgoing tenant might find room for improvement?—In many instances; there are cases where the landlord might not find it convenient to build, or his tenure may be of that nature he may not think it right to build; we have a variety of cases where buildings are not now erected, but would be beneficial if they were erected.

The Lincolnshire landlords are, generally speaking, a wealthy body, are they not?—I believe so; they are a very respectable body, and they have the full confidence of the tenantry.

You have excellent courtyards in Lincolnshire, but there is rather a deficiency of shedding sometimes for the beasts?—Yes, there are in some instances, but upon large well-conducted estates I think they are pretty well off; but it is precisely in that situation that I say the legislature would confer a benefit upon the tenant farmer if it gave him the power of removing such buildings, or entitled him to compensation for such buildings as he might have erected on the farm.

Sir C. LEMON.] You said your reason for preferring the present system was that it was more flexible?—Yes.

If any plan could be devised by which an act of parliament could be rendered equally flexible, that would please you as well, would not it?—I should have such great doubts upon the subject, that I should, for one, prefer being as I am.

Do you not imagine that if an act of parliament did any more than merely establish a system of arbitration, that it would then be as flexible?—But I would never suffer the landlord and the outgoing tenant to come into collision, as they would do under your present system. Under our present system the outgoing tenant and the incoming tenant do not come at all in contact; they probably do not know each other: the outgoing tenant appoints his valuer, and the incoming tenant appoints his, and if there is any doubt they call in another party; the sum awarded is paid, and there is an end of the matter; whereas if you bring the landlord and tenant together, as it is proposed in this bill, in most cases there is on a tenant quitting some little ill-feeling between the landlord and the tenant; the landlord probably is not satisfied with the tenant's management, or the tenant may not be satisfied with his landlord, in either of which cases there is not a very friendly feeling, and if you bring them into immediate collision I should fear it would produce a great deal of mischief.

Is the present custom carried into operation between the landlord and the tenant, or between the two tenants among themselves?—Between the two tenants amongst themselves, unless the landlord is going to enter upon the land himself, then it is between the landlord and the tenant.

Then does not it introduce confusion where the incoming tenant has to make a bargain with the landlord, and at the same time to make a separate arrangement with the tenant; in that way may not those two interests clash?—I do not see how they could clash; the bargain would be between the incoming tenant and the landlord as for future occupancy; but the question between the landlord and the outgoing tenant, or between the landlord and the incoming tenant, is merely to ascertain the value of the rights to the outgoing tenant.

Is not that agreement between the landlord and the incoming tenant made with reference to the present condition of the land?—No doubt, I presume it is; the tenant would not be willing to give so much rent for a badly cultivated farm as for a good farm.

The incoming tenant takes the thing as it stands?—Yes.

And if the demand of the landlord is fully satisfied in that way, is not it a hardship upon the incoming tenant that he should pay the outgoing tenant also?—They are distinct properties; the outgoing tenant has a property in the soil, and the valuers have to estimate the value of that, quite distinct from any agreement between the landlord and tenant that is to succeed.

Mr. T. EGERON.] Must not the agreement of the tenant with the landlord depend mainly upon the sum that he has to pay to the outgoing tenant; that is, must not the rent that the incoming tenant agrees to pay to the landlord depend a good deal upon the compensation which he has to pay to the outgoing tenant?—I should think not at all; they are quite distinct properties. If a tenant has woefully mismanaged his farm the landlord has his action at law against him.

When the landlord makes an agreement for the rent to be paid by the incoming tenant, does not the tenant look at the farm, and seeing that it is in a certain condition, agree to pay the rent agreed upon for the future?—Yes.

And must not the sum he will have to pay to the outgoing tenant for improvements that have been made for a series of years, have a material influence upon the rent he would have to pay to the landlord for the future?—Unquestionably; and there is a benefit which the landlord obtains from having a good tenant, because by so much as the outgoing tenant has well managed the farm, by so much more rent is it worth to the incoming tenant.

Suppose a tenant has to pay £1,000 to the outgoing tenant for improvements which have been made by him, and the landlord asks a certain rent according to the state of the farm, if the tenant had to pay a larger sum than £1,000 would not it materially affect the question of agreement to be made by the landlord as to the rent?—The better condition the farm is in, of course the more rent the tenant can afford to pay; he will estimate the extra sum he has to pay to the outgoing tenant in the sum that he offers to his landlord, which the rent would be set against.

How does he know the amount he will have to pay until the arbitration has taken place?—He cannot until the arbitration has taken place.

Then the agreement for the rent between the landlord and the incoming tenant does not arise until the compensation has been settled?—The rent does not commence; it has been arranged before that; it does not commence till after.

How does he know what the actual amount will be?—If they see fit, they could keep the question open until after the valuation has taken place.

What is the actual fact; how is it actually done?—I never knew any difficulty in it whatever; the valuers

go and value, the sum is paid, and there is an end of it; the incoming tenant pays the outgoing tenant, and takes possession.

If the bond that you mentioned just now is not entered into, what power has the outgoing tenant of recovery?—He is in possession; that is one great security; he will take care not to give up possession until he has got his right; the bond is simply to make it a legal agreement.

Mr. MOODY.] To make the award binding?—Yes.

Not to affect the conditions of the award?—No, not in the slightest degree; if it is upon a very large scale, or if there is any ill-feeling or any probability of difference, then it is considered wise to have it legally done.

Sir C. LEMON.] You say that the tenant would not give up his farm until that bond is signed?—Not until he gets his value.

The resigning a farm is a question between him and his landlord?—The valuation takes place before the expiration of the tenancy.

Upon the supposition of the incoming tenant not being willing to sign that bond, what is the position of the parties then?—The outgoing tenant has his legal claim; how it is to be settled I do not know.

Mr. T. EGERTON.] What would be your objection to the act of parliament settling the question, that, according to your own account, is sometimes in dispute; that is, what would be the objection to the act of parliament settling the arbitration, or the degree to which upon the occupier it shall be binding?—It is because, as I said before, the custom of the country is better; it adapts itself to the changed circumstances in agriculture, which an act of parliament probably could not do; the system works well now, and why interfere with it?

CHAIRMAN.] The committee are to take it as your opinion, that if it should be found desirable to extend the custom that works so well in Lincolnshire to other parts of England, care should be taken not to interfere with the existing customs and practice of Lincolnshire?—Lincolnshire is probably as well cultivated a county as any in the kingdom, and those counties that are badly cultivated are only just beginning to improve; they would no doubt gradually assume the very system of valuation that we adopt in Lincolnshire, it answers so well there; I think it would be much better; I believe it is not confined to Lincolnshire or Nottinghamshire, but I believe it extends very generally over the northern counties; I cannot speak positively to it, but I have no doubt that other counties that are backward in cultivation will, as cultivation improves, adopt the same rule.

You decidedly wish that any bill that may pass should not interfere with the present customs of Lincolnshire?—Most assuredly.

Mr. MOODY.] Are the committee to understand, as an agriculturist, generally, that your opinion is that customs of this kind will spring up upon agriculture being practically improved?—Yes, exactly so; why should not the same effect arise from the same cause in other districts as it has done in Lincolnshire?

And upon any change of occupancy that takes place, the outgoing tenant is of course bound to give up, subject to the customs of the country, and the incoming tenant to take on subject to those customs?—Yes.

And the custom is in Lincolnshire that the payment to the outgoing tenant should be made by the incoming tenant, and not by the landlord?—Yes, that it should be paid by the incoming tenant, and not by the landlord; I have known instances in my own case where I have had tenants in bad circumstances; I have

nominally taken the farm into my own hands in order to secure the arrears of rent.

And you have stood in the place of the succeeding tenant to the landlord?—Yes; as soon as I am satisfied, I hand it over.

Then the sum to be paid by the incoming tenant to the outgoing tenant would be looked upon as a part of the capital to take the farm with?—Yes.

And not interfere with the future arrangements of the farm?—Not in the least.

You spoke of the improvements in Lincolnshire having taken place very gradually; some 50 years ago it was in a bad state?—In a wretched state; and I do not mean to say that the improvements have progressed gradually; I think we have made a very rapid stride; the introduction of the right of the outgoing tenant to compensation for artificial manures and underdraining was very gradual in its establishment.

And that probably has been raised, comparatively speaking, with the drainage of the land?—We began to drain in Lincolnshire before we began the system of artificial manure.

So that, taking it as a gradual progress, draining would be the first thing to be done; it would be useless to do anything else unless the land is drained?—Yes.

Would the draining become general if the custom to pay by the incoming tenant were established as you have named?—Gradually; there was a great fight, and it was a long time before it was fully established; it is now fully established.

And it became established by the improved system; that is, draining is part of the improved system?—It became established from the wisdom and justice of the measure; and the more it was investigated, the more it was found to be just.

You were asked as to custom, whether it would be binding in law; we have had it in evidence, from a lawyer of good authority, that custom has the force of law when fully established?—Custom has the force of law I am aware, generally; but as the custom of paying for improvements made has been gradual, a great part of it would not have obtained the force of law now.

As the custom becomes general and established, then it has the force of law?—Yes; everything that has been established within the last 20 years has not the force of law, but the old customs have the force of law.

Do you consider that the customs you have spoken of are binding; for instance, if you were in a position to be called in as an arbitrator, would you be considered to be bound to allow those things?—If called as a jurymen, I should certainly feel myself bound to give a verdict for the outgoing tenant.

Supposing there is any legal enactment stating that tenants are to be subject to this custom, and so on; that is to say, if arbitrators are to be called in, would not there frequently be the same difficulty arising from payments of awards made by those arbitrators that there are now when arbitrators are called in; supposing that the outgoing tenant and the incoming tenant cannot privately make their arrangement as to the payment to be made from the one to the other, an arbitrator would be called in to settle it between them?—No; the outgoing tenant and the incoming tenant, according to the custom of our country, never come into contact at all; the outgoing tenant appoints his valuer, and the incoming tenant appoints his valuer, and they appoint an umpire.

That is what is proposed by the enactment?—Yes, that is our custom; that custom is unquestionably the law of the land, and therefore why interfere with it?

Then supposing there to be an enactment adopting that same mode of doing things, might not there be the same difficulty arise as to the payment of the sum fixed in the award as there is now in your case occasionally; you spoke about the difficulty of altering customs?—I said that it was a question that other gentlemen who would be examined could answer better than myself; I do not know what, except an action at law, could settle it.

There would be the same variance of opinion that

there is now?—It must be final; the umpire must decide one way or the other.

In your case they bind themselves under penalty to agree to the award?—Yes; that is not a common practice, it is only practised where there are great difficulties and doubts.

CHAIRMAN.] In your opinion a new custom becomes valid when it has been established 20 years?—I have understood that to be the law of the land.

(To be continued.)

PRINCE ALBERT IN LINCOLNSHIRE.

(FROM THE MARK LANE EXPRESS AND AGRICULTURAL JOURNAL.)

We subjoin a report of the proceedings at the laying the foundation of the Great Grimsby Docks by his Royal Highness Prince Albert. The formation of docks upon such an extensive scale on the eastern coast of England is an event of great national importance to commerce directly and to agriculture incidentally. There is little doubt but that in due time Great Grimsby will be for the eastern coast what Liverpool is for the western—the great storehouse of foreign imports, the outport through which the manufacturers of England may be transported to all parts of the world. Visiting for the first time the county of Lincoln, and taking up his abode at Brocklesby, the seat of the Earl of Yarborough, it was not probable that agriculture would pass unnoticed by his Royal Highness when a fitting occasion presented itself; accordingly we find that, in returning thanks when his health was drunk, and in proposing “Prosperity to the Great Grimsby Dock, with the Health of the Chairman and Directors of the Dock Company,” his Royal Highness observed—

“I have derived the deepest gratification from this visit, as it has brought me for the first time to the county of Lincoln, so celebrated for its agricultural pursuits, and showing so fine an example of the energy of the national character, which, in this county, has succeeded in transforming the most unhealthy swamps into the richest and most fertile land (cheers). I could not, I am sure, possibly have seen finer specimens of Lincolnshire farming than have been shown to me by your noble chairman and my esteemed friend—(cheers)—who has not only made me acquainted with the most recent improvements carried on in this county, but also with the gratifying state of the relations between landlord and tenant existing here, which I hope may become an example to be followed in time throughout the kingdom” (loud cheers).

The tenant-farmers of the United Kingdom have reason to be grateful to His Royal Highness Prince Albert for this declaration of his approval of the “state of the relations between landlord and tenant” in Lincolnshire, the principle of tenant-right being universally acted upon; nor should

they be less thankful to the noble Earl of Yarborough, who made his Royal Highness acquainted with the facts which enabled him thus to mark his approval of the all-important principle of tenant-right. Would that all those short-sighted, uninformed legislators, who offer such pertinacious opposition to the Tenant-right Bill now before the House of Commons (a measure which merely goes to enable landowners not possessing the power, to make voluntary agreements with their tenants) had been at Brocklesby to witness the practical illustration of the principle in the persons of from five to six hundred of the Earl of Yarborough’s tenants drawn upon the lawn in front of the house, all mounted, and many of them upon their hunters worth from one to three hundred guineas each. Well might His Royal Highness be “greatly struck” with a sight such as no other country in the world could produce. To the healthful and reflecting mind, the commonly called imposing sight of ten thousand Cossacks in their most glittering costume would be sickening in comparison. Not greater is the contrast between the servile Cossack and the free Briton than between the tenant from year to year upon the usual terms and the tenant whose independence of mind and spirit possesses its natural elasticity from knowing that by enjoying “tenant-right” his capital is secure, his property protected during his lifetime, and his family not liable to be summarily dispossessed, robbed, and beggared, should he be unexpectedly called hence.

These remarks will doubtless be denounced as tending to sever the landlord from the tenant, as calculated to disunite those betwixt whom there should exist a feeling of common interest. We challenge the advocates of such hypocritical sentiments to show us a closer bond of union, a stronger feeling of mutual interest, than subsists between the Earl of Yarborough and his tenantry; and why? because the “relations of landlord and tenant” as between them, are based upon true principles of honour and justice, securing a sound reci-

procity of interest. No man would dream of suspecting the noble Earl of taking advantage of a tenant; yet, conscious of his own integrity of purpose, he experiences a gratification in placing the minds of his tenantry at perfect ease, by giving them agreements securing compensation for unexhausted improvements; in other words, "tenant-right."

Scarcely a publication having reference to the management of land now appears, in which the necessity of security to the capital of the tenant-farmer is not advocated. A work entitled "A Treatise on Landed Property," by James Boydell, has just been published, in which the author says:

"The contrast which is generally apparent in the produce and condition between land farmed by the owner of it, and that by tenants who hold it from year to year at the will of the landlord, shows how much is annually lost for want of the latter having confidence that they shall reap the benefit of their labour, skill, and capital; but it is shown more particularly when the same person farms land as a yearly tenant, and which he may have to give up at the expiration of any one year, and that which belongs to himself; when the ownership of land is so divided in parishes between owner and occupier, reference to the parochial tithe valuations will evidence this."

The "state of the relations between landlord and tenant" in Lincolnshire, which is pronounced by His Royal Highness Prince Albert to be so gratifying, would be equally so in other parts of the country; and yet, when a measure is introduced into the House of Commons to enable the owners of half the land in the kingdom, who are now precluded from embracing this "gratifying state of relation between landlord and tenant," to adopt the Lincolnshire principle, it meets with the opposition of those who should be the legitimate promoters of such an important object. This fact naturally leads us to enquire into the cause of such opposition. One solution is given by the author we have quoted above. He says—

"Under the present system of election the majority of the members chosen to manage the affairs of the nation are men who are not able to manage the most trivial concerns of their own without consulting their man of business, or solicitor, and for the most part are unacquainted with the real interests of the middle and lower classes. What can be expected from such representatives but the continuance of any system of abuse which may benefit themselves or their friends?"

The author further enquires, "But how are they chosen?" which enquiry he thus explains—

"We will endeavour to give a sketch of a county election as it has been too frequently conducted since the passing of the Reform Bill. We will suppose the county returns one member, and there are two candidates in the

field. The first step taken by them is to find out the owners of property, the employers of the voters, and the solicitors who act for such owners as have no personal interest in the contest, or can influence them by having through themselves or their clients advanced money to them. These are the parties on whom the result depends: very few of the voters have, in reality, anything to do with it, for they *give their votes as they are desired to do*. This does not extend only to the farmers and artizans, but even to the respectable tradesmen, who, if they will not vote for a candidate chosen by one of their larger customers, will not vote against him. It is not with candidates and their friends a consideration of what a voter himself thinks, or which way he is personally inclined to vote, but what influence they can get exercised upon him to make him vote as they please."

There are few persons but will recognise this as a true description, and at the same time deplore it as degrading.

Whilst, however, we express surprise at the want of business knowledge displayed by our representatives, it is difficult to repress indignation at the gross or wilful ignorance of some persons styling themselves land-agents (there are many honourable exceptions), who venture to offer opinions upon the subject of tenant-right. One of them, signing himself, it is well for his credit he does not give his name—"An Old Land-agent," Glamorganshire—recently addressed a letter to the editor of the *Chelmsford Chronicle*, in which is the following sagacious observation:—

"Let a man who is anxious for a 'tenant-rights' bill go into the Weald of Sussex, and take a farm there for the customary term of seven or fourteen years, determinable at the end of the first seven years on either party giving six months' notice to quit, and he will see the working of a 'tenant-rights' bill on a small scale, and not be very well satisfied with its fruits. He will find, what with claims for 'amendments,' and 'half-amendments,' 'cartage of lime and other manures,' and 'valuations of growing underwood in hedges and shaws,' &c., &c., that one-half his capital is swallowed up before he can enter upon the land, never more to be realized, until he in his turn comes to be the outgoing tenant."

Now it is perfectly manifest that this "Old Land-agent" has not yet learned the distinction between compensation for positive improvements, and payment for acts of husbandry, underwood in hedges, and other such-like matters, which have no connection whatever with the Tenant-right we advocate, and which is contemplated by the Bill now before Parliament. This Solon further observes—

"The Landlord and Tenant Bill, now before the House of Commons, has been read a second time, and has hitherto excited very little attention, the heads of the bill not having been brought very prominently before

the public. Indeed, I think I may venture to say, that not one farmer in a thousand knows that such a bill is under consideration; and being of opinion that all interference as between landlord and tenant will be productive of litigation, and injurious to the tenant, I sincerely hope that it may not pass into a law, at least as affecting England and Wales."

If not "one farmer in a thousand knows that such a bill is under consideration," it is quite clear the "Old Land-agent" does not know what the object of the bill is which he takes upon himself to criticise. We recommend this gentleman to inform himself upon this subject, by carefully perusing the report of the Agricultural Customs Committee, and the Digest of the Evidence; and if he do not alter his opinions, we shall set him down as an impracticable, of whom we have no hope.

LINCOLN, April 17.—The preparations for the reception of Prince Albert in this city, while on his way to open the Grimsby Docks, have been fully carried out.

Punctual to the time appointed, the Prince, with his suite, arrived at the railway station here by special train shortly before one o'clock. He was received on the platform by the Earl of Yarborough, as chairman of the Manchester, Sheffield, and Lincolnshire Railway, and by the Mayor and Recorder of Lincoln, who were presented to his Royal Highness by the noble earl. The civic authorities were waiting in open carriages in the yard, and the Prince having taken his seat in a carriage provided for him, the whole *cortège* formed into a procession which made its way to the Corn Exchange, where the respectable inhabitants of Lincoln and its neighbourhood had assembled to witness the ceremony of presenting a loyal address to the Prince.

The Aldermen and Town Council were then presented to his Royal Highness in succession, and the charity boys, who occupied a gallery over the entrance, struck up "God save the Queen," while many of the gentlemen and ladies below joined in the performance. The Prince immediately after descended from the handsome raised dais on which he had been standing, and where the address was presented to him, and proceeded to visit the Cathedral, where his Royal Highness and the corporation were received by the Lord Bishop of Lincoln, and the Very Rev. the Dean and the Very Rev. the Chapter. The Prince was conducted over the magnificent edifice by the Bishop and the Dean.

Shortly after two o'clock his Royal Highness Prince Albert left Lincoln for Brocklesby, the seat of the Earl of Yarborough. Arriving at his destination, his Royal Highness and suite alighted amidst every demonstration of loyalty and the firing of a Royal salute, and were rapidly conveyed to the Earl of Yarborough's residence, which is about two miles distant from the railway. The park, which was thrown open to the public, presented, from the long stream of visitors passing through it, a very animated appearance. It is of considerable extent, and is ornamented at different points with small lakes, and is well clothed with timber; but the beauties of the landscape are dependent more upon natural than artificial effects, and for the stately avenues of tall ancestral trees which form the approaches to the mansions of the great nobles in other parts of the country, there is here offered to the eye of the visitor the broad, homely, and unadorned features of English woodland

scenery. This absence of anything like ostentation is not without its charm, and certainly harmonised well with the rustic garb and aspect of the throng who crowded thither to welcome their Prince. The Hall is a substantial building entirely in keeping with all around it, and totally devoid of every thing like architectural embellishment or display. On the lawn in front of it were drawn up the Earl of Yarborough's tenantry, to the number of 500 or 600, all mounted, and presenting, as may be imagined, a very striking and interesting appearance. Many of them wore tight cords and top-boots, and firmly seated on their hunters, revealed at a glance the favourite pastime of the North Lincolnshire farmers. Whether young men or old, in their open and manly countenances could be traced the true yeoman spirit blended with the contentment which a succession of kind and liberal landlords never fails to inspire in their tenantry. A more interesting sight, without the slightest tincture of theatrical effect, could hardly be witnessed. The prince was greatly struck with them; for, after receiving the graceful welcomes of the Countess of Yarborough at the entrance to the Hall, he stepped out upon the lawn, and reviewed this regiment of mounted yeomen, expressing as he did so the high admiration with which they inspired him. Another important feature in "the high state" of our great nobility then presented itself, and the fox-hounds, which the huntsman vouches are the oldest and best in England, were seen hastening from their kennels to the centre of attraction. These came in also for a fair share of the Prince's attention. The interest which he evinced in them would appear to indicate that he is not indifferent, as some suppose, to the pleasures of hunting which for so many ages has been considered the noblest of our national pastimes. On returning to the Hall the Prince received in the drawing-room the Mayor and corporation of Boston, who presented to him an address, to which his Royal Highness returned the following reply:—

"I thank you very sincerely for the address which you have just presented to me, and am much gratified to find that you believe in the anxiety which I feel for the prosperity and encouragement of every undertaking that can improve and elevate the moral and social condition of the people of this great empire. The transformation of the district, which formerly was called the Lincolnshire Fens, from unhealthy sterility to their present high state of cultivation, is a proud testimony to the enterprise and skill of your country. I regret much that the limited time at my disposal during my visit to this neighbourhood precluded the possibility of my receiving an address in your borough. I will not fail to lay before the Queen your expressions of attachment to the institutions of the country and of loyalty and affection to her Majesty's person and family."

The ceremony concluded by the presentation of the different members of the corporation.

It was intended that his Royal Highness should employ the interval which now remained till the dinner hour in a survey of the rich country which surrounds Brocklesby, and of the system of farming which has transformed the fens and chalky wolds of North Lincolnshire into one of the finest agricultural districts in England. The skies, however, had prepared a great disappointment. Slight showers of snow, which had fallen at intervals during the forenoon, after a short but delusive promise of fair weather, began to increase and be more frequent as the day advanced. The wind rose till it blew a perfect tempest. The air became intensely cold, and loaded with drift, and before the evening closed in, the changing hues of the landscape had disappeared, and all was white with snow; a great disappointment this to the Earl of Yarborough and the farmers. As it was, his Royal Highness made a visit to the splendid mausoleum of the

Yarborough family, and to the pillar erected on the Wolds to the memory of the late Earl. From this pillar a splendid view is obtained, in fair weather, of the surrounding country, and the Yarborough estate is seen extending for many miles in every direction.

The dinner party at Brocksley was as follows :—His Royal Highness Prince Albert, the Marquis of Abercorn, Colonel Phipps, Colonel Seymour, Mr. T. W. Yorke, High Sheriff of Lincolnshire, the Earl of Carlisle, Viscount Hawarden, the Bishop of Lincoln, Sir Montague and the Lady Georgina Cholmeley, the Lady Mary Corbet, Mr. and the Lady Mary Christopher, the Lady Adela Capel, Sir C. and Lady Anderson, Lord Worsley, the Hon. Captain D. Pelham, the Hon. Mr. Monson, the Lord Mayor of London, Mr. Parker, M.P. for Sheffield, Mr. G. F. Heneage, Mr. E. Heneage, M.P.; Mr. Chaplin, Deputy Chairman of the Manchester, Sheffield and Lincolnshire Railway Company; Mr. Rendell, C.E.; Mr. Fowler, C.E.; the Rev. R. C. Brackenbury, rector of Brocksley; and the Mayor of Grimsby. While the great and titled were thus receiving the splendid hospitalities of Lord Yarborough, his lordship had not forgotten the claims of the poor. Two oxen were slaughtered for their especial behoof, and an abundant supply of fine home-brewed ale was added to complete the cheer.

In 1845, a company was formed for the purpose of making docks at Great Grimsby, on the north east coast of Lincolnshire, at the highest part of the mouth of the Humber, facing the sea, protected by the enormous natural breakwater of Spurn Point from the German Ocean. The works are of a stupendous character, and consist of a wet dock in area 35 acres, walled in on the left side by a wharf 2,000 feet long and 200 feet wide, and 36 feet high, having at its extremity a pier of great length, making altogether a water-side quay and pier nearly one mile long, as a passenger pier for steamers from Hamburg and the Baltic. The east side wharfing of the same length, and 670 feet wide, will be partly covered with warehouses. The passage to the dock will be through an entrance basin formed by two piers of an area of 20 acres, within which and alongside the piers vessels not requiring to enter the docks will lie. A steamer may discharge passengers and goods into the railway carriages and trucks brought right alongside, taking mails for Manchester, and silk and cotton goods, and going to sea again, all in one tide. This cannot be accomplished at Hull. The communications between the tidal basins and the two docks will be effected by two locks, the one 300 feet long and 65 feet wide, to admit the largest war-steamer at any time one hour before and one hour after low water. The other will be 200 feet long and 45 feet wide. The lowest depth will be 6 feet of water on the threshold of the dock gates. All ordinary classes of vessels and steamers will find water enough to enter and lie in the basin at any hour. The docks have a capacity for accommodating 700 average vessels, and a basin for 500; in all, 1,200. They will save twenty miles of navigation to Hull, and fifty miles from London to Hull, and enable passengers and mail-coaches to reach the metropolis in about six hours.

His Royal Highness arrived by special engine from Brocksley shortly after one o'clock. In the station his Royal Highness received the corporation of Great Grimsby, who presented a loyal address, which was suitably and graciously acknowledged by him. A procession was then formed of a train of carriages to convey the Prince, the directors and officers of the dock company, the corporation of the town, and the visitors of Brocksley, to the docks. Immediately after arriving at the entrance of the dock works, which was graced with an archway

of evergreens, the engine was dismissed, and the carriages conveying the Royal *cortege* were drawn along by a whole host of navies dressed in clean white frocks. The Royal procession on entering the docks took the outer line of railway, which was ornamented with flags and banners placed at equal distances from each other, and which commanded a view not only of the docks, but also of the Sheerness squadron anchored without. Upon arriving at the amphitheatre the Prince and suite alighted from their carriage, and the procession descending amidst the booming of a Royal salute and the enthusiastic cheers of the spectators, the ceremony of laying the foundation stone commenced. Colonel Humfrey, the Secretary of the Manchester, Sheffield, and Lincolnshire Railway Company, took charge of the inscription or depositum plate; Mr. Fowler of the glass vessel to hold the coins; Mr. Cole of the purse and coins; Mr. Adam Smith, of the trowel, which was an extremely handsome and elaborate piece of workmanship. The plan of the docks was appropriately entrusted to Mr. Rendell. The Prince placed a collection of new current coins of the realm in a glass vessel, and having closed the stopper of it, the Earl of Yarborough handed to him the trowel, and briefly explained the object of the works. The Prince then laid the stone in due form, and placed the glass vessel in the place of deposit assigned for it. The following was the commemorative inscription :—

“This first stone of the Great Grimsby Docks was laid by his Royal Highness Prince Albert, on the 18th day of April, in the year of our Lord 1849, and in the 10th year of the reign of her Majesty Queen Victoria—May God protect these docks!”

At this point of the proceedings the Lord Bishop of Lincoln (who, attired in his canonical robes, stood on the left of Prince Albert) invoked the Divine blessing on the work thus auspiciously begun.

At the close of the right rev. prelate's benediction, a Royal salute was fired, the various bands playing the national anthem. The Prince was then conducted, in procession, to a private tent prepared for his reception, while the assembled company took their seats in the pavilion, and awaited his arrival.

The lunch took place shortly after two o'clock, and was laid out in admirable taste, and on a scale of the greatest profusion, by the proprietors of the London Tavern. No less than 1,000 guests, many of whom were ladies, assembled to enjoy the hospitalities of the company.

His Royal Highness Prince Albert sat on the right hand of the Earl of Yarborough, who presided; and among the eminent persons present were:—Lady Mary Christopher, the Bishop of Lincoln, Colonel Phipps, Lord Worsley, Admiral Elliott, the Mayor of Manchester, the Mayor of Grimsby, the Marquis of Abercorn, Countess of Yarborough, Viscount Hawarden, Lady Sophia Pelham, Colonel Seymour, Mr. Christopher, General Thorne, Captain Maitland, Mr. Yorke, Mr. Hussey Packe, Mr. E. Heneage, Sir C. Anderson, the Rev. Mr. Attwood, Dr. Bartolomé, the Master Cutler of Sheffield, Lieutenant-Colonel Arthur, Sir John Nelthorpe, Lieutenant Parkes, Captain Elliott, Colonel Wellesley, the Hon. Captain Pelham, Lieutenant-Colonel Martin, Lady Nelthorpe, Mr. Adam Smith, the Mayor of Sheffield, Mr. A. S. Gee, Mr. J. M. Rendell, Mr. Turner, Mr. Hutton, Mrs. Hutton, Sir M. Cholmeley, the Lord Mayor, Lady Georgina Cholmeley, Mr. Chaplin, Lady Anderson, Earl of Mulgrave, and the Earl of Scarborough.

At the close of lunch, thanks having been returned by the Bishop of Lincoln,

The CHAIRMAN rose and said,—Your Royal Highness, my lords, ladies, and gentlemen, the first toast I have now the

honour to propose to your notice is "The health of her Majesty the Queen, and may God bless her!" (loud cheers.)

The toast having been drunk with great enthusiasm and amidst every possible demonstration of loyalty,

The CHAIRMAN rose again and said,—I have now the honour to offer to your notice the toast of "His Royal Highness Prince Albert" (cheers) His Royal Highness has been very graciously pleased to come to this place for the purpose of assisting at a ceremony the fame of which we hope will go forth, not only in England, but in all parts of the world with which the manufacturing interests of this country can be at all connected, as a most important undertaking. We have always considered it a most important undertaking, and his Royal Highness having been pleased to come here on the present occasion, shows that we have not been mistaken. His Royal Highness has been pleased to consider it an undertaking worthy of his Royal patronage; and when we consider the readiness with which he has associated himself with objects of national importance and advantage to this country, I am sure we must all feel highly honoured at having him here to-day, popular as he so deservedly is by the example he has always shown. His Royal Highness is now visiting a part of the country which, until the introduction of railways, was scarcely known. Some people used to suppose we could not move about in this county except in boats. It was therefore not surprising, that when it was understood his Royal Highness was coming among us, that great anxiety should be evinced to know whether the report was true. But I am sure his Royal Highness will admit that in no part of England has he been where he has been received with greater cordiality (loud cheers), with a more hearty welcome, and I trust I may add that there is no part of her Majesty's dominions where there is a more true devotion to her Majesty than among the subjects of her Majesty who are to be found in these parts. I am quite certain that if we should at any time find that her Majesty wished, in prosecuting a voyage from London to Scotland, from stress of weather, to remain quiet at anchor instead of knocking about in the roads, she will find in a few years a most quiet retreat in the Grimsby Docks. On the part of the company which has undertaken these works, I must beg leave to tender you our thanks for the honour you have done us by patronising these works; and I trust, from what you have seen, that you do not regret the task (for it is a task at this inclement season of the year) which you have undertaken. I now give you "His Royal Highness Prince Albert, and may God bless him!" (protracted cheering).

His Royal Highness PRINCE ALBERT rose to acknowledge the toast, and was most enthusiastically received. He said—My Lord, I return you my most sincere thanks that any exertions of mine should have met with your approbation, and to you, ladies and gentlemen, for the great marks of cordiality and kindness with which you have received the toast (cheers). The act which has this day been performed, and in which you have been so kind as to desire that I should take the chief part, could not otherwise but make a deep impression on me (cheers). We have been laying the foundation of a dock, not only as a place of safety, refuge, and refitment for our mercantile marine, and calculated to receive the largest steamers of her Majesty's navy, but it may—and I trust it will—be the foundation of a great commercial port (loud cheers). This work, in future ages, when we shall long have quitted this scene, and when, perhaps, even our names shall be forgotten (cries of "No, no, never"), will, I hope, become a new centre of life, with the vast and ever increasing commerce of the world,

and a most important link in the connection of the east and west (great cheering). This work has been undertaken, like almost all great enterprises in this great country, by private enterprise, private capital, and at private risk; and it shares also in that other feature so peculiar to the enterprise of Englishmen, that strongly attached as they are to the institutions of their country, and gratefully acknowledging the protection of the laws under which those enterprises are undertaken and prosper, they love to connect them in some manner with the authority of the Crown and the person of the sovereign (loud cheers). It is the persuasion of this circumstance which has impelled me to respond to your call, and come amongst you (loud cheers), as the readiest mode of testifying to you how strongly her Majesty the Queen appreciates and reciprocates those feelings (continued cheering). I have derived the deepest gratification from this visit, as it has brought me for the first time to the county of Lincoln, so celebrated for its agricultural pursuits, and showing so fine an example of the energy of the national character, which, in this county, has succeeded in transforming the most unhealthy swamps into the richest and most fertile land (cheers). I could not, I am sure, possibly have seen finer specimens of Lincolnshire farming than have been shown to me by your noble chairman and my esteemed friend (cheers), who has not only made me acquainted with the most recent improvements carried on in this county, but also with the gratifying state of the relations between landlord and tenant existing here, which I hope may become an example to be followed in time throughout the kingdom (loud cheers). Here it is felt that the mutual advantage of both does not depend on a mere written letter of agreement (cheers), but on that mutual trust and confidence which has always been considered a sufficient security to warrant the extensive outlay of capital and energy necessary to the carrying out of farming operations on a large scale (continued cheering). I now, in conclusion, beg to propose to you a toast which I am sure you will be all anxious to drink with me—"Prosperity to the Great Grimsby Dock" (cheers). Let us implore the Almighty to bestow his blessing on this work, under which alone it can prosper. I give you, "The Great Grimsby Dock and the health of the Chairman and Directors of the Dock Company" (loud cheers, in the midst of which his Royal Highness resumed his seat).

The CHAIRMAN then rose and said: Your Royal Highness, ladies, and gentlemen, I rise to return your Royal Highness thanks on the part of my colleagues in the direction of the Manchester, Sheffield, and Lincolnshire Railway Company, who have also the management of the Docks, inasmuch as, although in the first instance the railway and the Great Grimsby Dock were separate companies, now the railway and the dock companies have amalgamated. They were amalgamated because it was considered by the shareholders that they should be one undertaking. There was only one interest to be considered, and it was thought, and wisely, by the shareholders, that it would be a great advantage that there should be a good understanding between the dock and railway companies (cheers). If they had not been united it might have happened that what might have been obviously for the convenience of the public might not, for some reason or other, be carried out, but that, when the whole was under one management, then it was likely that one would not be at variance with the other, and that the public would have the advantage of finding that which I believe is novel in the railway world, viz., having a terminus on the water instead of the land—for what will these decks be but the terminus of the railway? They will be our eastern terminus, while our western terminus will, in fact, be

Liverpool. It is true we shall not be united under one management to Liverpool, but we shall to Manchester, and thence we shall run over a line in which this company has some interest (Hear). Your Royal Highness cannot fail to observe that this is a vast undertaking, and when I mention to your Royal Highness, and those of this company who are strangers to this district, that the act for these docks was only obtained in 1845—when I remind you of that circumstance, I think it will be generally acknowledged that very great progress has been made with the works. Perhaps strangers may not be aware of the enormous quantity of timber which is necessary to construct these docks; that it was obliged to be brought from the Baltic; and that we have succeeded, though it was prognosticated we should not, in shutting out the water; and we may consider it fortunate that we have succeeded, as we are at this moment nineteen feet below the water (cheers). The first pile of timber was driven in 1846. The measure of this work, that is, the circumference of it, is 1½ miles. You may have seen on your passage here the old dock. There the principle was to take the water into the land as far as possible. Here we take the railroad as far as possible into the sea. We have enclosed here 135 acres. Gentlemen, that's a large farm in some parts of England (a laugh). We have every reasonable expectation of concluding the works by the summer of 1851. We have no reason to doubt that this port will be connected by a through communication with this part of Liverpool during July of the present year. It has generally been supposed that it would be of great advantage to be able to transport from Manchester and the manufacturing districts by the means of this railway the goods they have produced by their enterprise and have to send abroad. There is also another great advantage, that in this county we produce a vast amount of food. That food will be sent into the manufacturing districts, and there consumed at much less cost than it can be now. On the other hand we shall receive from those districts and the neighbourhood of Sheffield coals, which may be brought into these parts of the country so as to be sold at a cost of 5s. or 6s. less than now, I could detain you for a long time, stating the advantages likely to flow from this railway and these docks, but I should not be justified, and I am sure you would not wish his Royal Highness should be detained longer than is absolutely necessary. I am sure we thank his Royal Highness sincerely for having done us the honour of attending on this occasion, and I think we cannot better show our sense of it than by doing all in our power to convince him that we desire to consult his convenience in every way (cheers). I am afraid that the arrangements I have made for his Royal Highness will oblige me to ask him now to leave, but I shall take an early opportunity of returning to continue to act as your chairman (cheers).

The Chairman and his Royal guest then withdrew, and were escorted to the train by a large portion of the assembled company.

On the return of the Earl of Yarborough a great number of toasts were proposed and duly responded to, among them—"The Bishop and Clergy of the diocese of Lincoln," acknowledged by the Bishop; "The Commissioners of Woods and Forests," for which the Earl of Carlisle returned thanks; the "Army and Navy," acknowledged by General Thorne and Admiral Elliot; the healths of Mr. Rendell, Mr. Adam Smith, and Mr. Fowler, for which they severally returned thanks. Several other toasts were also given. "The Ladies," "The Civic Dignitaries present," and "The Chairman and Vice-Chairman," being included among them.

His Royal Highness Prince Albert was rapidly conveyed to town in a special train, passing through Boston and Peterborough, reached the Euston Square station at a quarter before 10 o'clock, being the exact time fixed for his arrival.

VALUE OF LAND IN NORTHERN EUROPE.

[EXTRACT FROM JACOB'S OFFICIAL REPORT.]

SIR,—The following extracts will show the value of land in northern Europe, the cost of production, &c. :—

Page 33—"In West Prussia an estate of medium soil, the extent 4,200 acres, taken by the mortgagee at £3000."

"Another estate, in the best district, with a good house, with all the buildings in good repair, and the land in a high state of cultivation, the extent 2,800 acres, sold for £5,400."

"If these two instances may be taken as nearly the highest and lowest price of the average arable lands of the maritime provinces of Prussia, the highest limit will be 40s. the acre, and the lowest 15s. per acre."

2,000 acres, at 1s. per acre £100

10 hired labourers, at £5 10s. per acre 55

Total cost of labour on 2,000 acres £155

Page 70—"On a farm of 5,500 acres in the province of Lublin, 2,000 acres were divided between fifty peasants, and found with two oxen and geers each, for which they worked two days in a week on the 3,500 acres held by their lord. Thus, the cost for the labour of 50 men and 100 oxen was merely the value of 2,000 acres of land, of the value of one shilling per acre to rent, and some ten hired labourers at £5 10s. per annum. This, and the land-tax paid on the 2,000 acres, seem to be the total cost of labour and tillage, as the peasants keep the oxen they use on their own land and produce."

"The manure of the peasants' oxen is applied to their own land, and the manure of 60 milch cows, young stock, 9 horses, and 600 sheep is applicable to the lord's portion of about 3,000 acres of arable land."

"The 60 cows are let to a dairyman at 19s. per year each."

PRUSSIA—Page 45—"Best merino sheep are worth from 6s. to 6s. 8d., cows from 30s. to 65s., a few 75s. per head. A dairy of the best description let to a dairyman at 36s. per head per year."

POLAND—Page 86—"Cows here are of various races; the common breed of the country are worth about 27s. or 28s. per head; the Ukarine, from Padolia, averaging £3, and some few, very good, £4 10s."

"The lowest native breed of sheep are worth 3s. per head, and the best about 5s. 6d. or 6s. Merinos are very rare, and at present are worth 8s. or 9s. per head."

Page 47—"Implements are of the lowest description, and the cattle are attached by ropes—no leather used—ploughs ill-constructed, little iron about them; harrows, teeth and all, are of wood. In sowing, the seed is carried in an apron or tail of the frock, by the man who scatters it on the ground."

PRUSSIA—Pages 15 and 17—"Wheat is grown chiefly for export, and is conveyed on rafts down the rivers; these rafts are 75 feet long and 20 broad, rudely put together, and carry from 120 to 180 qrs.

"The wheat is thrown on mats, and frequently left uncovered for weeks, exposed to the weather. If rain fall, it soon causes the wheat to grow, and the vessel assumes the appearance of a floating meadow. The shooting of the fibres soon forms a thick mat, and prevents the rain from penetrating more than an inch or two deep, and the bulk is protected."

BLACKWOOD'S MAGAZINE v. FARMERS.

There has been in a recent number of "Blackwood's Magazine" such a palpable attempt at overrating the past importance of chemistry to agriculture, that we think it deserving of some notice.

"Of all the arts," says the reviewer, "there is none which draws its knowledge from so great a variety of fountains as practical agriculture." This is the text of his remarks, and he proceeds to say that "Chemistry especially exhausts herself in the cause of the husbandman; no branch of rural art is beyond her province and control. For what purpose does the plant spring up, the soil feed and nourish it, and the blessed sun mature its seeds? To adorn, no doubt, the surface of the beautiful earth, and to keep alive and propagate its species, but principally to nourish the animal races which supply food and yield their service to man. And upon the study of this nurture and feeding of the animal races how much intellect has been expended! Has the *stoker* who heaps coals upon the engine fire, and turns one tap occasionally to maintain the water level in the boiler, or another to give passage to the steam, &c.—has he, or has the man who curiously watches his operations, have either of them any idea of the long days of intellectual toil, of the sleepless nights during which invention was on the rack, of the mental dejection and throes of suffering under which new thoughts were born, of the lives of martyred devotion which have been sacrificed in order that the complicated machine might be brought to its present state of perfection?" So much by way of preamble; now for the pith. "Yet," says the reviewer, rising in indignation and scorn at such ingratitude and ignorance as he proceeds—"yet all this has been, and has been suffered by men now gone, though the ignorance of the humble workman, little more thoughtful than the iron he works with, fails either to feel or understand it. *And so too often it is with you who feed, and with you who look at the simple process of feeding stock.* Too many of our practical men, even of high pretensions, are themselves *only the stokers of the agricultural machines*, and, like ungrateful and degenerate children, *in their ignorance deny the head of the mother that bred and fed them.* If Science could forget her high duties to the Deity, and to the human race, she might leave you and your art to your own devices."

This is certainly complimentary. Tremble, ye rent-paying, tax-paying, tith-paying, cattle-fattening, corn-producing farmers!—tremble, I say, at

the fearful abyss on which ye stand: "you and your art are about to be left to your own devices." It is in vain that you should plead that you never before heard of this "mother which bred and fed you." It is in vain. Science is determined that her sons shall no longer lead lives of "martyred devotion;" they shall no longer have "long days of intellectual toil or sleepless nights during which invention is upon the rack." Hide your faces with shame, ye farmers, who are little more thoughtful than the iron (plough) you work with. It is all in vain: you and your art are to be left to your own devices. Such is the position you are in, when fortunately Science remembers her high duty to the Deity, and consents once more to work for you. But it seems that Scotland is herself especially obliged to Science. Dr. Johnson's definition of oats as the grain with which Englishmen feed their horses and Scotchmen themselves, was, it appears, getting out of date. "The Scotch were getting ashamed," says the reviewer, "of their natural food. Chemistry has, however, recently set the matter at rest, and is gradually bringing oatmeal again into favour. We believe that the robust health of many fine families of children now fed upon it, in preference to wheat flour, is a debt they owe, and we trust will not hereafter forget, to chemical science."* We hope they will not. For ourselves, we shall never see a rosy-cheeked son of Scotia without being reminded of this important result of chemical science. We are very glad to hear of this increased demand for oats in Scotland, as such have been in large recent arrivals in England from Scotland that our markets are completely glutted. When, however, this knowledge of the fattening, health-giving power of "*oatmeal porridge*," becomes once more fairly established, we should not be at all surprised to hear of an oatmeal famine in the land of cakes, and that we shall have to re-export the oats at present so liberally sent to us. We are sorry that the reviewer has not given us the name of the scientific man to whom Scotland owes so much. The well-known modesty of these gentlemen must, however, not be allowed to keep the name of such a benefactor of the human race any longer from our admiring gaze.

* These remarks are introduced in a review of Stephens' "Book of the Farm"—a work the excellence of which is too well known to need any remarks of ours.

HADLEIGH FARMERS' CLUB.

A very large meeting of the members of this club, and the agriculturists in the district, was held at the Town Hall, Hadleigh, on Thursday evening, Feb. 8th, for the purpose of hearing a lecture from Dr. Ryan, of the Royal Polytechnic Institution, of London, "On the Chemistry of Agriculture, and the System of Artificial Manuring." Professor Henslow was present, and many gentlemen connected with the farmers' clubs in this county and Essex, and probably more than 250 agriculturists were in attendance.

R. KERSEY, Esq., the chairman of the club, introduced Dr. Ryan to the meeting. He felt that it was scarcely necessary to make any remark on the subject of the lecture which that gentleman was about to give; but he might state that there never had been a period in the history of British agriculture which more required the assistance of scientific men than the present; and he was very glad to add that never was there a period when scientific gentlemen had been more willing to come forward and give to agriculturists the benefit of their researches and talents—(applause)—an assertion fully borne out on that occasion by the presence of their esteemed friend, Professor Henslow—(applause)—and of Dr. Ryan, who had come from London to give the club his gratuitous services. (Cheers.)

Dr. Ryan said that in his lecture he should not pretend to teach them farming, nor should he lead them to infer that he wished them to understand that science ought to supersede entirely the practical knowledge which they had been years in acquiring; but his object would be to point out, by a few simple illustrations, how science might become the handmaid of agriculture, and to teach them to apply more economically and more safely the knowledge they had attained at so much cost. He wished them to understand that the chemist, on a careful examination of a soil, or a plant, by considering the requirements of that plant, could teach them how to apply those various principles for promoting the nourishment of the plant in which the soil might happen to be deficient. To do so the most effectually this evening, he should have to go over a great deal of ground repeatedly trodden; and must treat his hearers as if they knew nothing whatever of science as applied to agriculture; and though many present—a large number doubtless—might be well informed on these points, he would rather they should go away dissatisfied with the simplicity of his style, than that a single hearer should depart without the elementary knowledge which he was desirous of

imparting. He wished to point out, in the first place, that plants as well as soils contained two sets of constituents—their organic and their inorganic constituents. To render this more simple and intelligible, he would suppose they took a piece of wood, having weighed that wood in the first instance. If they burned it, it would all soon disappear, except a few grey ashes, which would weigh much less than the wood. All that disappeared during the burning was called the organic portion of the plant, that which remained behind, the inorganic portion, consisting of certain salts which were necessary to the fertile condition of the land and to the growth of the plant. The organic constituents of plants were four in number, which he would first describe shortly, and would endeavour to show whence they were derived: and then treat the inorganic constituents in the same way. The first organic constituent was carbon, generally known as charcoal; the second was hydrogen, a perfectly invisible gas in its separate condition, and the lightest substance in nature; the third was oxygen, another gaseous substance abounding in nature, and actively engaged in all the operations and changes in the world around us; the fourth was nitrogen. These were the constituents which formed the organic portion of the plant. But if instead of burning the piece of wood he were to shut it in an iron box, and then throw it into a furnace, and allow it to remain there a considerable length of time, on opening the box he should find a piece of matter of the same size and form as the original piece, but not find ashes as if it were burnt in the open air; and if any one examined this matter he would say directly it was charcoal. This was one way of shewing that in vegetable matter there was carbon or charcoal. Again, if they took a quantity of vegetable matter of any description and burned it, they would find a gaseous compound given off, in which a mouse, an animal, a bird, or even man himself, would die—this was carbonic acid. They could see by one or two simple experiments that in the products, or in the vegetables themselves, there was charcoal. For instance, if instead of burning a piece of wood, they took a piece of stick, and dipped it in sulphuric acid it would become darkened, and if allowed to remain there sufficiently long, it would become charred. In the piece of wood would be carbon, or charcoal, hydrogen and oxygen, which were the constituents of water, and existed in most vegetable substances in the proportion found in water. Well, then, the sulphuric acid coming in contact laid hold of it,

and set free the charcoal. He would take a little sugar for the purpose of proving the point. Sugar, which they knew was a vegetable product, was composed of carbon, and hydrogen and oxygen exactly in the proportions found in water. If he held a piece of that sugar in the flame of a candle it would be observed that the portion to which the atmosphere had no access would become blackened, because charcoal was found there; or if he poured on it a little hot water for the purpose of partially dissolving it, and then poured sulphuric acid on it, the change alluded to would take place. As the piece of wood became blackened, so would the sugar, because the charcoal locked up with other bodies was set free. Thus they might ascertain the fact that vegetable matter contained charcoal. And they might also ascertain the quantity it contained. For instance, if they took exactly 100 grains of sugar and treated it in the way he had described, and collected the black matter and dried and weighed it, from the 100 grains would be found 60 or 70 of charcoal; what was lost would be oxygen and hydrogen in the proportions found in water. And not only was this the case in sugar, but in starch; if they poured on it sulphuric acid, the same change would occur, for in starch there were the same constituents as in sugar. A question very naturally arose in the mind, whence do plants obtain all this charcoal? They obtained it principally from the atmosphere, for he should have mentioned to them that as the inorganic constituents of a plant consisted of salts so these salts were principally derived from the soil while the organic constituents were derived from the atmosphere. Now, in the atmosphere there was a considerable quantity of charcoal, and were it not for the peculiar action of vegetables, the atmosphere would contain so much that the existence of animals would be prejudiced. Whenever an animal breathed it gave off its lungs a necessary food for plants, being carbonic acid, in 22 lbs. by weight of which were 6 lbs. by weight of charcoal and 16 lbs. of oxygen. Not only was this the case, but on burning any vegetable or animal substance carbonic acid was also produced, and also in large quantities, in the common process of decay or decomposition—a beautiful proof of the wisdom of the Creator that reproduction existed in the very process of decay: while we were performing the act of breathing, and when the process of destruction seemed going on, even then a new and important compound was forming necessary to the sustentation of vegetable life, and consequently to our own. (Applause) Now this compound, though so useful to plants, was destructive to animals—it was the same substance as formed charcoal, and they knew that many deaths had occurred from breathing charcoal. As all animals were giving it off their

lungs, and as it was produced by decay, our atmosphere must soon become so deteriorated by it, that it would no longer be fitted for the existence of animals. This matter escaped in great abundance from many natural springs, as in “the valley of poison” in the island of Java—the Grotto del Cane, near Naples, and other places; but that which was poisonous to man was necessary to the existence of plants; and during the day they were engaged in separating this carbonic acid, decomposing it, assimilating the carbon to form the future wood, and setting free the pure oxygen into the air. He would remind them again that even during the decay or decomposition of vegetable matter in the soil, roots and so forth, we were supplied even then with a very considerable amount of important vegetable food. The second constituent of plants was hydrogen. He had one or two bottles of it on the table, and from the condition of the bottles they would perceive it was colourless and invisible—it was also the lightest body in nature, and 100 cubic inches of it only weighed two grains. It was a very inflammable gas; on bringing a lighted candle to it it immediately took fire: and wherever there was a flame it was always owing to the combination of oxygen with this hydrogen. When hydrogen was burning it combined with the oxygen of the atmosphere, and produced water. Here we had a production of that useful element, water; and we could not light a fire for heating ourselves or warming our houses, without contributing to the production of water. Whence did plants obtain this hydrogen? There was no doubt at all that they obtained it principally from the water which existed in the atmosphere, for even in the brightest, warmest, sunniest, weather the atmosphere contained a considerable amount of water; and this was evident on a summer's evening, for they found the moment the earth was cooled down to a certain point, a heavy dew was condensed on the surface of the earth; thus the atmosphere was in some way taken up by plants for the purpose of being again assimilated to their constitution. Dr. Ryan here introduced some experiments with hydrogen, to show that, although the insides of the bottles containing it were dry the moment before, they were now quite wet from the combination of hydrogen with the oxygen of the air forming water. The third constituent of plants was oxygen, a perfectly invisible gas, but possessed of most peculiar properties. Its power to support combustion was most remarkable; if he placed in it a taper already extinguished, but a portion of the wick remaining, it would immediately rekindle it. This oxygen was also necessary to the process of common decay, for decay, they must recollect, was a process of combustion, called by the chemists invisible combustion. If a piece of iron were exposed to the atmosphere

or thrown into water, it lost its usual appearance and its lustre, and would be covered over with a sort of rust, called oxide of iron; yet, strange as it might appear, that process of rusting was a process recognized by the chemist as a process of combustion, and oxygen was necessary there. Plants might derive oxygen in two or three ways—from plants decomposing, and from rain falling, for whenever rain-water fell, it was found that it contained a certain quantity of free oxygen. The quantity the atmosphere contained was enormous, and it was laid hold of by the plants in the same way as other elements. And it was found that, if there was any plant which had a great attraction for oxygen near the root of another plant, the latter plant would suffer and sicken. This had been noticed frequently on meadow land, and it was sometimes found where “fairy rings” existed. In speaking of oxide of iron, Dr. Ryan showed that iron might exist in a soil in two states of oxidation—as a protoxide, or as a peroxide. Iron in the first condition looked out for oxygen, took up the free oxygen of the air, or that which was in solution with rain-water, and therefore in these cases vegetation was always sickly and diseased; but where the peroxide of iron occurred, no more oxygen was required. The fourth requisite constituent of plants was nitrogen, which was not merely found, as we generally find it, in ammonia, of which it was the basis, but existed very largely indeed in the atmosphere: in 100 parts by weight of common atmospheric air, there were 79 parts by weight of this particular gas. He should mention also that the oxygen which plants contained existed not only in water, but also in the atmosphere, there being 79 parts of nitrogen and 21 of oxygen. Supposing a plant did not obtain the nitrogen direct from the atmosphere, but from ammonia, a substance well known to them as a fertilizing agent, it would be found that in 17 lbs. of ammonia there were 14 lbs. of nitrogen and 3 lbs. of hydrogen. This ammonia, of which nitrogen was the basis, was given off during the process of animal decomposition, and existed in the atmosphere in two or three conditions. It existed there in the form of carbonate of ammonia, which the plant had the opportunity of laying hold of, thus having two principal sustenances, the carbonate of ammonia and the nitrogen of ammonia itself. It had been long noticed by many chemists, that after a thunder-storm, water contained that fertilizing agent nitrate of ammonia, formed by the union of nitric acid with ammonia. During the passage of the electric agent the water became decomposed; lightning, in passing through the atmosphere, decomposed it, producing nitric acid, a compound consisting of nitrogen and oxygen; at the same time the free hydrogen of the decomposed water

combined with the nitric acid, and so strong was the affinity, that they immediately united together and formed the fertilizing agent—nitrate of ammonia. This no doubt was one of the reasons why, after thunder-storms, vegetation looked more beautiful than before, and probably a reason why, in places where thunder-storms were more frequent than they were here, vegetation looked so much better. Thus they were beautifully taught by chemistry the wisdom and power of the Almighty in providing on occasions like that, which men were formerly in the habit of imagining were intended for some judgment, even the lightning itself was sent on an errand of mercy to produce for the plant a fertilizing matter (Loud applause). He should now proceed to discuss the inorganic constituents of plants, and should take one particular plant for the purpose of enabling him to point out the principal constituents found in its ashes. He should take wheat for an example. Its inorganic constituents were silica, potash, soda, lime, magnesia, alumina, sulphuric acid, phosphoric acid, and chlorine. Of course the inorganic constituents of a plant would vary according to the character of the soil, the locality in which it was grown, and the manure applied to it. The substance silica, which was all-important to the growth of a plant, was known familiarly under the form of sand; flint also was formed of silica. In the general condition of flint, sand or silica, it was not soluble, but before it could become the food of a plant it was necessary that even flint or sand should be reduced to a soluble condition, and it would be seen that nature found means for rendering the substance soluble. The chemist was aware that if he burned silica or sand in contact with soda, potash, or lime, he could thus form a sort of glass—in fact he had a piece of glass in his hand, formed principally of sand or powdered flints and soda. If these were combined in proper proportion, glass would be formed; and this process then, nature seems to adopt, taking care when silica was required for a plant to introduce into the soil certain portions of alkalis, potash, soda, or lime. For example, the substance upon the outside of wheat-straw, and various other vegetable matters, was a kind of glass; and were it not for that glass the straw itself would be unable to bear the weight of the ear, and consequently the ear would not be exposed to the ripening influences of the sun and the atmosphere. By-the-bye, he might as well state at once that all the substances he had mentioned, with the exception of the three last, were metallic substances—metals existing in nature, in much greater abundance than was supposed. They generally heard of only 12 or 13 metals, but the chemist was acquainted with 40 or 50, and there was hardly anything we ate, drank or breathed, that

was without them. He came in the next place to potash, which was necessary to the soil, especially where silica was present; it was an oxide of a beautiful metal named potassium. The sources both of silica and potash might be easily described. In the first place, in the disintegration of rocks exposed to the atmosphere for centuries after centuries, the silica became reduced to almost the state of powder, and building stones exposed to the atmosphere lost their sharpness, and would be evidently frittered away by the influence of the elements, as they were termed; so rocks became frittered down, and the silica of the soil produced; but whenever we burned a land plant we always found potash in the ashes. Men engaged in burning timber for forming ashes to be sent to the commercial market found this to be the case; and every description of land plant contained more or less of this potash. But in sea plants soda was found, and soda and potassium were so like each other in appearance that the chemist had scarcely any better or easier plan of distinguishing the one from the other than by observing the peculiar colour of the flame they produced when on the surface of water. Both decomposed water when thrown on it. The great source of soda in marine plants, or land plants, was common salt. The next article was lime. This they were perfectly aware existed in nature in very considerable quantities and various forms; perhaps its most abundant in the very common one of chalk or limestone, and these were perfectly insoluble in water; and before lime could become useful to plants as food, it was necessary that some process should be adopted in nature for the purpose of making it soluble before it could be taken up—it was necessary that even the solid limestone, or solid marble, or chalk, should be reduced to a soluble condition; and a beautiful process was adopted by nature for the purpose of accomplishing this end; and he would point out an experiment for the purpose of illustrating this. He must remind them that lime was soluble in two states. If they took a piece of limestone and burned it, they would drive away the carbonic acid, and then nothing would be left but lime. If they placed some of that lime in pure water it became dissolved, and lime-water was produced. If they exposed that water to the atmosphere, the lime became again insoluble. But, if instead of giving one portion of carbonic acid, they gave another or double proportion, it became a bicarbonate of lime, and this lime became much more soluble; and this was the condition in which lime existed in most waters, springs, and rivers; and thus the plant was enabled almost immediately to take it up. (This part of the lecture was illustrated by various experiments.) He would now pass on to the next ingredient in the ashes of wheat, viz., magnesia. It was necessary

to say but very little on this substance; one of the great sources of it was the magnesian limestone, where by the agency of certain processes in the earth it became fitted for absorption by the plant. Alumina formed the basis of clay; the larger the quantity of it, the stiffer the clay, and in those places where there was a deficiency of alumina it was a great indication of sterility. He had seen land lately where there were large quantities of the fertilizing agent, phosphoric acid, but for want of alumina the land was worthless. At once then they would infer that if, on an examination of the soil, they found an absolute deficiency of this substance, it was necessary for the growth of plants, and the most obvious plan for rendering that land fitted for the crop required from it, was to place thereon by some artificial means the substance required, and this was the use of sometimes conveying clay to parts of the soil. In some instances sand itself became a valuable artificial manure. (Loud applause) There were cases where there was a deficiency of silica, and the application of silica was the very means of reviving that land also. (Hear hear) He should have to call their attention for a short time longer to the nature of the three acids he had mentioned. The first was sulphuric acid, the second phosphoric acid, which was a substance which combined with lime to form what was called bone-earth; and chlorine, which combined with lime to form common salt. The sources of sulphuric acid were very various; one of the most common was gypsum, or sulphate of lime, which was found in various parts of the world. In almost every soil where vegetation had been going on under careful management for a considerable time, there were found not only small portions of sulphate of lime, but of the sulphates of soda and potash. Phosphoric acid was a compound, consisting of the well-known element called phosphorus. If they took a piece of phosphorus, and exposed it to the air, they would see a quantity of smoke; but if, instead of allowing it to pass into the air, they put it into a bottle closed, they would find it very acid, and this would be the phosphorus *plus* the oxygen, or phosphoric acid. If combined with lime, it combined with it with considerable violence and became phosphate of lime, and would resemble bone phosphate, or the phosphate of which bones were formed. After introducing an experiment with phosphorus, which was called by chemists an elementary body, because they could not decompose it—the experiment giving a beautiful example of what was called the indestructibility of matter—he said that, in order to obtain phosphorus, they must first of all take the bone of some animal, which was composed like plants, of organic and inorganic constituents; throw the bone into the fire to get rid of the organic

parts, and then the earthy parts left would be phosphorus. Here the lecturer introduced experiments as examples of the various changes called chemical attractions going on around us. Phosphoric acid was found not only in the bones and secretions of animals, but in the various rocks, and in this county an immense quantity was found in a source most abundant, viz., in that of coprolites. He had had an opportunity frequently in the course of his analyses of comparing the super-phosphate made from bones with that made from coprolites, and was satisfied that that made from mineral sources was equal to the other; he was the more anxious to mention this, because he found in speaking with practical farmers there was an impression that the super-phosphate of lime now employed as a manure should only be made from the bones themselves. (Applause) He now came to chlorine: it had its source principally in common salt. In its separate condition it was a gas distinguished by its peculiar green colour, and its remarkable action on various vegetable products. After introducing one or two experiments with chlorine for the purpose of shewing its peculiar characteristics, the lecturer stated that it had been his intention to have gone to greater length, and to have shewn the application of certain manures to certain purposes; but he found that the subject was already far too large for one lecture, but he hoped the opportunity would not be lost of resuming it. He would rather leave the topic for a separate lecture. He had been already far too diffuse, but he had been so with an honest feeling—for the purpose of leading them through the elementary portions to those portions which they would be better able to understand, the analysis of soils, and the application to those soils of artificial manure. (Much applause)

Mr. CALEB KERSEY said that the applause which had followed Dr. Ryan's most instructive and interesting lecture, and which had been evinced in the course of it, quite warranted him in the assurance that he was expressing not only his own feelings, but also that of the large audience present, when he stated the high gratification he had experienced. They had heard that Dr. Ryan had come before them gratuitously, and he had just stated that this would not be his last lecture. (Applause) When they saw gentlemen like him, of the very highest scientific attainments (and he was glad to find that Dr. Ryan was not the only gentleman present possessing such attainments), devoting their time and talents to give the farmers the benefit of their instruction, they ought to feel under the greatest obligations to them; and he would therefore propose that through the medium of the chairman of the club they should convey to Dr. Ryan their warmest thanks for the very valuable

and interesting lecture he had given them. (Loud cheers)

Mr. J. RAND seconded the motion.

Mr. R. KERSEY expressed himself as highly gratified in being the medium of conveying to Dr. Ryan the thanks of the meeting for his very instructive and eloquent lecture. It afforded him much pleasure that the learned doctor would condescend again to visit the Hadleigh Farmers' Club, when he was sure that all its members would give him a hearty and cordial reception. (Loud applause)

Mr. BARKER (chairman of the Oakley Farmers' Club) said that perhaps as a stranger he might be allowed to add his thanks for the very instructive—he was going to say learned—lecture they had just heard; but the word “learned” would be misapplied; for the subject had been discussed in so plain a style that few could go away without having received a very large amount of instruction. (Applause) He should not have presumed to have said anything but for having an object which he would explain before sitting down. Much as they were indebted to Dr. Ryan, and much as agriculture stood in need of all the assistance it could receive at the present moment, he wished to observe that it was not in the power of gentlemen of Dr. Ryan's attainments to devote their time to the forwarding of that knowledge of chemistry which the agriculturists required. Sanguine though he was on the subject, believing that chemistry was destined to be the handmaid of good farming, and that it would be the means of economizing the resources of farming, he thought that the agriculturists often misapplied material for the want of a correct knowledge of the peculiar qualities of soil and plants; and till they attained this knowledge they must be indebted to scientific gentlemen for the valuable information and assistance which they were able to afford. He had known many instances of chemistry being resorted to, and failing; and on this account many were prejudiced against the idea that it could be of any great assistance to agriculture. But chemistry, in reference to agriculture, was only in its infancy, and had not received that assistance from practical farmers which it ought to have had. The reason for this was, not that the farmers were not willing—for he believed they were willing to forward the views of scientific men and to render them all the assistance they could—but that there was a want of scientific knowledge, without which their efforts were apt to prove unsuccessful. (Hear, hear!) They wanted gentlemen who had the attainments of Dr. Ryan to visit and stay with them—(Hear, hear!)—so as to see that their chemical knowledge was carried into practice, and to understand the qualities of the soil and analyze it. (Hear, hear!) If the farmers could have that assistance, no doubt they

would not be long before availing themselves of the help of chemistry. But it should be remembered that the time of scientific gentlemen was far too valuable for them to continue long with the farmers; he should therefore like to see the patrons of agriculture come forward to introduce such a class of men to stay awhile amongst the farmers. When he saw large subscriptions raised amongst the farming body, he thought they might be more profitably appropriated in supplying them with the knowledge they stood so much in need of. (Applause.) He should be glad to see some portion of the funds of the Royal Agricultural Society appropriated to such a purpose as this. (Loud cheers.) The soil contained certain compounds necessary to the growth of plants, and they could not economically and profitably apply their resources without first having correct analysis of the soil—whether chemistry had gone so far as to carry that out, he could not tell. What the farmers wanted was, that chemists should come among them, and take into consideration the

qualities of plants—the components of them he thought was pretty well understood. (Hear, hear.) They were making a large outlay every year in artificial manure and other ways, but he was sure it was expended with great loss to the agricultural body, because they were destitute of a knowledge of the properties of the soil and of the assistance it stood in need of. (Loud applause.) He thanked Dr. Ryan for his lecture, and trusted that all present would again attend when he renewed his subject. He for one, though he had come a long distance, should make a point of attending any lecture which Dr. Ryan might give at Hadleigh. (Loud cheers.)

Dr. Ryan returned thanks for the very kind manner in which his lecture had been received, and trusted that on some future occasion he should be able to meet his Hadleigh friends again, and to bring before them some matters which would instruct them, as had been said, how to economize the resources they already had. (Loud cheers.)—Bury and Norwich Post.

MACHINERY AND LABOUR.

It has been often observed that no class of society rivets the common prejudices of mankind more closely and durably than that portion of it which is employed in cultivating the soil. Condorcet remarked that mankind in general persist in their prejudices long after they have been overturned by reason and experience; and farmers continue in their established routine long after every other class of society has seen its mistake, and has allowed reason and experience to convince the mind and to make alterations. It is impossible to find any sufficient reason for the obstinacy with which the southern farmers of England yet adhere to the absurd notion that thrashing-machinery diminishes labour, and would throw out of employment the idle hands that must be employed. On no point of social economy has the agricultural world exposed itself more openly to ridicule, and on no point have the very first principles of remunerative employment been so palpably violated. The object of all machinery is to diminish labour on non-productive points, and allow the saving that is thereby effected to be expended in increasing the quantity of the raw material. The farmer leaves his lands undrained, foul, and wanting manure, and expends his capital in thrashing his crops by flail at five times the cost of doing it by machinery; and the extra outlay is totally unproductive, for whatever price he pays for thrashing one quarter of wheat he gets only eight bushels of grain; and if the money was expended in improving the land the produce

would be increased. But to convince a farmer of this very simple and obvious truth seems beyond all possibility; reason, facts, and eyesight all fail in making the least impression on the adamant coat of armour within which the farmer has encased himself. They universally complain of the expenses that must be incurred, and at the same time they continue an expenditure that takes the money from their pockets and returns no value for the use of it. The slow process of thrashing by the flail very ill accords with the rapid performances of modern intellect, and acts as a break on the wheel of railroad speed that is now in full action in almost every human operation. Sluggishness of action shows a dull mole-eyed conception, that plods in the world's mud without once raising itself beyond the earth-born ideas that travel within the narrow circle of a slavish gin-horse track. Nothing more clearly shows the inferiority of mental conception than the obstinate adherence to obsolete prejudices and antiquated customs that have been elsewhere overturned by an approved experience.

The original cost of the erection of two or three timber barns on a moderate-sized farm, and the necessary repairs that are required by timber and thatch over stones and slates, are greater than the expense of building a thrashing-machine and a barn to contain it, and the keeping of it in going order; but prejudice and custom are able to overlook this certain fact at the very outset; and the very palpable absurdity has seized the minds of the

landowners who have to be at the expense of the erections, as well as of the farmers who have to make the yearly superfluous expenditure. They all think the draining of land is too expensive an operation, but they do not grumble to pay the non-productive cost of thrashing by flail, even when a cheaper process has been long known and used. A great anxiety is shown to make original discoveries, when, at the same time, the useful facts that

are known are despised and neglected. If the manufacturers had shown such absurd entertainments of useful theories, the superiority which they have acquired and maintained would not have reached the envy of the world. The government now advances money at 6½ per cent. to drain wet lands of superfluous moisture; a general enlightened education is equally necessary to drain the farmer's mind of obsolete prejudices. J. D.

FRACTURED LIMBS OF HORSES AND CATTLE.

SIR.—In your journal of the 19th ult., there is a case of broken bone in a beast belonging to Mr. George Creed, of Boar Hunt Farm, Hampshire, taken from the "Hampshire Telegraph," said to be an extraordinary case; and certainly it may appear so to those not acquainted with the animal physiology, but to those who have witnessed many such cases, it appears the most extraordinary that so many valuable cattle and horses should be consigned to death without any attempt being made to cure them when such an accident has occurred. The fact is, that frequently a cure could be performed as soon, in many cases, as in a common strain. For the encouragement of those of your readers, whose horses or cattle may have the misfortune to fracture their limbs, I have sent you for insertion in your journal the following cases in a brief form:—

CASE 1, June 2, 1837.—Mrs. Barstow, Crab-Tree Bank, near Sheffield, had a powerful draught horse, which broke his thigh about six inches above the hock. All that saw the horse were of opinion that he must be destroyed, but on my arrival I said No; and further said, rather than destroy him without a trial to cure, I would be 20s. towards an attempt to cure. To this the owner agreed. The thigh was therefore temporarily set, till he could be got to my stable, when he was then put into slings and the thigh properly set, and in ten weeks and a day the horse was taken from the slings, exercised for a week, then turned to grass for a month, and then gradually resumed his usual work. Some idea may be formed of the size and strength of this horse when I tell you that in about six months after he was sold to Mr. J. Vail, of Norton Woodsetts, who informed me that he some time after took from Sheffield to Woodsetts two tons five cwt. of manure, besides the weight of the cart, much of the road being up hill.

CASE 2.—Mr. R. Gillatt, Norton Lees, near Sheffield, had a cow that broke her thigh by falling on the pavement three weeks before calving: it was a compound fracture. The cow was put under a shed, but not tied up. I then proceeded to set the bone, which was very much shattered, and the wounds large. During the time of cure, six inches of the whole trunk of the bone was thrown off; nevertheless, in the course of three months, the cow could walk to the pasture; though the limb was a little shorter, she could travel well; meanwhile, she calved, and did well.

CASE 3, Dec. 6, 1847.—Mrs. Dmgworth, Worlow Hall, near Sheffield, had a cow which broke one of her hind legs about midway betwixt the fetlock and hock. The cow was put into a stall to herself, and tied by the neck; the leg was then set, and some short litter allowed. Twenty-six days after she calved and did well; she had her liberty to lie down at

pleasure. In ten weeks she was sound, and walked out to water.

CASE 4, Dec. 9, 1847.—Mr. Kay, Shiregreen, near Sheffield, had a heifer which broke a fore-leg a few inches above the fetlock joint. I had her put into a stall to herself, and tied up as usual; I then set the leg, allowing her to lie down as she pleased. In ten weeks she was quite sound.

CASE 5.—Mr. Joseph Nicholson, Sheffield Park Farm, had a cow's thigh broke about six or eight inches above the hock. The cow was tied up in a stall to herself; the thigh was then set, and a little short litter allowed; she was then left to lie or stand as she pleased, but not on any account to be disturbed. The bandages and splints remained on the thigh for nine weeks, when they were taken off, and the cow turned out to grass perfectly sound.

CASE 6, Dec. 21, 1847.—Mr. Thomas Genn, Tinsley, bought a thorough-bred young bull of a Mr. K—, of the same place, which had broken one of the fore-legs about midway betwixt the fetlock and knee. It had been broken about thirty-three hours before I was called in, and was much injured from not being set sooner; and he had to be removed in a cart to Mr. Genn's house, about a quarter of a mile distant. In the course of cure, about three inches of the trunk of the bone was taken from the wounds. In eleven weeks he was able to walk, though the foot was turned outwards a good deal, the leg crooked, and the wounds did not heal for some time, from several pieces of bone being at intervals thrown off. Ultimately the bull became sound, though his leg was a little crooked. He was allowed to lie down.

At the present time, a Mr. Lee, of Wortley, near Sheffield, has a cow which broke her thigh. Mr. L. applied to a person in the neighbourhood, but he gave him no hopes of her getting well, though he temporarily set it; and the cow remained for five or six weeks before it was put in a way for cure; still, I believe it will recover, though a great portion of bone which has been exposed will have to be thrown off.

REMARKS.—The first thing to be done in such cases as the above, should any of your readers' cattle happen such an accident, is to bandage up the fracture, applying the best splints that are at hand, and keep them from moving the limb as much as possible, till a competent person can be got to set it.

Yours, &c.,

JOHN NELSON, V.S.

Highfield, Sheffield, March 22.

P.S.—In the above cases slings were only used to the horse. —Mark Lane Express.

STALLIONS FOR THE SEASON.

Name.	Colour.	Age.	Pedigree.	Performances.	Principal Performance.	No. of winners out by.	Sire of	Standing at	Apply to	Price.
Accident.....	brown.....	14	by Camel, out of Miss Breze, by Phantom.....	never appeared.....	—	9	Intrepid.....	Whecloch H., Sandbach	—	10 gs.
Alarm.....	bay.....	7	by Venison, out of Southdown, by Defence.....	started 17, won 13.....	won Ascot Cup.....	untried.	—	Hampton Court.....	—	15 gs.
Ampino.....	bay.....	9	by Velocitee, out of Jane Shore, by Wolf.....	started 5, won 3.....	won Ascot Derby.....	untried.	—	Rockley, Marlborough.....	Mr. Jones.....	5 gs., h. b. 2 gs.
Archy.....	bay.....	10	by Camel, out of Garcia, by Octavian.....	started 8, won 5.....	won £1,000 at Newmarket.....	untried.	—	Stockbridge.....	Mr. Isaac Sadler.....	5 gs., h. b. 3 gs.
Aristide.....	brown.....	10	by Physician, out of Solace, by Longwaist.....	started 60, won 18.....	won Liverpool Cup.....	untried.	—	Stockbridge.....	Mr. Y. King.....	10 sovs.
Ascot.....	bay.....	17	by Reveller, out of Angelica, by Rubens.....	started 8, won 4.....	ran second for the Derby.....	6	Sponge.....	Red Lion, Atherton, Esq.....	Mr. J. Briggs.....	7 gs., h. b. 2 gs.
Assault.....	bay.....	4	by Touchstone, out of Ghuznee, by Pantaloon.....	started 8, won 6.....	won the Champagne S.....	untried.	—	Easby Abbey, Richmond, York.....	R.M. Jaques, Esq.....	10 gs.
Astracian.....	bay.....	19	by Chateau Margaux, out of Olander, by Sir David.....	started 5, won 1.....	won Queen's Plate.....	1	Astra.....	Normanton Park, Stamford.....	—	1 sov.
Auckland.....	brown.....	10	by Touchstone, out of Maid of Honour, by Champion.....	by started 9, won 5.....	won £703 at Ascot.....	1	Sir Oliver.....	Stoke's Farm, Wokingham.....	—	10 gs.
The Bard.....	bay.....	16	by Waverley, out of Castellina, by Cashel.....	started 22, won 10.....	won Produce S. at York.....	14	Fiddlesring.....	Shipton, York.....	Mr. Watson.....	5 sovs., h. b. 2 sovs.
Barnacles.....	chestnut.....	16	by Cain, dam by Bourbon.....	started 25, won 11.....	won Goodwood S.....	untried.	—	Pulteney Mews, Bath.....	Mr. J. D. Carter.....	thoroughbred gratis, h. b. 2 sovs.
The Baron.....	chestnut.....	7	by Birdcatcher (Irish), out of Echidna, by Eco-nomist.....	started 12, won 5.....	won St. Leger.....	untried.	—	Stockwell, Surrey.....	J. Lowry.....	12 gs.
A Bay Horse.....	—	12	by Mulatto or Starch, out of Young Pictuaria, by Rainbow.....	started 4, won 1.....	won £100 at Ilampton.....	untried.	—	Stockwell, Surrey.....	J. Lowry.....	2 gs.
Bay Middleton.....	bay.....	16	by Sultan, out of Cobweb, by Phantom.....	started 17, won 7.....	won the Derby.....	77	Flying Dutchman.....	Danebury, Stockbridge.....	—	25 gs. (20 mares fall, 10 sovs.)
Beiram.....	chestnut.....	20	by Sultan, out of Miss Cantley, by Stamford.....	started 7, won 8.....	won Drawing Room S.....	14	Hydrancea.....	Burghey, Stamford.....	Lord Exeter.....	10 sovs.
Belzoni.....	brown.....	26	by Blacklock, out of Mammella, by Dick Andrews.....	started 20, won 11.....	won Ascot Outlands.....	12	Mungo Parke.....	Lutterworth, Leicestershire.....	Mr. Lucas.....	10 gs., h. b. 3 gs.
Birdcatcher (Mrs.).....	chestnut.....	16	by Sir Herenties, out of Guccioli, by Bob Boozy.....	started 15, won 6.....	won the Madrides.....	42	The Baron.....	Easby Abbey, Richmond, York.....	Rich- R.M. Jaques, Esq.....	16 gs.
Birkenhead.....	brown.....	6	by Liverpool, out of A rachee, by Filho da Puta.....	never appeared.....	—	untried.	—	Camp Lodge, Maze, Ireland.....	—	4 gs., h. b. 2 gs.
Blackstrap (late Euston).....	black.....	7	by Jerry, dam by Dr. Syntax.....	started 6, won 3.....	won 85 sovs. at Wolverhampton.....	untried.	—	Whitegate, Delanere R. White.....	—	5 gs., h. b. 3 gs.
Bran.....	chestnut.....	18	by Humphrey Clinker, out of Velvet, by Oiseau.....	started 8, won 6.....	won Swinley S.....	22	Our Nell.....	Osterley, Shrewsbury.....	Mr. R. Chapman.....	6 sovs., h. b. 3 gs.
Cesar.....	bay.....	13	by Sultan, out of Cobweb, by Phantom.....	started 6, won 3.....	won the Riddlesworth.....	7	Teicle.....	Newmarket.....	T. Starling.....	10 gs., h. b. 5 gs.
California (Bro. to Riddlesworth).....	chestnut.....	16	by Emilius, out of Flagree, by Soothsayer.....	never appeared.....	—	1	The Mease.....	Bushbury, Wolverhampton.....	Mr. Phillips.....	5 gs., h. b. 3 gs.
Calmuck.....	bay.....	16	by Zingance, dam by Rubens.....	started 27, won 12.....	won Gorhamby S.....	untried.	—	Stockwell, Surrey.....	J. Lowry.....	10 gs., h. b. 4 gs.
The Caster.....	bay.....	9	by Emilius, out of Castaside, by Mameluke.....	started 11, won 4.....	won the Levant.....	untried.	—	Slednere, Malton.....	—	5 gs., h. b. 3 gs.
Catsby.....	bay.....	9	by Slaue, out of Cobweb, by Phantom.....	started 1.....	—	untried.	—	Walesbourne, Stratford-on-Avon.....	Mr. Taylor.....	10 gs., h. b. 3 gs.
Charles XII.....	brown.....	13	by Voltaire, out of Wagtail, by Prime Minister.....	started 34, won 19.....	won St. Leger.....	7	Miss Harrison.....	Lane Paddock, Sheffield.....	Mr. F. Croft.....	10 gs., h. b. 5 gs.
Charley Boy.....	chestnut.....	14	by Acton, dam by Ardrossan.....	started 7, won 1.....	won £200 at York.....	1	Iapis.....	Beastart, Carlisle.....	Mr. W. Ellwood.....	5 gs., h. b. 2 gs.
Chatham.....	chestnut.....	10	by The Colonel, out of Hester, by Camel.....	started 16, won 8.....	won the Criterion.....	2	Woodrich.....	Ham, Arundel.....	—	12 gs.
Combat (h.b.).....	bay.....	16	by Defence, dam (h.-b.) by Anticipation.....	started 36, won 16.....	won Billenden Coplew (2).....	1	Tom Jolly.....	Downington, Northampton.....	Mr. Price.....	7 gs., h. b. 3 gs.
Cotswone.....	bay.....	9	by Touchstone, out of Emma, by Whisker.....	started 11, won 2.....	won the Derby.....	5	Glaucia.....	Althorpe, Northampton.....	—	21 sovs. (30 m. fall.)
Cranbrook.....	chestnut.....	6	by Alaston or Lord John, out of Urganda, by Thersias.....	started 19, won 6.....	won the G. York Handicap.....	untried.	—	Bridge-street, Northampton.....	Mr. S. Dickens.....	7 gs., h. b. 3 gs.
Crozier.....	bay.....	5	by Lanerosci, out of Crucifix, by Priam.....	started 13, won 3.....	won £650 at Ascot.....	untried.	—	Ardee, Louth, Ireland C. Campbell.....	—	4 sovs., h. b. 2 sovs.

The Cure	brown	8	by Physician, out of Morsel, by Mulatto	started 26, won 15	won the Claret	untried.	—	Lambton, Durham	6 sovs.,
Dey of Algiers	bay	13	by Priam, dam by Bisard	started 13, won 8	won the Chester Cup	untried.	—	Hampton Court Paddock	10 gs., h. b. 3 gs.
The Doctor	black	15	by Dr. Syntax, dam by Lottery	started 44, won 29	won the Hooton S	11	—	Stud Paddock New-Messrs. Barrow	7 gs., h. b. 3 gs
Don John	bay	14	by Tramp or Waverley, dam by Comus	started 10, won 9	won St. Leger	24	—	Brebry Park, Burton-on-Trent	20 sovs. (30 marcs.
Dulcimer	chestnut	13	by Muley, out of Dulemama, by Waxy	started 1	—	3	—	Stockbridge	10 sovs.
Drayton	brown	12	by Muley, out of Prima Donna, by Soothsayer	never appeared	—	2	—	Ulverstone, Lancaster	—
Earl of Richmond	brown	9	by Touchstone, out of Queen of Trumps, by Velocipede	by started 1, won 1	won Lynae Park, Stakes	2	—	Clay Hill, Enfield	7 gs., h. b. 2 gs.
The Emperor	chestnut	8	by Defence, dam by Reveller	started 4, won 2	won the Ascot Cup (2)	untried.	—	Quidnam Hall, Norfolk	12 gs.
Engineer	bay	12	by Partington, out of Margaret, by Ardrossan	never appeared	—	untried.	—	Thorton-le-Clay, York-W. Walkington	5 gs., h. b. 2 gs.
Epirus	chestnut	15	by Langar, out of Olympia, by Sir Oliver	started 31, won 12	won Copeland Handicap	11	—	Pittford, Northampton	Mr. T. B. Potterton 15 gs.
The Fallop Buck	brown	4	by Venison, out of Penary, by Emilius	never appeared	—	untried.	—	Anders's Ash Farm, Mr. Ayling	gratts, h. b. 2 sovs.
Fancy Boy	brown	6	by Tomboy, dam by Muley	started 12, won 7	won the Dee Stakes	untried.	—	Petersfield	7 gs., h. b. 3 gs.
Father-of-the-Turf	chestnut	8	by Muley Moloch, out of Miss Thomasina, by Whbeck	never appeared	—	untried.	—	Hall Field Cottage, Mr. R. Gaunt ..	8 gs., h. b. 2 gs.
Faugh-a-Ballagh	brown	8	by Six Hercules, out of Guiccioli, by Bob Booby	started 9, won 5	won St. Leger	untried.	—	Dean's Hill, Stafford	12 gs.
Ferdian	—	—	an Arabian	—	—	—	—	Mrs. Medley's Farm, Acton	5 gs., h. b. 2½ gs.
Foxberry	bay	10	by Voltaire, out of Matilda, by Comus	started 34, won 9	won Glasgow Cup	untried.	—	Prestrbury, Cheltenham	Mess. Humphreys 10 sovs., h. b. 5 sovs., farmers' 3 sovs.
Friar Biggins	brown	6	by Drayton, out of Ruby, by Columbus	started 2, won 1	won Whip S., Horwich	untried.	—	Foxhole's Farm, Lan-T. Arkwright	5 gs., h. b. 2 gs.
Galanthus	bay	10	by Langar, out of Castled, by Whisker	started 8, won 3	won Great Yorksh. Stakes	untried.	—	Belsay Castle	Mr. Aynsley
Galaor	bay	11	by Muley Moloch, out of Darfoletta, by Amadis	started 13, won 3	won Manchester Cup	untried.	—	Harker Lodge, Fitchmond, York	W. Blamire
Garry Owen	chestnut	12	by St. Patrick, out of Excitement, by Emilius	started 73, won 33	won Stewards' C., Good	untried.	—	Stud Paddock, New-Messrs. Barrow ..	10 gs.
Gibraltar	bay	12	by Muley, out of Young Sweet Pea, by Godolobin	started 9, won 5,	won the Port	untried.	—	Hampton Court Paddock	10 gs., h. b. 5 gs.
Giovanni	brown	21	by Fillo da Putta, dam by Don Juan	started 59, won 23	won Manchester Cup	5	—	Hippodrome, Notting Hill	H. Paterson & Co. 10 gs., h. b. 5 gs.
Girafe	bay	5	by Carew, out of Madcap, by Diamond	never appeared	—	untried.	—	Corsham, Wilts	Mr. Gardner
Gorlanbury	bay	9	by Buzzard, out of Brocad, by Whalebone	started 11, won 3	ran second for the Derby	untried.	—	Morden Lane, Surrey	5 gs., h. b. 2 gs.
Hctman Platoff	brown	13	by Brutandorf, dam by Comus	started 19, won 6	won Northumberland P	29	—	Tickhill Castle Farm, W. Hornshaw ..	7 sovs., h. b. 4 10s. 13 gs.
Lago	brown	6	by Don John, out of Scandal, by Selim	started 18, won 10	ran second for St. Leger	untried.	—	Rotherham	Mr. J. Newton ..
Lids	bay	7	by Liverpool, out of Marpessa, by Muley	started 34, won 13	won 2,000-ss. Stakes	untried.	—	How Bridge, Malton	7 sovs., h. b. 3 gs.
lou	brown	14	by Cain, out of Margaret, by Edmond	started 6, won 1	ran second for the Derby	0	—	Danely Paddock	5 sovs.
Ismael'ice	chestnut	8	by Ishmael, dam by Humphrey Clinker	never appeared	—	untried.	—	Stud Paddock, New-Messrs. Barrow ..	15 sovs.
Ithuriel	bay	8	by Touchstone, out of Verbeia, by Velocipede	started 3, won 2	won Liverpool St. Leger	untried.	—	Crumlin, Antrim, Ire-Mr. W. Thomson ..	4 gs., h. b. 2 gs.
Jericho	brown	7	by Jerry, out of Turquoise, by Selim	started 22, won 11	won the Port	untried.	—	Tan Tavern, Doncaster	10 gs.
Johnny	brown	12	by Elvas, out of Perditio, by Laugar	started 40, won 8	won Ascot S	untried.	—	Newmarket	10 gs.
John of Gaunt	chestnut	11	by Taurus, out of Mona, by Partizan	started 88, won 23	won Newmarket S	untried.	—	Fox Hall Kettering	5 gs., h. b. 2 gs.
								Duke of Bedford's	10 sovs.
								Stables, Newmarket	

STALLIONS FOR THE SEASON—(Continued).

Name.	Colour.	Age.	Pedigree.	Performances.	Principal Performance.	No. of winners out by.	Sire of	Standing at	Apply to	Price.
Kl. of the Whistle	chestnut	11	by Velocipede, dam by Whisker.....	started 24, won 12	won R. Hunt Cup	untried.	—	Skirraet, Henley-on-Thames	Mr. T. Hassey ..	7 gns., h. b. 3 gns.
Knight Templar	chestnut	5	by Jack-in-the-green, out of Eabel, by Imperter	never appeared..	—	untried.	—	Temple-Newsham Leeds	Mr. J. Mills	5 gns., h. b. 42 ss. winners <i>gratias</i> .
Lanercost	brown	13	by Liverpool, out of Otis, by Buzzard	started 40, won 26	won Ascot Cup	48	Van Tromp	Rawcliffe, Paddocks York	Mr. Kirby	25 gns., (20 tuaregs).
Laurel	brown	25	by Blacklock, dam by Prime Minister	started 27, won 12	won Eight Gold Cups ..	13	Westeria	Stockwell, Surrey	J. Lowry	12 gns., h. b. 6 gns.
The Libel	brown	7	by Pantaloon, out of Pasquimade, by Camel	started 7, won 3	won Chester St. Leget.	untried.	—	Willesden Paddocks ..	Messrs. Tattersall II	11 gns., h. b. winners and dams of winners 6 gns.
The Liberator	brown	5	by Sheet Anchor, out of Madame Pulerine, by Velocipede	started 4	—	untried.	—	Felbrig, Norfolk	—	8 gns., winners 4 gns., dams of winners <i>gratias</i> 8 sows, h. b. 3 sows.
Lightning	black	8	by Sheet Anchor, dam by Blucher	started 35, won 7	won Liverpool Cup	untried.	—	Eaton Stud House, Chester	—	10 gns.
Liverpool Junior	bay	12	by Liverpool, dam by Orville	never appeared.	—	4	Meaux	Beverley	Mr. W. Dalton ..	7 gns., h. b. 2 gns.
Wahomet	bay	9	by Muley, out of Nancy, by Dick Andrews	never appeared.	—	—	—	Water Failand, York ..	Mr. W. Burton ..	7 gns., h. b. 3 gns.
Manchester (late Bay)	bay	21	by Whisker, out of Muts, by Traump	started 36, won 11	won Ludford S.	—	—	Syston, Leicester	Mr. J. C. Moore ..	—
Bluebeard	bay	15	by Humphrey Clinker, dam by Cervantes	started 18, won 9	won the Palatine S.	11	Sir Tatton Sykes.	Salutation Inn, Doncast.	Mr. R. Robinson ..	16 gns.
Welbourne	brown	6	by Slaue, out of The Magravue, by Little John	started 4, won 1	won the Derby	untried.	—	Hamp, Amudal	—	—
The Merry Monarch	bay	9	by Taurus, out of Lynessa, by the Flyer	started 22, won 12	won £800 at Newmarket	untried.	—	Brocklesby Park, Brigg	Mr. W. Robinson ..	10 gns., h. b. 5 gns., farmers' 2 gns.
Mr. Martin	brown	5	by Lanercost, out of Miss Martin, by Voltaire	started 2, won 1	won Windsor Stakes	untried.	—	Thirsk & neighbourhood	Mr. G. Holmes ..	7 gns., h. b. 2 gns.
Muley Molech	brown	19	by Muley, out of Nancy, by Dick Andrews	started 17, won 11	won the Port	76	Alice Hawthorn.	Stockwell, Surrey	J. Lowry	20 gns.
The Mummy	chestnut	16	by Mennon, out of Mouches, by Emilius	started 2, won 2	won £300 at Warwick.	4	Skeleton	Donnington, Lechlade	Mr. Price	10 gns., h. b. 5 gns.
Mus	bay	10	by Bizare, out of Young Mouse, by Godolphin.	started 42, won 17	won Orleans Cup	7	Halo	Stud Paddocks, Newmarket	Messrs. Barrow ..	10 sows, h. b. 3 sows.
The Nob	bay	11	by Glancus, out of Octave, by Emilius	started 17, won 6	won £600 at Ascot	2	Albion	Downside, Cobham Surrey	W. Todd	25 gns.
North Star	black	5	by Jacques, out of Ringlet, by Whisker	never appeared.	—	untried.	—	Corsham, Wilts	Mr. Gardner	5 gns., h. b. 2 gns.
Nutwith	bay	9	by Tomboy, dam by Comus	started 7, won 3	won St. Leget	untried.	—	Burghey, Stamford ..	Lord Exeter	15 sows.
Oakley	bay	11	by Taurus, out of Oak-apple, by Royal Oak	started 49, won 31	won the Colburn	untried.	—	Willesden Paddocks ..	Messrs. Tattersall II	11 gns., h. b. winners and dams of winners 6 gns.
Old England	bay	7	by Mliatto, out of Fortress, by Defence	started 12, won 8	won New S. Ascot	untried.	—	Leybourne, Maidstone	Mr. Tweed	15 gns.
Old Port	brown	5	by Sir Hercules, out of Beeswing, by Dr. Syntax	started 4	—	untried.	—	Stoddick, Tiverton ..	J. Laxton	5 gns., h. b. 2 gns.
Orlando	bay	8	by Touchstone, out of Culture, by Langer	started 11, won 10	won the Derby	untried.	—	Bonehill Farm, Tamworth	Mr. E. Ward	19 gns., h. b. 5 gns.
Pantaloon	chestnut	25	by Castel, out of Italia, by Peruvian	started 7, won 8	won Warwick St. Leget.	38	Satirist	Newson Lodge, Rugby	—	10 gns. (40 mares)
Paragone	chestnut	6	by Touchstone, out of Hoyden, by Tomboy	started 12, won 8	won Coffee Room Stakes	untried.	—	Causmark	T. Starling	10 gns.
Perkin Wabeck	chestnut	8	by Beiram, out of Romacke, by Rowton	started 1	—	untried.	—	Vet. Establishment, Bath	Mr. E. Bailey	5 gns., h. b. £2 11s. 6d.
Peter the Hermit	chestnut	9	by Gladiator, dam by Velocipede	started 10, won 8	won 100 gs. at Lewes	—	—	Mordon Lane, Surrey	—	5 sows, h. b. £2 10s.
Pilgron	bay	9	by Beiram or Sultan, out of Lucetta, by Reveller	started 6, won 2	won Grand D. Michael S.	untried.	—	Burghey, Stamford ..	Lord Exeter	10 sows.
Piscaron	black	14	by Voltaire, out of Handmaiden, by Walton	started 3, won 2	won the Mersey Stakes ..	11	Paniasa	Dringhouse, York	T. A. Wilkinson ..	10 gns., h. b. 5 gns.
Pretentory	chestnut	18	by Emilius, out of Harriet, by Pericles	started 8, won 7	won the Derby	43	The Era	Horsheath, Cambridgeshire	—	10 gns., h. b. 5 gns.
Pryonion	bay	6	by Touchstone, out of Lady Stafford, by Comus	started 6, won 2	won Great Yorksh. S.	untried.	—	Rawcliffe Paddocks, Yrk	Isaac Larson	7 gns., h. b. 3 gns.

Precursor	chestnut	11	by Alpheus, out of Adeline, by Southsayer..... never appeared	untried.	—	Sittingbourne	Mr. Moss	3 ggs.
The Prior	brown	10	by Miley Motech, out of Rebecca, by Lottery started 6, won 3, won £140 at Chester..... untried.	untried.	—	Milton Mowbray	J. Mason	5 ggs, h. b. 2 sovs.
Prizefighter	chestnut	9	by Gladiators, out of Barbara, by The Laird .. started 6, won 9, won Great Yorkshire S..... untried.	untried.	—	Clay Hill, Enfield	Mr. J. Gray	3 ggs, h. b. 3 sovs.
Rutan	chestnut	8	by Buzzard, dam by Falcon..... started 7, won 8, won the Crittenton	untried.	—	Willstead Paddock.....	Mr. A. Grenny	7 ggs, h. b. 2 ggs.
Rat Trap	chestnut	19	by Langier, out of Ruma, by Blacklock	untried.	8	Willstead Paddock.....	Messrs. Tattersall	5 ggs, wms, dams of wms, & h. b. 6 ggs.
Red Deer	bay	8	by Venison, out of the Soldier's Daughter, by started 20, won 10, won the Chester Cup	untried.	—	Whitley, Selby, Yorksh.	Mr. Smallpage	10 ggs.
Red Hart	bay	5	by Venison, out of the Soldier's Daughter, by started 16, won 8, won Grand D. Michael S..... untried.	untried.	—	Stud Paddock, New-	Messrs. Darrow	10 ggs.
Redbank	bay	16	by Sandbeck, out of Johanna, by Solim	untried.	10	Stearn, Driffeld	Mr. R. Stockdale	5 ggs, h. b. 2 ggs.
Revolution	chestnut	22	by Ossen, out of Emma, by Don Ossenak	untried.	10	Great Driffeld	—	12 ggs, h. b. 2 ggs.
Robert de Gotham	brown	10	by Sir Hercules, out of Durocy, by Emilia	untried.	—	Hain, Airedale	—	5 ggs, h. b. 2 ggs.
Robinson	brown	14	by Robin, out of Miss Muley, by Muley	untried.	8	Great Driffeld	—	5 ggs, h. b. 2 ggs.
St. Francis	bay	24	by St. Patrick, out of Surridge, by Scud	untried.	8	Xenon	—	10 ggs.
St. Lawrence	brown	12	by Skylark or Lapwing, out of Helen, by Black- started 68, won 28, won the Chester Cup	untried.	—	Mortonside-Strale, Nor-	Mr. Pettit	10 ggs, h. b. 2 ggs.
Samarand	chestnut	19	by Blacklock, out of Jane, by Moses	untried.	6	thallerton Pk, Stamford	—	1 sov.
Scamander	chestnut	15	by Priam, out of Arache, by Filo da Puta	untried.	1	Northampton	Mr. J. Eyke	5 ggs, h. b. 3 ggs.
Scargans	bay	16	by Traun, out of Arcot Lass, by Arivassan	untried.	2	Patricio	—	5 ggs, h. b. 2 ggs.
Scarlott	bay	12	by Sultan, out of Velvet, by Ouseau	untried.	1	Burgley, Stamford	Lord Exeter	10 sovs.
The Sea	bay	19	by Whalebone, dam by Orville	untried.	3	Dryock, Stamford	Messrs. Lucas	5 ggs, h. b. 8 ggs.
Sea Horse	bay	10	by Camel, out of Scabwex, by Paulowitz	untried.	3	Dryock, Stamford	Messrs. Lucas	5 ggs, h. b. 8 sovs.
Sir Hercules	black	23	by Whalebone, out of Perij, by Wandener	untried.	68	Wilton House, Salisbury	—	10 ggs, h. b. 3 ggs.
Sir Isaac	brown	18	by Camel, out of Arachne, by Filho da Puta	untried.	4	Yardley, Birmingham	Mr. Holloway	6 ggs, h. b. 3 ggs.
Sir Roland de Bois	bay	4	by Touchstone, out of Falerma, by Chateau started 1, won 3, won a Produce at Liverp..... untried.	untried.	—	Telegraph Stables, Brix-	—	6 ggs, h. b. 3 ggs.
Sir Tatton Sykes	bay	6	by Melbourne, dam by Margrave	untried.	—	Hippodrome, Nottingham	H. Paterson & Co.	12 ggs, h. b. 5 ggs, dams of winners 6 ggs.
School	brown	9	by Sheet Anchor, out of Nannette, by Partison started 5, won 4, won St. Leger	untried.	50	Northampton Pk, Stamford	—	5 sovs.
Shave	bay	16	by Royal Oak, dam by Orville	untried.	—	Hampton Crt, Paddocks	—	25 sovs.
Slight of Hand	brown	13	by Pantaloon, out of Durocy, by Filho da Puta started 18, win 9, won Waterloo Shield	untried.	2	Sladmore, Malton	—	10 ggs, h. b. 4 ggs.
The Squire	grey	10	by The Saddler, dam by Mians	untried.	—	Pontreaf	Mr. J. Bottomley	7 ggs, h. b. 3 ggs.
Sweetmeat	brown	7	by Gladiator, out of Lollypop, by Starch	untried.	—	Neasham Hall, Darling-	—	8 sovs.
Tearway	bay	11	by Voltaire, out of Tagliani, by Whisker	untried.	4	Don	—	10 ggs, h. b. 4 ggs.
Theon	brown	12	by Voltaires, out of Maria, by Whisker	untried.	5	Bonehill Fm, Tunworth	Mr. E. Ward	11 ggs, wms, dams of wms, & h. b. 6 ggs.
Topsy	bay	12	by Dr. Faustus, out of Sylvia, by Spectre	untried.	—	Presbtery Cheltenham	Messrs. Humphreys	5 ggs, h. b. 2 ggs.
Uncommon	brown	4	by Redbank, out of Utopia, by Jerry	untried.	—	Harcourt Hall, Tring	Mr. Brown	2 ggs.
Velocepede	chestnut	24	by Blacklock, dam by Juniper	untried.	130	Queen of Trumps	J. Berridge	7 ggs.
Venison	brown	16	by Partizan, out of Fawn, by Smolensko	untried.	53	Alam	Mr. S. Reed	15 sovs.
Vermah	bay	16	by Lottery, out of Wine, by Waxy	untried.	6	Lanelledon, York	Mr. F. Croft	10 ggs, h. b. 5 ggs.
Vol-au-vent	bay	8	by Voltaire, out of Pauline, by Moss	untried.	—	Hampton Crt, Paddocks	—	2 ggs.
War Eagle	brown	7	by Lanercost, out of Valentine, by Voltaire	untried.	—	Willstead Paddock	Messrs. Tattersall	11 ggs, dams of winners and h. b. 6 ggs.
Wood Pigeon	bay	17	by Velocepede, out of Amiana, by Sootsayer	untried.	—	Burgley, Stamford	Lord Exeter	10 sovs.
Young Physicain	bay	12	by Physicain, dam Spaewix, by Sootsayer	untried.	—	Selby, Yorksh	Mr. J. Markham	5 sovs, h. b. 2 sovs.

The Groom's Fee, if not included, varies from 2s. 6d. to £1 ls. Touchstone's subscription has long been full. Scamander covered for some seasons in Germany, but we have no account of the winners out by him there.

PROBUS FARMERS' CLUB.

The annual meeting of this Club was held on Tuesday, the 13th January. The chair was taken by Mr. Tresawna, and the vice-chair by Mr. Karkeek, of Truro.

After the usual loyal toasts,

The CHAIRMAN gave "Success to the Probus Farmers' Club."

Mr. DOBLE, in returning thanks on behalf of the Club, said the time was coming, and perhaps was already arrived, when it was necessary to have greater knowledge in agricultural matters than had hitherto been required by them (Hear, hear). Things were very gloomy at present, but he hoped the day was coming when they should see better times. He did not look at the gloomy side of things, as some were in the habit of doing, and become cast down about it. There were already prospects of amendment in many things; manufactures were improving, trade was improving in many places, and they might hope that an improvement in agriculture would follow (cheers). For his own part he was satisfied that this must be the result, for one part of the community cannot flourish, or be in an improving state, without the other part deriving benefit from its prosperity. If the manufacturers were employed and prosperous, they must come to the farmers for corn and cattle for their food, and on the other hand the agriculturists would repay the benefit to a certain extent by an increased use of manufactured articles (Hear, hear). Then, again, if it were true that gold might be had in California for the mere labour of picking it up, a large portion of that gold would come to England for the purchase of articles needed in that country, and this would also be for our benefit (cheers). But while looking forward to a day when they should be more prosperous, they must not be at present too extravagant; they must be economical, and endeavour to rub along during the bad times in the best manner they can. They had before now seen as bad times as the present. He could remember the time when meat was down to 3½d. per lb., and in 1836, he believed it was, wheat was below 40s. per qr. on the average. It was not quite so bad as that now; but they must all see the necessity of doing their best to improve their estates, and endeavour to get on as well as they can, in the hope of being more prosperous in a short time to come (loud cheers).

Mr. HENRY TRESAWNA, the secretary of the club, then read the annual report.

Mr. DOBLE begged to propose "the health of their worthy chairman."

The CHAIRMAN returned thanks, and said it was to him a source of the greatest pleasure if his feeble services had tended to promote the object of the Club, which was to acquire more knowledge than they at present possessed in the various branches of farming. He thought they would all agree with him that the wisest and best farmer had yet a great deal to learn, and that if any farmer thought his knowledge perfect, he would find himself very much mistaken (Hear, hear). It could not be doubted but that very much information might be obtained by attending the discussions at their monthly meetings, and by reading the excellent agricultural works in their library; and he thought that if many of them would look back to the formation of the Club, and compare their farming then to what it was now, they would attribute many of the improvements they had made solely to the information they had

gained by attending the meetings of this Club (cheers). They were not increasing much in numbers, but he thought he might safely say they were in usefulness, for if there had been no Probus Farmers' Club, they would not have had those splendid short horns in this neighbourhood, a painting of one of which (by Mr. Goldsworthy) was now before him (cheers). Those animals were purchased by the members of the Club, and he thought they might say they could not be surpassed, if equalled, by any other breed in the county. Three bulls, three cows, and four heifers had been purchased entirely for breeding purposes, and no doubt that breed of cattle would be much improved in the neighbourhood. He thought it was clear they were progressing, but not so fast, perhaps, many of them as they ought to do, considering the advantages they derived from connexion with the Club. The present, however, was not the time for them to expect any very great improvements to be made by farmers, for such could not be effected without money, and they all knew, he was sorry to say, that the farmers at this time have but very little of that, and if the present ruinously low prices continue they would have much less. If these low prices continue, the farmers would want something which it was out of the power of a Farmers' Club to supply—they would want the kind assistance of their landlords (cheers). Without this all their efforts would be unavailing; but he hoped the landlords would see it was their interest to come forward and assist their tenants before it was too late, and he had no doubt they would do so (cheers). The Chairman then proposed "Liberal landlords and industrious tenants."

Mr. KENDALL said the toast was one that deserved the consideration not only of every agriculturist, but of the public at large, for he thought all classes of society were more or less benefited by liberal landlords and industrious tenants. (Cheers.) It was by their combined energy that more labourers were employed, and consequently there were less poor rates to pay—also that more land was cultivated, and better crops produced, so that there was less need of exchanging our gold for foreign produce to feed an increasing population. (Hear, hear.) Without liberality on the part of the landlords, the industrious tenant's energies were so cramped and fettered that he was unable to carry out improvements as he would do if assisted by his landlord. He did not mean assistance by letting an estate for less than its fair value, for the landlord was as much entitled to his rent as the tenant to the produce of his farm. (Hear, hear.) But there were many things which a landlord might do for the benefit of his tenant without injury to himself, and particularly in the providing him with good farm buildings, and bringing into cultivation the waste patches of land. There was a great deal of this sort of work to be done, and the tenant would reap the profit even if he paid good interest to his landlord for money judiciously invested in such improvements, for the best bank a landlord can put his capital into is the bank of his own waste lands. (Cheers.) Nothing besides will pay him so good and so permanent an interest. (Hear, hear.) He would not at this time say any thing about the large tracts of waste and undivided commons which are still to be seen in a state of nature and almost without inhabitants; but they could not go into the best cultivated districts without seeing a large number of acres of improveable land lying dormant and uncultivated, and a number of able-bodied labourers

who were ready to be employed in its cultivation, but who are living in idleness when they should be getting their living by their labour. (Hear, hear.) The tenant should also be aware that he is a responsible agent, and has duties to perform as well as his landlord, and that it is only by means of both parties that improvements in the land can be carried out. Where there is liberality on the part of the landlord, and industry on the part of the tenant, to carry out the productive powers of the soil as far as possible, it was impossible to say to what state of productiveness the land of this kingdom might be brought, or what amount of population they might sustain with the necessaries of life. (Cheers.) They had now all the world to compete with, and they were told that they must drive the foreigner out of the market. How far they might be able to do so time alone could determine; but this he might safely say, that it never would be accomplished but by the united energies of liberal landlords and industrious tenants, and in behalf of those two useful classes of society he begged leave to return thanks. (Loud cheers.)

The CHAIRMAN deplored with Mr. Kendall that there was such a large quantity of waste land lying dormant. A short time ago he was in the north of this county and the north of Devon, and he thought it was a pity to see in those neighbourhoods such a number of acres of waste land on which labourers might be employed, and which would pay for cultivation. There were likewise a number of men there who would be glad to go to work in improving those tracts of land; and if the waste lands were properly cultivated, there would be no need for the labourers, the strength of the nation, to leave this country and go to foreign parts. He then gave "Agriculture, trade, and commerce."

Mr. DOWNING, in returning thanks for agriculture, said the farmers at present laboured under many difficulties, and were thrown on their own resources. Every step therefore taken in advance should be done with as little outlay as possible, and they should get the best return they could from the manure produced on their farms. For years they had been large purchasers of guano, and other manures; but he thought a great deal of the expense of artificial manure might be saved by properly taking care of what was raised on their own estates. He had endeavoured to act in this way, and so far had been successful. By raising sheds at a small expense and taking care of their manure, instead of exposing it to the rain and wind, and allowing the best part of it to evaporate, or be washed away, they could raise as large a crop of turnips for the cattle in the winter as if they used guano, and at much less expense. He was not speaking in disparagement of guano, because he knew it was a great means of raising a crop at a small expense; but considering they were thrown on their own resources, they should do the best they could at the smallest expense. (Hear, hear.) In reading in the *Mark Lane Express*, he found that those who speak at public meetings say that both landlords and tenants must do their part in the present state of things. It was said a short time since at a meeting at Cirencester, that every landlord who possessed a sufficient number of acres to require the keeping of a steward ought not to trust the land to the steward's governance only, but ought to go himself to see that the land and also the tenantry were taken care of. Another person at one of the agricultural meetings, when speaking of the lauded aristocracy, said the greatest curse to this nation, and particularly to the industrious farm tenantry of England, was the landlords living beyond their means, and making the tenants pay a superabundant rent, so that when rent-day comes the tenant was obliged to draw on the capital he had invested in the estate, while the landlord, living beyond his means, was not able to help him out. This subject involved

also the question of tenant-right, which he should not at present enter into. He believed, however, that if they would exert all their energies, and take proper care of the manure raised on their farms, they might yet take a step in advance, and with the prospect before him of future improvement and better times, the British farmer might rise superior to present circumstances. (Cheers.)

Mr. W. E. GILL agreed with Mr. Downing that the farmers would do well to preserve their manure from being washed by the rain, and exposed to the wind; but if they could also direct the urine from the cattle sheds and stables into the dung heap it would be an incalculable advantage. Since he addressed them this time two years trade and commerce had been making rapid strides, which in every degree had more or less affected the farmer, and they had now arrived at a period when the farmers' anxiety in relation to trade and commerce had considerably increased; indeed he might go further and say the farmer was almost brought to a stand still, waiting to see the result of coming events. (Hear, hear.) He had met with a paragraph that morning which appeared to him greatly to interest the farmer; it referred to the importation of foreign cattle and of farm produce in this country in December, 1847, as compared with the importation in December, 1848. Mr. Gill then read the following:—Importation of oxen and bulls for the month ending 5th of December, 1847, 2,217; during the same period in 1848, 2,741. Sheep, in December, 1847, 7,162; in December, 1848, 15,146. Butter, in December, 1847, 16,752 cwt.; in December, 1848, 23,298 cwt. Cheese, in December, 1847, 28,606 cwt.; in December, 1848, 53,978 cwt. Wheat, in December, 1847, 163,723 quarters; in December, 1848, 212,359 quarters. Barley, in December, 1847, 20,667 quarters; in December, 1848, 91,007 quarters. Oats, in December, 1847, 47,108 quarters; in December, 1848, 75,864 quarters. Rye, in December, 1847, 537 quarters; in December, 1848, 131,179 quarters. Peas, in December, 1847, 19,469 quarters; in December, 1848, 42,735 quarters. Flour, in December, 1847, 197,324 cwt.; in December, 1848, 261,404 cwt. After remarking on the large increase in importation, Mr. Gill said he thought that however unpalatable it might be, they ought to know these facts, that knowing the power of their foe, they might make the better preparation to compete with, and to beat him. (Cheers.)

After some further toasts,

Mr. KARKEEK proceeded to deliver a lecture on the "Breeding, Rearing, and Feeding of Cattle." He estimated the number of cattle generally kept on the various farms, at 130,000—these including cattle of all ages—such as calves reared, one year old and upwards, and valuing them at about £6 and £7 each on the average, gave £845,000 as their net value. He made his estimate of the number of cattle by calculating the stock generally kept on the various farms, which he said was about twenty on 100 acres on the average, which estimate he arrived at from the returns of some twenty resident farmers in different districts of the county. Of the cattle kept in the county he calculated that between 19,000 and 20,000 were annually fattened and sold; and the annual loss of cattle in the county from various causes, he estimated at 5 per cent. on the total amount, which made a loss of £42,250 sustained by the Cornish farmers in one branch of agricultural economy only in one year. He was confirmed in this calculation by the opinion of some dozen farmers, as well as by the calculations of the "*Farmers' and Graziers' Mutual Cattle Insurance Association*," which society estimated the annual loss all over England at 5 per cent. When we consider, he said, how much of the loss proceeds from mismanagement, it really becomes an object of importance for the Cornish farmer to endeavour, by every pos-

sible means, to keep his stock in a healthy condition, by attending more to their general comfort. The statistics given also showed the importance of more attention being paid to the breeding department—not only as it regards the keeping of a healthy stock, but also a profitable one.—Here the lecturer entered deeply into the subject of breeding, and showed that there was annually an immense number of cattle bred, on which great labour and much money were expended in the rearing and feeding, that proved anything but profitable to their owners; and also that it was not so much the quantity or quality of food which caused an animal to attain a heavy weight in a short period, as the peculiar disposition, derived from inherited and transmissible tendencies to acquire flesh and fat, and come early to maturity. He reprobated the system of breeding from cross-bred animals, and recommended in all cases where a cross was attempted, that *pure blood be had on one side*. “Breeding in the line” he considered the safest way—that is, by first selecting the best of that particular breed, both males and females, which it is intended to propagate from, and maintaining the same (changing occasionally from one family to another) in the greatest purity. He considered that the size and general appearance of a bull was not of so much importance as the general size of the family to which he belonged; and also as it respected cows, that more perfect animals were produced by breeding from those of a small size, than when they exceeded the ordinary size of the race to which they belonged. In the management of the pregnant cow, he recommended that all petted cows, and high-bred ones particularly, when in a high condition, should have a gentle purgative administered some three or four days previously, and repeated, with moderate bleeding, immediately after calving. *This prevented dropping after calving*. With respect to rearing of young stock, the lecturer enforced the necessity of more attention being paid to this part of the general management of cattle in the county. He said that the profit derived from cattle generally in Cornwall was very considerably reduced by a disregard of the proper medium in which they are placed, as it respected *temperature*, whether in the open fields—in the state of the yards or buildings in which they were confined. He then described particular cases of mismanagement, and enumerated the various diseases produced. *Red water*, he considered, was frequently caused by turning young stock that have been warmly housed during the winter, into the fields just as the spring sets in. From the hot-house system they have undergone, they are prematurely preparing to put on their summer coats, which were invariably formed at the expense of the constitution; and the exposure of their almost naked backs to cold and wet, at that period, produces frequently constitutional disturbances of the digestive organs; and *red water*, which is primarily a disease of those organs, and not of the kidneys, is the result. *Hoose*, he considered also an affection engendered by crowding young cattle together during the winter, and brought into action by exposure to a few cold stormy nights shortly after being turned out. Diseased lugs were also commonly produced by the same cause. He considered it dangerous to breed from a consumptive cow, as it is commonly communicated to the offspring. The heifer of a consumptive cow may rear her first calf, but very rarely a second one. The lecturer then described some of those pestilential low typhoid diseases, such as murrain, pleuro pneumonia, &c., &c., and said he frequently traced their source to the crowded state of cattle houses, and the exposure of the inmates to dirt, filth, and want of proper ventilation, as well as exposure to damp and cold. The *flou*,—a disease known in some other counties as “joint murrain,” or “quarter evil”—was very common in Cornwall. This he considered to be caused more

frequently by an error in diet, and to be the consequence of pushing the vital energies of young stock too fast and too sudden. “I have witnessed it more commonly,” he said, “on farms where the stock are starved and stuffed by turns, than where regular and judicious feeding is practised; and we more commonly find the complaint make its appearance in the spring and autumn, consequent on an early or late flush of grass.” As one means of preventing so many serious losses in the *rearing department*, he strongly enforced that all stock intended to be depastured the following summer should never be tied up in close ill-ventilated cattle-houses during the winter, but kept in small yards having sheds attached sufficiently large to accommodate four or five steers, or two or three heifers in calf. Those yards, which are called *hammels* in the south of Scotland, should have a southern aspect, and the floor of the shed should be raised about two feet above the floor of the yard, and well littered to keep the young stock dry and warm. Alluding to farmers who do not possess these conveniences, he said they were in the habit of turning their young beasts out in their farm-yards two or three hours during the day when the weather permitted, and then it was not a very uncommon sight to see them scampering about the lanes and parish roads. He could not too forcibly impress on the landed interest of the county the necessity, that in all new farm buildings about to be erected, or in the alteration and improvement of old ones, the *hammelling* system should not be lost sight of. Those yards would be found convenient for many purposes, such as summer soiling where it is practised, &c., and he believed that few tenants would refuse paying 5 per cent. on the outlay to his landlord for the accommodation. Respecting *fattening cattle*, he spoke of the new method lately introduced on several estates in this district, by feeding cattle in boxes, as on the estate of Mr. Danbuz, of Killow, Mr. W. Hodge, Calleslock Veor, and the Messrs. Davey, Tywarnhayle farm. He described the method of feeding, as adopted by Messrs. Davey very minutely. The cost of each bullock was about 1s. 5½d. per day on the average. Thus—

	d.
2 lbs. of linseed, 4s. per qr.	2½
6 lbs. of barley meal, or rye, at ¾d.	4½
84 lbs. of turnips, at 10s. per ton	4½
14 lbs. of hay, at 3s. per cwt.	4½
Attendance and fuel	1½
	1s. 5½d.

The chopped hay or straw was first mixed with the meal in a shallow wooden cistern, and was incorporated with the linseed meal in a boiling state. The cattle were fed six times a day—three times with turnips, and three times with the linseed compound; and on this system they were enabled to fatten oxen, averaging 10 cwt. of the very best quality meat, in sixteen weeks. Thus the farmer is enabled to feed three animals instead of one on the old plan, and thereby make a quicker return of his capital, which was the life of trade. The lecturer said that there was good policy in using chaff, of some kind or other, as a vehicle for the linseed meal into the stomachs of cattle. If the stomachs of cattle were not moderately filled by a meal, notwithstanding it be a rich and nutritious diet, the muscles, whose exercise tend to produce a healthy digestion, are not called into action by the food being kept in constant motion in the stomach, and indigestion, with all its various train of evils, was the consequence. After this, the lecturer proceeded to point out many diseases in cattle produced by mismanagement in the feeding department, such as *distention of the rumen*, called roven; also diseases of the third stomach—the *manypus*—such as *fardel bound*. Speaking of the third stomach, he said there were very few diseases by which cattle

were afflicted, in which it is *not* involved. It was frequently diseased from being overloaded with hard, indigestible food—such as straw-chaff, fibrous turnips; and in most cases of death, which occur from this cause, portions of indigested food have been found in a hard, baked state, between the leaves of the manypluss. Respecting cooking of food for cattle, he showed, both by the peculiar digestive apparatus of the ox, as well as by the experience of farmers, that steaming of roots, hay, and straw, was unnecessary; and he strongly recommended the bruising of grain of every kind. This part of the lecture was confirmed by several experiments, lately conducted on the feeding properties of grain of different descriptions, given in a whole or bruised state. The lecture was a long one, and excited considerable attention; and many of the points brought forward were calculated to awaken much interest.

A discussion of considerable length then took place on the subjects treated of in the lecture, and first on the cattle statistics. Mr. JAMES and Mr. DOBLE thought the estimate of Mr. Karkeek, that twenty head of cattle were kept on one hundred acres, on the average, in the county, was too high an estimate; it was more, they said, than were kept in that neighbourhood. Mr. KARKEEK replied, that when he was getting up his report on the farming of Cornwall, he had some fifty different returns from highly respectable farmers in various districts, and he found, including calves and fatted stock, that the cattle kept amounted in the county to full 20 per cent.; in some districts it was from 15 to 30 per cent. Mr. WILLIAMS said, that in the north of Cornwall, particularly in the granite districts, they rear a great many more cattle, and keep less sheep, than in the neighbourhood of Probus. Probably the average for the county was thus rendered higher than it was in that neighbourhood.

In respect to breeding cattle, Mr. DOBLE said he had bred animals which, though kept well, would only make, after they were fed, about a dozen pounds at three years old. He had bred other cattle, and had done it last year, which made £27 each at three years old. These cattle were a cross from a short-horn bull, though a vastly inferior bull to the splendid one now belonging to the club. When they got stock from that fine animal he expected they would have cattle of much greater weight and more profitable. He would advise all who breed to breed from the very best animals they could get.—Mr. WILLIAMS asked what breed of animals paid only £12 at three years old? Mr. DOBLE replied that perhaps they were mongrels, for unfortunately he could not always get thorough-breds to breed from, sufficient to supply the stock on his farm. When, however, he bred from pure North Devons they paid well, though the mongrel stock would not.—In reply to Mr. P. Davis, Mr. DOBLE said he believed if they crossed any kind of cow—North Devon, Jersey, or Guernsey—with a pure-bred Durham bull, they would have a better stock than before; but he did not think they would pay as well as when they had the pure breed on both sides.

In regard to rearing cattle, Mr. JAMES thought they subjected themselves to great loss in the early days of rearing calves, which were generally taken from the cows when four, six, or eight days old, and then are put entirely on skim-milk. If they were allowed to remain on the cows eight days, and then had raw milk for the next eight weeks, it would make a very considerable difference in their appearance. But sometimes the calves had not even a sufficient supply of skim milk, consequently they were impoverished, and their improvement impeded for months to come.—Mr. DOWNING recommended that two calves should be put on a cow, and that no skim milk should be given to calves, but let them suck the cow from the

time they are born till they are taken from the cow altogether.—Mr. DOBLE agreed that the giving calves skim milk was a wrong system; the putting two calves on a cow was a very good plan, but they could not always practise it; if, however, they gave them raw milk instead of scald, it would be much the same thing. He approved of the hammelling system as described by Mr. Karkeek; his father introduced it thirty years ago when he took Barteliver farm. At Carvazza they had two linnays, with two fields adjoining one, and one field adjoining the other. Their yearlings were put there in the winter, and they go into the fields by day or by night whenever they liked; they go out into the linnays to eat hay, and turnips were carried for them to eat in the fields; the older ones had no turnips, but only hay. They answer very well, and in the spring, when turned out to grass, they do not feel the weather, because they are used to it. The second year they are put into other yards, with a linnay attached to run in and out, giving them straw and turnips, or hay and turnips. In the third year they were sometimes fed in those yards or were tied up. Mr. Karkeek might say the best plan was to feed in boxes, and he agreed with him that it was perhaps an improvement on the hammelling system. Having made trial, however, he thought those in the yards did as well as those tied up by the neck. Of course the feeding cattle had the best hay, and the others the inferior given them.—Mr. BASSETT, of St. Enoder, approved of Mr. Downing's plan of putting two calves on one cow; his father had tried it, and found it to answer much better than the old system of meating by hand.—Mr. FAULL said a remedy for the felon or quarter-evil (referred to in Mr. Karkeek's lecture) was the application of a seton to the neck. He knew a person who rears fifteen animals a year, and he never lost one since he applied it; his neighbours practised the same.—Mr. BASSETT said young sheep and bullocks were generally lost when a hard frost comes in, when they were fed in an irregular manner, which was a confirmation of what Mr. Karkeek had said respecting the result of fits and starts in feeding.—Mr. KARKEEK observed that it was the practice on Earl Spencer's estate to apply a seton to the animal's dewlap; by keeping up a drain it prevents plethora from the action of a sudden excess of food.—Mr. KENDALL said that during the last fourteen or fifteen years he had bought and fed about five hundred bullocks, and had kept them as recommended by Mr. Karkeek, running in rough yards during winter, and let them go in the fields in summer. His object was never to fatten them during the winter, but in summer; and during the last fourteen years he had not lost one out of 500 animals, though he had been obliged to kill two or three. Still, if he had to fatten cattle during winter he should keep them in the house rather than in the yards. Box-feeding he believed was preferable to tying up. He had known cattle that were kept in go back very much when turned out in May, but his bullocks being kept differently were not so affected by the weather; bullocks kept in the house he thought should not be turned out in the summer.—Mr. KARKEEK considered that cattle once tied up should remain so till sold to the butcher; and there was no doubt that cattle would fatten better if tied up in the house, or in boxes, than if kept on the hammelling system, because cold, wet, and damp produced hunger. He recommended hammelling for cattle intended to be pastured in the following season, but cattle intended to be fattened should be tied up or put in boxes.—In reply to Mr. Downing, Mr. KARKEEK said that turning the cattle out occasionally in winter, when the weather would permit, which was the common practice in this county, was preferable to keeping them always tied up by the head, but the hammelling system was better.—Mr. KENDALL was of the same opinion, for if bullocks were turned out in the morning

after being kept warm in the night, and a heavy flood of rain fell, they would be shivering for hours; then if tied in the house the heat did them as much harm as the cold. He found that his bullocks lay out if the weather was dry, though it might be cold; but if it was raining they sought shelter. Mr. W. TRETHERY said bullocks should be tied in to eat their turnips, otherwise the master bullock would deprive the others of their portion; the trouble of doing this would be recompensed by their improved condition, and they might thus keep six or eight in a small yard where they could otherwise

keep only four.—The CHAIRMAN said he had had a little experience in box feeding, and there could be no doubt that bullocks fattened a great deal faster in boxes than when tied by the head; bullocks would thrive as much in one month in a box, as in six weeks when tied by the head, and having the same food. The question was, however, how could they get those boxes, for if they could get them there was no doubt they would answer exceedingly well.—Mr. KENDALL said it would be worth giving the landlord five per cent. on the outlay, and the tenant would gain ten per cent. from it afterwards.

T U R N I P F L Y.

SIR,—I have been frequently asked for further information on the means I have used to protect the swedish turnip plants from being injured by the fly, since an imperfect account was given by Mr. Rainbird, in his book on "Suffolk Farming; and Mr. Rainbird has, *since* he published his book, requested me to give him a more detailed account; but I did not, as it would require a pamphlet to state the nature and habits of the fly, how and where bred, and why all the various modes adopted have failed, &c.

All the modes adopted, such as rolling tarred cloths or boards, sweeping them off with elder boughs, ropes, &c., were adopted from not being aware of the nature and habits of the fly; so also was Mr. Sutton's half-guinea receipt. The fact is, they abound everywhere where there is shelter for them in the winter and food in the summer, and emerge in swarms as early in the spring as the weather permits, commonly in the second week in April, in a calm day, thermometer at 60, and sooner under shelter of a wood or fence, and extend their flight in still warmer weather, and are constantly alighting on the space gone over with the roll or the boards, &c., drawn over the land; thus, it is almost labour in vain to keep them off the plants.

My land being too heavy to feed turnips on, or cast off without injury, I had tried every mode recommended to protect swede turnips from the fly for years, as swedes could be carted and stored in a frost, but with moderate success. On such soils, as they grow slow, they require to be sown early, and no other turnips being sown all the flies near by flocked on them, and if they did not destroy the plant they jagged them so as to stunt the plants, and retarded their growth, so that the weeds got a-head, and increased the cost of hoeing, and injured the crop. Being informed by the Rev. Mr. Kirby (joint author of a celebrated book on insects) that the turnip fly abounded everywhere in a perfect state in the spring, I intended to give up attempting to grow swedes, and having swede seed by me I drilled it with my common turnip seed, presuming (from having adopted the general opinion) that the flies preferred the swedes; but they scarcely touched the swedes, but swarmed on the common turnip: I hoed them up, and left the swedes for a crop, and I followed this plan for some years, until by accident I found that mustard attracted the flies, and protected both swede and common turnips. It was

a singular circumstance that occurred to convince me that such was the fact, but it requires too much space to relate. I have since continually sown or drilled mustard to protect early sown turnips, and never have missed obtaining a plant. Later sown turnips seldom require protection, because showers fall more frequently.

I am led to forward this to you, in consequence of a Mr. Abbott, of Needham Market, inquiring for information as to the mode I pursue; and by another gentleman, as to whether I thought a tarred board would catch the flies off the turnips, as stated by a gentleman at a meeting of the committee of the Royal Agricultural Society; which shows that using guano, sulphuric acid, bones, &c., does not always prevent the fly from injuring the turnip plants.

I do not know that any of my neighbours adopt my plan constantly, but I believe that two who have sown the swede and common turnip mixed, say it is some trouble, and that the flies do not destroy the turnip plant very often.

If any one chooses to try the plan, if the field is intended to be part swedes and a part common turnip, mustard may be drilled a week or two before the swede seed is sown, on a part of the land intended for common turnips, or in an adjoining field if fallow; a small space will suffice, say a quarter of an acre, and better drilled than sown, and the thicker the better. The mustard is worth the cost to plough in.

If the swedes are drilled, and the drill admit, a row of mustard may be drilled *thick* at intervals of 20 or 30 yards over the field to attract the flies that come from an opposite direction to where the mustard is growing; the mustard seed should be steeped to cause it to vegetate before the turnip seed.

Furrows may be sown at intervals where a drill is not used.

Early sown slow-growing beet is sometimes injured by the fly; mustard sown or drilled will prevent this. A market gardener told me that his cabbage plants escaped being destroyed by the fly by saving his mustard intended for market, when all his neighbours' plants were destroyed. He was not aware that I had used mustard to protect my turnips, but told it me as a secret worth knowing.

Turnip flies may be found, I presume, on the mustard

in every garden; they breed in May or June, when they continue night and day on the turnips or mustard.

Less turnip seed is required if it is found by experience that the flies feed on the mustard.

In two cases I found that the mustard I had sown attracted the saw fly, and prevented their larva from injuring my turnips, while my neighbours' turnips were infested.

This long epistle is but a very imperfect history of the turnip fly, its nature and habits, where bred, why turnips are more injured by the fly than formerly, &c.

I am, sir, your obedient servant,

CHAS. POPPY.

Witnesham, Ipswich, April 2nd.

SPROTBRO' FARMERS' CLUB.

A meeting of the members of this club took place on the evening of January 11th, at the house of Mr. Avery, the Boat Inn. In consequence of several unavoidable circumstances, the attendance of members was not so numerous as on previous occasions. There was, however, no diminution in the interest of the discussion, and it may be stated without fear of contradiction that the debate was equally, if not more, satisfactory than any one which had preceded it. Mr. WOOD was unanimously called to the chair.—The subject which had been selected for the evening's consideration was that of "manures."

Mr. HICKSON (Sprotbro') gave his experience on the subject. He said he preferred the various manures which were taken into the fold-yard being mixed as much together as possible. For instance, that from the stable, from the cow-house, and what was made in the yard, were greatly improved by being thrown together, and which should be applied to the land in a fermented state; turned from nine days to three weeks before using. In this condition he found it better for turnips than when cold. As they found a change of cropping much more successful, so he believed they would find a change in the manures; and, therefore, he recommended the use of bones dissolved, whether by sulphuric acid or any other means. He had seen dissolved and raw bones used together, and the dissolved ones did much better; besides, the cost was less. His chief object in using these was simply giving the land a change. They had found burnt clay and ashes good for barley. They had all long used bones, rape-dust, and farm-yard manure. With regard to other tillages he was not very fond of guano, on account of its uncertainty—sometimes being successful and sometimes otherwise. In using bones he preferred mixing with them a little rape-dust. He might also observe that a greater change of cropping was desirable; as by growing line, tares, or mustard. He thought mustard might be grown to profit without allowing it to stand until it was ripe. If the land was anything like clean, they might plough it, sow the seed, and then plough the crop in, which would certainly improve the soil. It also might be sown on the ridges of turnips at the last time of hoeing; the sheep eating it if they

chose to do so. His main object, he repeated, was in recommending a change of manuring. He intended trying the plan on a small scale, and then he could be able to report of its results. If they were not bound by agreement, he considered they ought to grow occasionally such half-tillage crops as line; not as a general crop, but as a variation they might be found beneficial.

Mr. DUNWELL, jun. (Wilsic), in reference to a remark of Mr. Hickson's as to growing tares and lints, and such like crops, by way of a change, observed that that plan he had seen tried, but it was not successful. The tares and lints were mown, and eaten by sheep upon the land, from out of racks, in addition to a supply of cake; and yet withal the following wheat crop suffered. The difference was not so important in the barley.

Mr. GEO. MANN (Seawsby) was next called upon. He said he considered that it was the duty of all of them to state fully and fairly their individual experience, and whether they succeeded or failed. The subject they had that night met to debate upon was one of the greatest importance, and one which he thought opened a very wide field for discussion. He agreed with the remark of Mr. Hickson's that as there were many new manures offered to their notice, they ought first of all to try them on a small scale, not too much of one at a time. He believed this club at one of their former meetings had come to the conclusion that farm-yard manure, with bones, was best suited for growing turnips. In that opinion he quite agreed. Too much attention, however, could not be paid to the making of that manure; and therefore the cattle in the yards must not be neglected. With respect to feeding and breeding stock, experience had taught him that stock bred upon the farm, if of a good sort, did better than when bought in; consequently he reared every calf dropped both in winter and summer. It was quite necessary to keep their calves in a growing state, giving an unlimited supply of food, thus allowing them never to remain at a stand-still, and by this means he got bullocks off fat at two years old which formerly had to be kept until three years. Not only was much time saved in bringing them to market, but the manure was also greatly improved. Their farm-yards generally were very ill-adapted for the purposes for which they were required. Every care should be paid to the yard and the stock in winter, so that a poor animal, with the present price of cake, would not be found at spring. Many of them had too much

straw in winter, and as they were much inconvenienced by the general deficiency of yard-room, it was too apt to be wasted. If, however, they had a better arrangement in their yards, and of their cattle, they would be able to have their straw more equally trodden, and thus improve the manure. He had hitherto been very careless as to the liquid manure, but he was quite satisfied that ought not to be the case. It was very necessary that their out-buildings should be spouted, and have the rain-water conducted away. Whether it was better to apply this manure in a liquid state, or have it mixed with compost, he would not say. He preferred mixing it with compost, and with it they certainly might have as good a tillage as some which they bought. He had been accustomed to the use of bones as much as most of them. He had seen sixty bushels per acre laid upon the land with a shovel. There could be no doubt that their fertilizing qualities were then not exhausted so soon as by the present method of grinding; and some of the fields which many years ago received such a liberal dressing were indebted to that circumstance for the present fine crops they now saw grown upon them. He remembered some years ago observing at Pigburn, in going through a field of wheat, that one portion was much better "topped" than the other; and on inquiry he found that many years previously this part had received what would now be considered an excessive dressing of bones. He was not favourable to dissolved bones. He had this last year adopted Mr. Pusey's plan, that was, by the use of sand, and a rich mould appeared to be the result, which he had drilled with a portion of his turnips. The turnips which had not received dissolved bones were superior to those which had. He had no doubt that the extra quantity of bones which had been given to the land, and which he had before referred to, would tell for years to come. He was, therefore, no advocate for dissolved bones, and thought they took away too much out of the land, without leaving sufficient for after crops; but this was a question for the chemist to decide. With respect to guano: some spoke very favourably of it. He believed that the late seasons had given it every advantage. It was an excellent top-dressing for both wheat and barley; in fact, every yard that received it told of its beneficial effects. Rape-dust did well in wet seasons, but it was not at all suited for a dry one. It was surprising how well it had done the last season. He had used very little guano, but from his experience and what he had seen, he thought that it was most successful as a top dressing. He might state, nevertheless, that the best crop of turnips he had seen was one which had been grown from guano. There was no question that artificial manure had been the making of their land. Formerly it kept but little stock, and with sheep and the use of artificial tillages, that which was then considered the poorest was now the best in the parish. There was one circumstance which he wished more particularly to impress upon their minds. Since the introduction of the new manures of which they had been speaking, he thought that the farmer ought to possess some knowledge of chemistry; and he trusted those who had children to follow them in their occupation would not allow

them to complete their education without allowing them to learn something of agricultural chemistry. However good practice might be, there could be no doubt that practice with science was much better. Agriculture had very much improved in the last half century; much remained yet to be done. Their only object was to grow as much as they could get the land to produce. He referred them to the speech of their member—Mr. Denison—delivered a little while ago at the Wakefield show, when he recommended them to "Read, read." He quite agreed with Mr. Denison, and he was confident if they only attended their clubs and heard what practical men said, they would become all the wiser for what they were told. For himself he could say, that he never went away from home but he returned all the better for what he had seen. The country was now dotted over with scientific men, and from all these they might learn something. The present prices of corn were certainly low and the times discouraging: he still believed a good time was in store for them. They must grow more produce; and if they wished to farm for profit they must farm well. With respect to the application of their tillages, he had heard of some who at the present time spread their farm-yard manure on the land for turnips. He did not think it was a plan which was generally followed, although he had seen it practised twenty years ago. On their own soils, for turnips he preferred, with Mr. Hickson, laying it between the ridges at the time of sowing. On stronger soils it might be found better. The fertilizing action was more immediate with dissolved bones, but he thought there was much more permanency in bone-dust. Turnips which were required for early eating, they might employ dissolved bones. They now had their bones ground so small, that it was quite a different thing to what it was when they were at first applied to the land. He knew of a person at Mar, who remembered the first load of bones which came to that village, and so liberally were they thrown upon the land and in such large pieces that they were accustomed to tread them in after the land was ploughed. Bones were best adapted for growing turnips. If twenty bushels of bones per acre were applied to wheat it would not be so profitable as if applied to turnips. They were more advantageous in light soils for green crops. They also succeeded better in warm weather. In cold clay land they were found of no benefit whatever. He had last year tried Kagenbusch's manure, but it did not succeed. The season was certainly unfavourable for it. Liquid manure, he again said, was best mixed with compost, and with it he had no doubt they might make as good manure as some for which they now gave £5 per ton. There could be no question that improvements were required in their farm-yards; more so than in anything else. They were all much indebted to the suggestions of scientific men, and if they did not at all times speak what was really practicable, they set them a thinking, and thus created new ideas and new plans. He urged upon them to make a better use of their straw, and a better arrangement of their farm-yards and in the classification of cattle; more manure would be made at home, and thus part of the immense expense they

were now put to in the purchase of artificial manures saved.

In answer to questions from several members,

Mr. MANN further observed that bones in the half-inch state lasted longer than dust, and he gave that description the preference. Dissolved bones might be better where the crop of turnips was liable to be destroyed by the wire-worm.

Mr. JENKINSON (Cadeby) was next called upon. He complimented Mr. Mann for the interesting report he had given them, and he could truly say he agreed with everything he had said. His farm nearly wholly consisted of arable land; therefore he had much straw to consume, and was required to keep considerably more cattle in winter than he could in summer. The question which sort of cattle for winter keeping was most profitable was one very important to himself, since he must keep some in order to convert his straw into manure. He had tried many sorts; but he had not found them at all profitable—sometimes realizing, and sometimes not, as much as they cost him. Last year it was a very unfavourable season; but without any profit he thought it better to have stock, rather than have the straw in a half-made state. With respect to liquid manure, Mr. Jenkinson gave some interesting facts from a work which he had been reading, known as the "Muck Manual." From it, it appeared that the Flemish farmers and their farm yards were in a very different state to our own. The urine of cattle was there caught without going amongst the fold-yard manure. With the price of labour here he thought their plans would not be profitable with themselves. Many experiments with the liquid and farm-yard manures were detailed; but taking into account the respective proportions of each, the farm-yard manure was the more successful. Presuming that 20 loads of farm-yard manure and 20 bushels of bones per acre produced the same result, it was evident that the bones were the cheapest. He was of opinion that bones, with rape-dust, drilled together, was the cheapest tillage they could use for turnips. Last year he had tried nine loads of good Doncaster manure against 10 bushels of bone-dust and two cwts. of guano per acre. He did expect the former would have proved the more successful; but it was not so, the light dressing of guano and bones growing the best crop. The comparative expense he estimated at £4 10s. for the town manure, and £2 per acre for the bones and guano. At one period it was his practice to apply to turnips no farm-yard manure, but only bones at the rate of 20 to 30 bushels per acre; and he had never better turnips. He laid his farm-yard manure upon the seeds. In one instance he had applied the manure too late, and a hot season following, it did more harm than good; and, therefore, it was advisable to lay it as soon as possible upon the seeds. He was confident that bones were most profitable for turnips, and supposing that they spent £2 per acre, it was more judiciously expended in bones than in purchasing manure. Mr. Mann made use of an observation which he could quite bear out. He observed that he never went from home without learning something. He was of the same opinion. If a person had any discrimination whatever he could not go

from home without gaining some information which was valuable to him. Last year he had preferred bones and rape-dust for turnips. Rape-dust very much depended upon a season. In 1817 he got a ton of rape-dust which cost him £10 and was ground as fine as flour. The rape-dust of the present day was altogether of quite a different description. Guano he would also apply occasionally with bones for turnips; but as at the time of the year which this crop was sown fine weather was more probable, the chances of its success were, therefore, against it. He had used guano for turnips, as a top dressing, and on grass land, and only in two instances had it remunerated him for the outlay. In one of them he gave as a top-dressing to a crop of wheat 2½ cwt. per acre, and here he had found much benefit. Upon a portion of a crop of rapes he applied farm-yard manure and two cwt. of guano per acre, while on another portion of the same crop he gave three cwt. of guano. In the portion which received only guano the wheat crop was very deficient as compared with the other.

Mr. HICKSON had used guano, and it was not generally successful. He had been unfortunate in the season. On one occasion, on a crop of rapes he found it of the greatest benefit.

Mr. WEBSTER (Sprothro') had applied guano at the rate of six cwt. per acre, mixed with ashes, and had got good crops of turnips.

A somewhat desultory conversation amongst the members followed in respect of the value of guano and the time of application of farm-yard manure to seeds; the result of which was that as guano was very uncertain in its effects, and chiefly dependent upon a wet season, its general use was not advisable except as a top dressing; while with regard to the latter question the unanimous opinion was that the sooner farm-yard manure was laid upon the land after harvest the more efficacious was it in its effects.

Mr. DUNWELL stated that he would apply not less than half a ton of guano per acre for turnips, sown broadcast from a hopper, the land ridged not too deep, afterwards splitting the ridges, and then drilling the seed. The turnips would be equal to any grown from other tillages. They had used it for five years, and it had never failed. The value of this guano was about £8 per ton, although he believed the guano which formerly cost £15 per ton was cheaper at that price than the present offered at £8.

After some further remarks, the following resolution was unanimously agreed upon:—

"With a view to the permanent improvement and most profitable cultivation of the soil, this meeting is of opinion that good farm-yard manure is superior to anything else, allowing it to ferment, applying it to the land immediately after, or while in such state. In artificial tillages a decided preference is given to bones. It would, however, recommend for more general use, a judicious application of the two together."

After a vote of thanks to the chairman, the meeting separated.

CALENDAR OF HORTICULTURE.—MAY.

The last article was brought to the end of the third week of March, just after the spring equinox, till when the weather had been settled, and in a state entirely propitious to all the operations of garden and field; some indications of a change then occurred, which passed away till the day of the new moon on the 24th. Little reliance is to be placed upon the changes of that luminary; although experience appears in some degree to sanction the opinion that the morning lunations rather favour a showery condition of weather, as, on the contrary, those which occur in the afternoon after 2 o'clock till rather after midnight, may indicate fine weather.

We would not urge this view of lunar changes as in any great degree worthy of anything beyond a certain degree of observation; but now, in order to repudiate a weak superstition, it may not be amiss to allude to the moon of Saturday, March 24. Some persons attaching faith to an old saying, that bad weather follows a change on the seventh day of the week, have availed themselves of the occasion thus offered, and announced in the columns of the public press that there would, in all probability, be rain on at least twenty days between that 24th day and the following *new moon*, which would occur on Sunday, the 22nd inst! Now, it must be admitted that to the 16th April inclusive our tables note nineteen days whereon there has been rain, snow, or sleet, with a very depressed temperature. So far, then, the prophets of evil have appeared to be borne out in their gloomy prognostics. But here facts must be set in array against superstition; for not only has the weather been actually dry and more favourable in North Britain, but we had a *full moon* on the 11th of November, 1848, followed by a *new moon* on the 25th, both occurring on the Saturday—and yet twenty-two of the days were dry; and many of the remainder so slightly wet, that November and December were justly considered to be the finest months of the last quarter of that year. It were well to lose sight of lunar prognostics generally, and especially so far as may be referred to hours or days.

OPERATIONS IN THE KITCHEN GARDEN.

The month divides into two periods: the first of which includes the 15th day, when, in ordinary seasons there remains little danger of sharp morning frosts; the second period extends to the end of May. In the first—Sow *kidney beans*, and the runner varieties, in pots or pans containing light

vegetable mould, with much fibrous matter. The seeds need not be more than an inch covered; and may be very numerous in the pots, &c. Being then enclosed in a secure frame, or placed in some light shed, the plants will advance rapidly; and the roots taking firm hold of the fibrous portions will be ready to be safely transplanted so soon as the open ground shall be warmed by the sun. Seeds sown early in open beds or borders will always be in peril if the season prove cold and rainy.

Sow *peas* of every variety. The tall narrows remain longest in season, provided the ground be deeply prepared; but the "Queen of the Dwarfs" is perhaps the best variety of all, because the seeds may be put two or three inches apart, and the rows need not be more than eighteen or twenty inches asunder, so dwarfish is its habit.

Stir the soil of all the previous sowings before staking the plants, and also *that* between rows of *beans*, *cabbages*, *kail*, and the several species of *brassica*: then draw a little earth near the stems. One remark suggests itself concerning *guano*; as its great use is found in the ammoniacal salts it contains. *Brassicæ* abound in hydro-nitrogenous elements; and I have proved that in dry weather, the soil being a firm hazel loam, guano-liquor, prepared by thoroughly blending about one ounce of it with a gallon of rain-water, and applied to the extent of one pint on the stirred earth of each plant, induced a richness of colour and luxuriance of growth that was quite remarkable.

Transplant spring-sown *cabbages* and *savoys* for autumn and winter, also red cabbages, into open spots. Plant in rows during moist weather two to two-and-a-half feet asunder; the plants from eighteen inches to two feet in the rows. Sow, for *savoy*, the "Dwarf green," to transplant in July.

Remove the glasses from *cauliflowers*; and when the heads begin to appear break and turn over them a leaf or two, as a defence from hot sun and wet. If water be required, "dish" the ground about the stems, or rather form a ring-channel, about six inches remote, and pour into it the guano-liquor, or of a fluid prepared by stirring together a peck of sheep manure, a pint of coal soot, and about half the quantity of common salt, for eighteen gallons of water. In three days this fluid, after repeated stirrings, will, *when bright*, be ready for use; and a further quantity may be made by adding to the sediment twelve gallons more of water.

Asparagus may be cut, with a saw-like knife,

slanting below the surface. We would fain hope that the fashionable, tasteless packwax begins to be discouraged; fine, green, tender shoots, six inches or more long, and full of flavour, ought only to be encouraged.

Sow lettuce seed, transplant some coss and other sorts previously sown, and prefer moist weather. Tie up some plants that are forward.

Sow small salads, *cresses*, *mustard*, *radish*, &c., fortnightly, *spinach* twice, *turnips*, *carrots*, *parsley*, and sweet herbs; but the latter are more successfully raised by rooted suckers, slips, and root-stocks—as *mint*, *sage*, *thyme*, *marjoram*, *lavender*, and *rosemary*: shade and moisture are, however, required.

In the second and warmer period, sow *cucumbers* over a manured trench for late table use, and for girkins: cover with a hand-glass.

Plant *gourds*, *pumpkins*, *vegetable marrows*, and *loze-apples* near a warm wall; to be trained either against a trellis or stakes placed slanting, or close against the face of the wall.

Slugs are sad pests. Sprinkle powdered quick-lime freely morning and evening. Lime-water may occasionally be used.

Celery.—Plant out from the seed-beds of March into some small plot of rich earth, first thoroughly dug and raked. Set the plants five or six inches apart. Sometimes large pans are used, the bottoms of which are covered with an inch or two of decaying littery dung. The roots seize hold of this, and become full and stocky; and then are moved with safety.

HARDY FRUIT DEPARTMENT.

Apricots, *peaches*, and *nectarines* begin to make vigorous shoots; and will demand particular care to select and secure those retained. Hence, one of the first operations (and which also must be persisted in by degrees) is that termed “disbudding,” that is, the removal of the fore-right, back, and other irregular new wood. By this means not only is figure consulted, but a proper portion of well-placed bearing shoots “for another year” is provided. Over-luxuriant shoots are generally considered useless; but the skilful pruner can frequently convert them to good purpose. Laying-in and nailing (or what is far preferable tying to iron rod-trellisses fixed an inch or two in front of the wall’s face) must be thought of when the new shoots become firmish in texture, so as to retain pliability consistent with strength.

Treat the *spur-bearing*, *wall*, and *espalier trees* much in the same way with respect to the obliteration of useless shoots. Train the leaders at full length. Watch the setting of the fruit of all trees, and begin with *apricots*, to thin it, when too thickly set.

Vines on walls.—If the weather be warm the shoots will advance rapidly, and the bearers must be daily observed to prevent their breaking off: useless barren wood is to be removed; June, however, will be the criterion season, as it always is.

Strawberries of the early kinds will be in full blossom. Such are Cuthill’s “Black Prince,” very fine, and the Keen’s seedlings; the “Pines,” “Queen,” and Knight’s “Elton” progressively later. If watering be required, now is the season to give it copiously; but a full covering of straw litter between the rows, or round border plants, laid on before the spring moisture has passed away, offers the best security. The trusses of fruit are thereby kept clean, and a vast deal of trouble is obviated.

Examine trees newly grafted. Remove wood shoots arising from below, on the stock. As the scions advance in length, remove the clay, secure them by neat sticks and ties (especially “crown-grafts”) from being broken by wind, and gradually loosen the bandages first put on. The *buds* of last year will shoot vigorously, and should be equally guarded.

FORCED FRUITS.

Peaches demand great attention. Ventilate wherever fruit is ripening; protect from glaring sun; and think seriously of the good effects that may arise from the adoption of glass *roughed by grinding* on one surface, or by a light, durable varnish (fluoric acid, were it cheap and of ready application, might be suggested). I believe that we do not sufficiently appreciate the advantages of chastened *white light*!

Pine-apples.—If the spring-shifting be still in arrears, it must be attended to. Avoid a check; shade till the roots begin again to work, and then excite growth by a warm moist atmosphere. Every gardener who possesses command of means, ought to inspect the operations in other gardens wherein the Hamiltonian and Meudon systems are going on; so that, by comparison, he might be more qualified to regulate his own practice.

Figs must be freely watered; using occasionally some manuring liquid. As the young shoots advance compress them forcibly (about the fourth or fifth joint) between the thumb and finger till the tissue feels to give way; and by this method the late Mr. Knight found that more fruit was developed.

FLORAL DEPARTMENTS.

The few lines which follow are the substance of some directions which I find in M’Intosh’s *Journal of Horticulture*. Perform all the operations of planting, sowing, and arranging for the summer. No trees or shrubs, however, can be safely removed, excepting *evergreens* (and those only in a showery

season). "Hardy annuals may still be sown on the first days of the month; and *verbenas*, with other stock saved over winter for 'bedding-out' should go into their places after the middle of the month; those propagated *late* in autumn, in winter, or spring, should be forwarded rapidly, to fit them for planting in June." These directions are somewhat novel, and merit the amateur's particular regard.

Perform all the routine operations connected with a neat and orderly appearance.

Propagate cuttings of tender plants; and in the stoves and glass-houses suit the temperature, moisture, and admission of air according to the absence, presence, and power of sun.

ORCHIDS (this word was, by misconception or oversight, printed *orchard*-house in our last).—These singular plants will, by hundreds, be coming in bloom, in our larger establishments, and their abodes must be kept extremely vaporous by copious watering of the floors, and by shading when the sun is powerful. I hope in my next to report my own observations made at one of the best establishments.

The weather has become more and more wintery, with abundance of snow on the 17th and 19th. My lowest temperature on the morning of the 18th was 29°; *i. e.*, 3° of frost. Some gusty wind, with a few scuds of snow on the 20th, with more of sun than usual of late: this was very serviceable in drying the ground.

J. TOWERS.

Croydon, April 21.

DEEP CULTIVATION.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—Reading in your journal of the 9th inst. the report of Mr. Mechi's speech at the London Farmers' Club, on the subject of "Deep Cultivation," I was so forcibly struck with Mr. M's statement as to the value of *horse* labour, that I cannot but think it probable that your reporter or printer may have made an error.

In his calculation as to the cost of subsoiling, Mr. Mechi is stated to have said that the cost per day of nine horses would be 2s. each—18s.!! Now, Sir, this is what excites my astonishment! Mr. M. says it is *severe* work for six good horses to draw the subsoil plough, and yet declares the value of such *severe* work to be but 2s. per day per horse! I should value such work at exactly double! Why, even at the present price of corn, a strong, powerful horse required to perform *severe* work, cannot be kept for the amount indicated by Mr. M. as the value of his labour. Every practical man knows that if a horse be required to perform *severe* work, he must be kept well on good, sound food. My object is not to criticise, but to obtain information, and I shall be much pleased to learn how to keep my horses so as to be remunerated by their earning but 2s. a day each.

Before finishing my letter, I beg to ask Messrs. Mechi

and Beadel, if they think that the man who *farms for a living* can, with present rents and prices of produce, carry out the expensive system of deep cultivation &c., indicated by those gentlemen at the London Farmers' Club? Amateur agriculturists may do so; but the great bulk of tenant-farmers follow the occupation, not as amateurs, but to maintain themselves and families if they can.

In conclusion, I should like to know in what districts it is that farmers commonly plough but 2½ inches deep. In fifty years' experience I have not met with it as a common practice. I am, Sir, yours, &c.,

A SURREY FARMER.

Guildford, April 11.

AVERAGE PRICES OF WHEAT.

A return has been presented to the House of Commons, moved for by Mr. Bright, in continuation of a former return of Session 1842, which gives a statement of the average prices of wheat in fifteen principal agricultural and fifteen manufacturing and commercial towns in the three last weeks of April, August, and December, in each year since 1841. The aggregate averages are as follow:—

Years.	Aggregate Aver. last three weeks in April.		Aggregate Aver. last three weeks in August.		Aggregate Aver. last three weeks in December.	
	Agricultural towns.	Manufacturing towns.	Agricultural towns.	Manufacturing towns.	Agricultural towns.	Manufacturing towns.
1842...	s. d. 60 2 61 4 61 10	s. d. 60 9 61 5 60 9	s. d. 57 10 55 0 51 8	s. d. 56 11 56 3 54 3	s. d. 47 10 47 9 48 0	s. d. 46 4 47 3 46 10
1843...	46 11 47 10 47 10	45 4 45 10 46 10	61 3 59 10 55 0	60 2 59 4 56 7	50 9 50 4 50 3	52 2 51 3 50 5
1844...	55 4 55 7 55 5	55 3 55 6 56 2	48 10 50 10 50 6	49 7 50 8 51 3	45 3 45 10 45 11	45 3 45 7 45 10
1845...	46 10 46 4 46 4	46 3 46 4 45 9	57 5 56 8 56 6	55 7 56 1 55 8	60 8 59 6 56 3	58 6 57 6 55 4
1846...	58 3 57 7 58 0	55 8 55 6 56 0	46 2 47 4 49 1	44 1 44 7 46 9	61 1 61 2 63 3	60 1 60 6 62 9
1847...	75 0 75 1 77 0	73 3 73 7 75 8	67 2 61 7 59 3	65 2 62 8 60 5	51 9 52 2 53 6	54 1 54 2 55 3
1848...	50 4 49 7 50 5	50 0 49 6 50 3	50 6 50 1 52 3	51 9 51 8 53 1	47 10 47 8 47 1	48 10 48 11 48 4

The fifteen agricultural towns chosen for the above averages are—Guildford, Ipswich, Canterbury, Woodbridge, Lincoln, York, Morpeth, Northampton, Newark, Gloucester, Chelmsford, Colchester, Royston, Bury, and Taunton.

The manufacturing and commercial—Leeds, Sheffield, Hull, Manchester, Birmingham, Leicester, Nottingham, Derby, Norwich, Wakefield, Newcastle, Worcester, Coventry, Bristol, and Liverpool.

METEOROLOGICAL DIARY—1849.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.		WEATHER	
Day.	8 a. m.	10 p. m.	Min.	Max.	10 p. m.	Direction.	Force.	8 a. m.	2 p. m.		10 p. m.
Mar. 21	30.27	30.22	37	48	41	W. by South	airy	cloudy	cloudy	fine	dry
22	30.19	30.07	38	42	39	East	keen	cloudy	cloudy	cloudy	dry
23	30.02	29.98	38	43	40	N. East	lively	cloudy	cloudy	cloudy	dry
24	29.97	29.93	35	46	33	E. by North	lively	fine	sun	fine	snow
25	29.88	29.88	30	37	35	N. by East	cutting	cloudy	cloudy	cloudy	snow
26	29.88	29.86	34	39	37	N. by East	lively	cloudy	cloudy	cloudy	damp
27	29.60	29.37	35	47	45	S.E., S. by W.	calm	cloudy	cloudy	cloudy	dry
28	29.26	29.34	35	43	40	S. East	gentle	cloudy	cloudy	cloudy	snow & rain
29	29.34	29.34	37	50	40	S. East	lively	cloudy	cloudy	fine	rain
30	29.29	29.40	38	49	44	S. West	brisk	cloudy	cloudy	fine	rain
31	29.50	29.63	31	57	47	S. West	lively	fine	sun	cloudy	rain
April 1	29.50	29.48	43	55	47	South	variabl	cloudy	fine	cloudy	rain
2	29.48	29.40	43	50	43	South	lively	fine	cloudy	cloudy	rain
3	29.48	29.64	40	50	45	W. by N., by S.	gentle	fine	sun	fine	dry
4	29.65	29.44	35	51	45	S.W., S.	gl.bsk.	fine	sun	cloudy	dry
5	29.36	29.50	44	56	46	S. West	gentle	cloudy	sun	fine	rain
6	29.56	29.50	35	62	51	S. by East	gentle	fine	sun	fine	dry
7	29.36	29.40	44	53	47	S. by West	gentle	cloudy	sun	fine	rain
8	29.37	29.42	43	57	49	Southerly	gentle	cloudy	sun	fine	rain
9	29.40	29.50	41	51	46	E.N.E.	gentle	fog	fine	cloudy	rain
10	29.50	29.62	43	51	42	N. East	lively	cloudy	cloudy	cloudy	rain
11	29.63	29.77	39	46	38	E.N.E.	gentle	cloudy	cloudy	cloudy	rain
12	29.77	29.60	33	47	39	S. Westerly	gentle	fine	fine	cloudy	a hint of
13	29.36	29.20	39	44	38	S.S.W.	lively	cloudy	cloudy	fine	very wet
14	29.25	29.49	33	50	42	S. by E., var.	lively	fine	cloudy	fine	a shower
15	29.55	29.69	39	44	42	N.N.E.	lively	cloudy	cloudy	cloudy	drizzle
16	29.75	29.72	39	46	42	E. by N., S.W.	lively	fine	sun	cloudy	dry
17	29.72	29.74	35	46	31	N. West	lively	fine	cloudy	fine	snow
18	29.88	29.60	29	43	37	N. Westerly	brisk	fine	cloudy	cloudy	snow
19	29.20	29.40	33	35	34	N. by East	v. brisk	cloudy	cloudy	cloudy	snow
20	29.49	29.77	33	46	38	Nly., N. by W.	brisk	fine	sun	fine	a hint

ESTIMATED AVERAGES OF APRIL.

Barometer.		Thermometer.		
High.	Low.	High.	Low.	Mean.
30.51	29.20	74	29	49.9

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Highest.	Lowest.	Mean.
48.	37.4	42.70

WEATHER AND PHENOMENA.

March 21.—Two solar spots; fair; fine sun. 22.—Cutting wind; dark and changeable. 23.—The same. 24.—Very cold; several small spots. 25.—Overcast; wintery. 26.—Same; a few late gleams. 27.—Overcast. 28.—Wet morning. 29.—Showery. 30.—Clearing, after morning showers. 31.—Showers and gleams late; six or seven minute spots. April 1.—Four spots; pretty fine. 2.—Fine forenoon; changeable. 3.—Clear; fine sunset. 4.—Morning fine; immense dew. 5.—Much wet night, and afternoon halo. 6.—Strong rime; superb sunset; two or three solar spots. 7.—Rain, clearing towards sunset; seven minute spots. 8.—Nearly the same number; growing day, generally fine. 9.—Fog cleared early; gleams; changeable.

10.—Very gloomy; masses of hazy clouds. 12.—Hoar frost at sunrise; changeable. 13.—Wet. 14.—Improving, after frosty rime. 15.—Most uncomfortable sort of Scotch mist. 16.—One small spot; fine till 6 P.M. 17.—Excessive snow-scud, ending in keen frost. 18.—Snow in the night; drying gusts, with snow. 19.—Immense snow, half-melting, till 5 P.M.

LUNATIONS.—March: New moon, 24th, 6 minutes after 2, afternoon. February: Full moon, 7th, 50 minutes after 3, P.M.; last quarter, 15th day, 8 minutes after 3, P.M.

REMARKS REFERRING TO AGRICULTURE.—To the 25th of March, the dry weather was most favourable, and a great deal of work was done. Hence, all crops appear progressing; and they who did not avail themselves of their position have found, or ought to find, reason for regret. The first rains, subsequently, were excellent; but we must express sorrow for the long continuance of wet and cold weather. The late snow (profuse on the 19th) and rather keen frost do not prove welcome; I, however, anticipate a benign change ere long.

J. TOWERS.

Croydon.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR APRIL.

The extremely severe weather, for the time of year, experienced during the greater portion of this month, has tended materially to check the progress of vegetation in general, and especially the young grain plants. On several occasions we have been visited with rather heavy falls of snow, and at one time much apprehension existed that the wheats, as well as the barleys and oats, had received considerable and permanent injury. The change in the temperature, about the 25th, tended to allay these apprehensions to some extent: yet we much fear that the Spring-corn crops will be some time ere they assume anything like a healthy appearance. The re-commencement of hostilities between Denmark and the Duchies of Schleswig-Holstein—and which are calculated to interfere to some extent with our importations of corn from the Baltic ports—gave a firm tone to the trade in our leading markets in the early part of the month. Prices advanced 1s. to 2s. per quarter; but towards its close the demand fell off, and with it the quotations were reduced to nearly their former level. The cold weather has greatly improved the condition of the new wheats, the transactions in which have certainly increased, though they have fallen considerably short of those at most corresponding periods. From abroad the imports have been on a liberal scale, yet nearly the whole of them have passed into consumption at the prevailing nominal duties. The quantity of home-grown wheat this time on hand is admitted to be small; and it is pretty generally considered that large supplies of foreign will yet be required to make good the deficiencies in last year's crop. That we shall experience no difficulty in obtaining all that we require is obvious. Throughout France and the United States, an immense surplus quantity of grain was produced in 1848; and it is placed beyond a doubt that we can draw almost unlimited supplies from the latter country, without materially adding to the original cost. In Ireland the consumption of Indian corn is progressing at a rapid rate, and it is evident that that article is getting greatly into favour amongst the lower classes.

Farm labours, notwithstanding the changeable state of the weather, are tolerably forward. Potato planting has occupied much attention during the month. The quantity planted in the autumn of last year was small; but we understand the system, so far as it has been carried out, has proved success-

ful. At the present time the quantity of potatoes on hand is small. The cold weather having naturally assisted consumption, prices have considerably advanced—really prime qualities having sold as high as 180s. per ton. The large imports of foreign—about 5,000 tons—have tended to keep down the value of the inferior kinds.

A shortness of grass has been experienced in all parts of the United Kingdom. That circumstance, however, has not materially affected the health of the stock, from the large supplies of hay on hand; nor had any decided effect upon the value of dry food, which has been selling at very moderate prices.

The fall of lambs, allowing for about average losses, has been an extremely good one. The disease so prevalent, amongst beasts last year, has nearly disappeared.

The turnip crop is variously estimated. In some districts the turnips have run much to seed. The crop grasses have not progressed very favourably, owing to the cold winds.

The ruinously low prices of fat stock, and the depressed value of corn, have been productive of great complaints among the farmers. Many are the remedies pointed out to cure these evils; but our firm impression is, that so long as almost untaxed commodities are allowed to come into competition with those highly taxed, so long will a depressed state of things be the result.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

The continuous increase in the supplies of stock brought forward in our markets has had a most depressing influence in the demand for, and prices of, each description; indeed, we scarcely recollect any period at which the value of both beasts and sheep has ruled so low as during the month just concluded. We have been gravely informed by those who pretend to a knowledge of agricultural affairs, that the present low currencies are the result solely of unnecessary alarm; that, in other words, the farmers are needlessly sacrificing their property; and, further, that there is every reasonable prospect of better times. We need scarcely say that such hypothesis is based on a false judgment. Those who have read our observations from time to time will have perceived that we have predicted the present ruinous state of things, which has arisen, not from any unnecessary alarm, but solely from the

supplies exceeding to a considerable extent the power of consumption. The high prices of last year induced the graziers in all parts of the country to purchase store animals extensively, and the abundance of pasture and other food enabled them to keep back large numbers which were but moderately fattened; hence, for a season, the arrivals from abroad passed rapidly into the hands of the butchers, without having any material effect upon the value of home-fed stock, which, under existing circumstances, has rapidly increased in number in the whole of our large grazing districts. Our opinion, ever since the passing of the new tariff laws, has been that something like the present crisis was inevitable; and it must be a matter of speculation when it will end. It has been assumed that, as we draw the largest portion of our foreign supplies from a high-priced country—Holland—that a fall in value here would stop importations. To an extent this may appear a reasonable argument; but the question is—what is to become of the stock long since ready for market, both as to age and condition? The simple reply must be—that to keep it longer in the home-stead would be a daily sacrifice of capital, and hence no alternative presents itself but that of selling at prevailing prices. The numbers of both beasts and sheep, not only in this country, but likewise on the continent, are now larger than for many years past; and we much fear that little or no improvement can take place in their prices for a considerable time. In Smithfield the highest general quotation for the best Scots has not exceeded 3s. 6d.; while the best old Downs in the wool have fallen to 4s., out of the wool to 3s. 4d. per 8lbs. At those miserably low prices the demand has ruled heavy in the extreme, and clearances have not been effected on any market day. The annexed supplies have been brought forward:—

Beasts	16,678	Head.
Cows	520	
Sheep and Lambs	110,070	
Calves	1,178	
Pigs	1,840	

Corresponding Periods.

April, 1846. April, 1847. April, 1848.

Beasts	15,224	..	17,810	..	15,322
Cows	587	..	461	..	577
Sheep & Lambs	91,620	..	103,620	..	82,310
Calves	905	..	1,049	..	1,375
Pigs	2,351	..	2,570	..	2,818

The bullock droves, since our last, have been derived from the following quarters:—

Norfolk, Suffolk, &c.....	Head.	7,400
Western, and midland counties.....	2,900	
Other parts of England	2,100	
Scotland	1,740	

The prices have ruled as under:—

Per 8 lbs. to sink the offal.

	s.	d.	s.	d.
Beef, from	2	0	3	6
Mutton	2	4	4	2
Lamb	5	0	6	4
Veal	3	2	4	2
Pork	3	0	4	2

Corresponding Periods.

April, 1846. April, 1847. April, 1848.

	s.	d.	s.	d.	s.	d.	s.	d.
Beef, from..	2	4	3	6	3	4	4	6
Mutton....	3	4	4	6	3	10	5	8
Lamb	5	4	6	8	5	4	6	4
Veal	4	4	5	4	4	2	5	4
Pork.....	3	4	5	2	3	10	5	0

The total importation of foreign stock into London has not exceeded 3,810 head. At the corresponding period, in 1848, we received 5,391; and at the same time in 1847, 5,826 head.

Imports into London.

Beasts	1,201	Head.
Sheep	1,866	
Lambs	87	
Calves	637	
Pigs	19	

For the time of year, the arrivals of slaughtered meat up to Newgate and Leadenhall have been good, or about 9,000 carcasses, chiefly of mutton and veal, the season for pigs being now over. The trade has ruled exceedingly heavy, on the following terms, taking the average prices during the month:—Beef, from 2s. to 3s. 2d.; mutton, 2s. 4d. to 3s. 2d.; lamb, 5s. to 6s.; veal, 3s. to 4s.; and pork, 3s. to 4s. 2d. per 8lbs. by the carcass.

On the whole the stock has fared tolerably well, although a great scarcity of grass, owing to the prevailing cold weather, has been generally experienced.

PROFITS OF PIG FEEDING.—As the slaughtering season is now closed, the three following cases may be considered a criterion of the profit derived from pig feeding. The three pigs were two years old, and had had three litters each, which would average £30. The least belonged to Mr. Marsden, and when killed weighed 642 lbs., at 5½d. per lb., amounts to £15 7s. 7½d., and by adding £30 for the young pigs, makes the amount £45 7s. 7½d. The first cost and the extra keep, exclusive of the waste from the house, and the feeding, was £7. By deducting this £7, it leaves a nett profit of £38 7s. 7½d.—The second belonged to Mr. Houldon, and weighed 674 lbs., which at 5½d. per lb., amounts to £16 2s. 11½d. In this pig the two leaves of fat weighed 48 lbs., and the loose fat 30lbs., making a total of 78 lbs. of fat, which was considered extraordinary great; and by adding its pigs its value is £46 2s. 11½d.; deducting £7 for its extra feed, it leaves a nett profit of £39 2s. 11½d.—The third belonged to Mr. Bailey, and weighed 803 lbs., which at 5½d., amounts to £19 4s. 9½d.; its young pigs makes it £49 4s. 9½d., and deducting £7, it leaves a profit of £42 4s. 9½d. The nett profit, therefore, of these three pigs, is £119 15s. 4½d., besides the valuable manure they made during the two years.—*Correspondent of the Lancaster Guardian.*

REVIEW OF THE CORN TRADE DURING THE MONTH OF APRIL.

We have now arrived at a period of the year when the character of the weather begins to exercise great influence on the tone of the corn trade; but owing to recent political occurrences on the continent, less attention has been bestowed on that subject than would otherwise have been the case. The renewal of hostilities between the Germans and Danes, and the probable effects which the war may have in diminishing the future supplies of corn from the northern ports of Europe, have, during the last few weeks, been the engrossing topic of conversation. When the news was first received that negotiations had been broken off, and that the Schleswig Holstein question was to be settled by an appeal to arms, an immediate effect was produced on prices of grain in our markets. The notice given by the Danish government of its intention to blockade the principal Baltic ports, the rivers Elbe, Weser, and Jahde, and that neutral, as well as the German flag, would be expected to observe the blockade, at once led to the conclusion that no further shipments would be made; nor has anything since occurred to alter this opinion. It would appear therefore that the expected supplies from the Baltic, the anticipation of which had no doubt some effect in reducing prices in March, are not likely to come forward at present; and the future value of agricultural produce in this country will therefore, in all probability, be in some measure dependent on the turn affairs may take between the belligerent parties. By the latest accounts from the theatre of war there appeared little prospect of a settlement, and business had been almost wholly suspended. The excitement which the first receipt of the intelligence produced here has, however, in a great degree subsided, and within the last week the upward movement in prices has received a check. The rise from the lowest point of depression was at one time nearly 4s. per qr. on wheat, and about 2s. per qr. on other articles. Since then buyers have deemed it advisable to pause in their operations, and view matters more calmly.

That we can be in no immediate want is certain; we have still considerable stocks of foreign corn in granary, and hitherto the weekly arrivals from abroad have shown little falling off. Though the Baltic may be closed against us, we have France, Holland, and Belgium to send us supplies, to say nothing of the south of Europe, and America; and

many parties, who were at first disposed to expect a material rise in prices, are already beginning to doubt whether the encouragement offered by free trade may not cause shipments to be made from the quarters last named, on a sufficiently extensive scale to enable us to do without supplies from the northern European ports. We are certainly not sanguine of any material or permanent advance in the value of agricultural produce whilst unrestricted importation is permitted, feeling convinced that the surplus growth of the world will be sure to find its way to this country as long as we have gold to give in exchange.

The character of the weather has been somewhat singular since our last: the month began favourably enough, with a moderately high temperature, and frequent showers. Subsequently the thermometer fell materially, and instead of rain we had snow and sleet; this continued up to the 20th, when the wind, which had previously been principally from the north and east, shifted to the southward, and though it has continued cool for the advanced period of the year, it is not now so cold as it has been. Whether the young barleys have wholly escaped injury from the severe night frosts and keen winds may be questioned, and it is certain that the early fruit trees must have been dreadfully cut up. As regards the wheat plant we are not apprehensive of mischief—indeed we are inclined to think that the destruction of the slug, wire-worm, &c., which the frost has most likely effected, will more than counterbalance any injury which vegetation may have suffered.

The reports from the agricultural districts are hitherto of an encouraging character. Wheat is generally described as wearing a healthy and promising aspect. On some badly drained cold clay lands it does not look so well as could be wished, but this is the exception to the rule. Spring corn, and beans and peas, have come up evenly; and though the growth has been checked lately by the cold, a fine May would bring everything forward.

We are therefore of opinion that the probabilities are rather against than in favour of any rise in prices. The appearance of the crops on the ground will shortly affect quotations more than any other circumstance, and should the weather now become warm and genial, the blockade of the Baltic would have less effect than might have been the case at an earlier period. In that case farmers would cer-

tainly become anxious to dispose of whatever stocks they may yet have on hand, whilst an inauspicious spring would lead them to hold. The weather will therefore, after all, mainly regulate quotations; but if nothing should occur to cause uneasiness as to the next harvest, an advance is, in our opinion, improbable.

The deliveries from the growers have rather increased of late, which, with the constant arrival of supplies from abroad, have enabled sellers to meet the increased demand experienced the first fortnight in April without inconvenience. Buyers appear now to have as much as they deem prudent to hold, and within the last week the trade has again become inactive, as well at the large consuming towns, as at the principal markets in the agricultural districts.

A detailed account of the transactions at Mark Lane will perhaps afford the best criterion of the actual variations which have occurred during the month, and we shall therefore proceed in our usual way, commencing with Monday, the 2nd April.

The show of wheat on that occasion by land-carriage samples from Essex, Kent, and Suffolk, was small; and the condition being improved by the frosty weather, the millers were tolerably free buyers, and the stands were cleared at previous prices. This was before the news of the Danish war had arrived: after that event had become known, sellers raised their pretensions; still no very marked change took place in quotations until the 16th inst., on which day the whole of the English supply was taken eagerly at an improvement of 2s., and in partial instances 3s., per qr. During the remainder of that week the tendency was still upwards; but on the 23rd the inquiry had fallen off, and the extreme rates of that day se'nnight were no longer obtainable. It would appear therefore that prices have for the present been at the highest; and in comparing quotations with those current at the close of last month, the advance will be found not to exceed 2s. per qr.

The arrivals of wheat from abroad have been tolerably large; between 65,000 qrs., and 70,000 qrs. having been received at the port of London alone, within the last four weeks. We are, however, inclined to think that from the extent of the purchases made by country buyers in the early part of the month, the stocks in granary must have been materially diminished.

The rise in the value of foreign has been fully as great as that on English wheat. During the fortnight ending April 16th a large business was done at very full terms, and though the enquiry has since slackened, the reaction in prices has scarcely amounted to 1s. per qr. When we last addressed our readers common Odessa wheat was

obtainable at 38s. to 39s., and Polish Odessa 40s. per qr.: these sorts have since been freely sold at 42s. to 44s., and fine qualities of red Brabant and French, which might at the close of March have been bought at 41s. to 45s., brought 48s. to 50s. per qr. on the 16th inst. Since then the country demand has fallen off, and the town millers being tolerably well stocked, a slight reaction has occurred; but, as we have already remarked, the fall from the rates above-named can hardly be estimated at 1s. per qr.

The advance in the value of wheat, and the generally firm tone of the trade about the middle of the month, induced the town millers to raise the top quotation of flour 2s. per sack on the 16th. The price of household flour had crept up 1s. to 2s. per sack previous to this being done, and French and American had also risen in proportion. Since then the bakers have manifested less inclination to purchase, and within the last eight or ten days the sale of all kinds of flour has been decidedly slow at the enhanced terms previously paid without reluctance.

The imports of flour have not been particularly heavy, but it is not improbable that supplies from America may increase, the value of the article having lately receded on the other side of the Atlantic, and the exchanges being very favourable for the American shipper. From France we have occasional offers of flour free on board at prices too near on an equality with those current here to allow of purchases being made with profit: a very small decline there would, however, leave a trifling margin, and we should not be surprised at further receipts from thence. American barrelled flour is at least 1s. and French sacks 1s. to 2s. higher than at the end of March, though prices are not quite so high as they were at one period of the month.

Barley of home growth has come to hand sparingly, and the arrivals from abroad have not been particularly liberal. At one time small Danish, and similar qualities of grinding barley, were sold at the low rate of 18s. to 19s. per qr. at Mark Lane, and fine foreign malting sorts at 24s. to 26s. These low rates induced a speculative demand, and a rally of about 2s. per qr. subsequently occurred. Within the last week the enquiry has again slackened, and ordinary grinding sorts, of which we have more on hand than any other description, have again tended downwards. English malting barley has, in consequence of its scarcity, commanded relatively high terms throughout the month, and 30s. per qr. may be regarded as the current value of fine samples.

The receipts of malt coastwise have been moderate, but a fair quantity has come to hand per railway, and the supply altogether has about kept pace

with the demand. About the middle of the month an advance of 1s. per qr. was, in partial instances, realized for the best manufacture; this has, however, since been lost, and quotations are now nearly the same as at the close of March.

The market has been largely supplied with oats, of which, however, a very small proportion has been from Ireland. In the early part of the month the receipts from abroad were very liberal, and more recently we have had good arrivals from our own coast and Scotland. Low as prices of this grain were when we last addressed our readers, a further decline of 1s. to 1s. 6d. per qr. occurred on the 9th of April: this fall had, however, the effect of leading to a more active business. The principal dealers, who had long acted on the reserve, began to purchase rather largely, and on the 16th about 1s. per qr. of the decline was recovered. The following week the supply proved too great for the demand, and we consider prices at present nearly 1s. per qr. below what they were at the end of last month. When the depression was the greatest, some tolerably good Swedish oats, weighing 37 to 38lbs. per bushel, were parted with at 14s. to 15s. per qr., and 40lbs. Danish at 15s. to 16s. per qr. Scotch feed were then not worth more than 18s. to 20s. per qr., and Lincolnshire from 15s. to 18s. per qr. according to weight. Notwithstanding the want of animation by which the trade has during the last eight or ten days been characterized, the various qualities are at present about 1s. per qr. higher than the rates just named. The future range of prices will, in some measure, depend on the political state of Europe. If the war between the Germans and Danes should be protracted, and supplies from the Baltic be cut off, oats would perhaps be influenced thereby more than wheat, as there is little prospect of receipts to any extent from Ireland—the quarter from whence, in ordinary years, a great part of the supply for the consumption of London is drawn.

Beans of home growth have come forward sparingly, and the arrivals from abroad have been less extensive than expected. This article has not excited much attention, and its value has remained very nearly stationary. Taking Egyptian beans as the standard, we find quotations precisely the same as they were a month ago, say from 21s. to 23s. per qr.—the latter for very fine parcels in granary.

The supplies of peas have been quite moderate; and though there is still a considerable quantity of foreign in warehouse, prices have gradually crept up. Good English boilers, which at one period were worth no more than 25s. to 26s. per qr., cannot now be bought below 30s. per qr.; and other sorts of white peas have risen in like proportion.

Grey and maple, which were relatively high before, have not risen to the same extent, quotations ranging from 28s. to 32s. per qr.

There has not been much doing in Indian corn on the spot; but floating cargoes, with a clause in the charter-party for the vessels to call at Falmouth or Cork for orders as to the port of discharge, have been a good deal inquired for; and the paucity of transactions has been owing more to the high pretensions of sellers than to a want of demand. The rates asked have been about 2s. 6d. per qr. above those at which contracts might have been closed last month, in consequence of which comparatively few bargains have been entered into.

In concluding our remarks with our usual notice of the principal foreign markets, we shall, in the first place, direct attention to the somewhat sudden change which the position of the trade has undergone in the United States. For months past the advices from hence had little or no effect on the other side of the Atlantic, and whilst prices of bread stuffs were daily falling in the markets of Great Britain, flour and wheat steadily supported their previous value in the United States. It became, therefore, a matter of doubt whether any shipments would be made from thence to this country, more particularly as those which had been ventured on had been very unfavourable in their results to the parties concerned. The last accounts from America tend, however, to put a different face upon the matter. Stocks at the ports on the sea-board were, we are informed, rather heavy, and large supplies were looked for from the interior. This, with the absence of any export demand of consequence, was beginning to tell, and holders had shown more disposition to sell. At New York prices of flour had receded about 50 cents per barrel, and would, it was thought, be further reduced if more encouraging accounts from hence were not soon received. Meanwhile a great fall had occurred in the exchanges, which must have the effect of drawing gold from hence; it is therefore not improbable that we may, after all, obtain larger supplies from the other side of the Atlantic than appeared at one time likely.

Our letters from the Baltic are so exclusively taken up with politics, as to afford very little information of interest in a commercial point of view. It would, however, appear to be the prevailing opinion, that though the Danes had given notice of their intention to enforce a strict blockade, their naval power would hardly suffice to carry it out efficiently.

Letters from Danzig, Stettin, and Rostock, all agree in stating that no Danish men-of-war were in sight, and that there was consequently no actual hindrance to vessels running in or out. We

are, however, inclined to think that few captains would be disposed to run the risk; and the probability is that, for a time, all shipments from the Baltic ports will cease. Should this prove to be the case, prices can scarcely be expected to be maintained there, as parties are not likely to buy whilst matters remain in so uncertain a state. At Danzig stocks were small, and the supplies from the interior having but slightly increased, holders of wheat had remained tolerably firm. Notwithstanding the total want of export demand, the finest quality of high-mixed had not been offered below 41s. to 42s., and good red mixed had been held at 38s. to 40s. per qr. free on board.

From Stettin we learn that the deliveries from the growers had not increased much, farmers being dissatisfied with the prices current. Meanwhile, little inclination had been manifested to purchase, and the operations had been very unimportant; the finest 61lbs. to 62lbs. qualities were then held at equal to 36s. to 37s. per qr. free on board.

The accounts from Rostock are of a similar character, and the value of wheat had not been much reduced by the cessation of foreign demand, good 61 lbs. parcels having been held steadily at 35s. to 36s. per qr. free on board.

At the nearer ports considerable effect has been produced by the late rise in prices in our markets; and at Hamburg, from whence vessels under neutral flags were to be allowed to sail till the 30th inst., a large amount of business was done during the fortnight previous, the utmost anxiety having prevailed to complete the cargoes of the ships loading, which had enabled sellers to obtain enhanced terms. Upland wheat, which had at one time been freely offered at 38s. to 38s. 6d., advanced on the 17th to 40s., and subsequently 41s. to 42s. per qr. free on board was realized for similar quality.

In the Dutch, Belgian, and French markets the value of wheat has likewise risen about 2s. per qr. within the last week or two; owing partly to the advance here, and partly to the impression that Great Britain will require supplies, and that there will be no competition between the Baltic shippers and those nearer home.

The accounts from the Mediterranean are not of much interest; there, as in the north of Europe, business has been much interfered with by war and bloodshed; still some quantity of wheat and Indian corn appears to have been purchased at Leghorn, Ancona, &c., for British account, and we may therefore calculate on receiving some further supplies from ports lying east of Gibraltar.

For Polish Odessa, and similar qualities of wheat, equal to 37s. to 38s., and for Indian corn from 22s. up to 25s. per qr. free on board, had been paid;

which rates, with freight and insurance added, will bring the cost here at more than the present value in our markets.

CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white	46 to 53	41 to 53
Ditto, fine selected runs	—	46 54
Ditto, red	42 46	41 46
Ditto, extra	46 50	45 48
Ditto, Talavera	—	—
Norfolk, Lincolnshire and Yorkshire	—	42 47
Ditto, white	—	45 50
BARLEY, English, malting and distilling	—	29 30
Ditto, Chevalier	—	30 33
Ditto, grinding	—	23 26
MALT, Essex, Norfolk and Suffolk	—	58 59
Kingston, Ware, and town made	—	58 62
OATS, Essex and Suffolk	—	16 19
Lincolnshire and Yorkshire (Polands)	—	16 20
Ditto, feed	—	15 18
Devon & West Country, feed or sack	—	14 16
Northumberland and Scotch, feed	—	18 21
Dumfalk, Newry, and Belfast, potato	—	18 22
Limerick, Sligo, and Westport, potato	—	17 21
Ditto, feed	—	16 19
Cork, Waterford, Dublin, Youghal, and Clonmel, black	—	14 19
Ditto, white	—	16 19
Galway	—	12 15
RYE	—	22 25
FLOUR, best marks (per sack of 280 lbs.)	—	39 44
Norfolk and Suffolk, ex-ship	—	32 35
BEANS, Mazagan	—	28 30
Tick	—	27 30
Harrow	—	30 35
Pigeon, Heligland	—	33 36
Windsor	—	29 39
Long pod	—	27 29
PEAS, non-boilers	—	24 25
White, Essex, and Kent, boilers	—	25 27
Ditto, fine Suffolk	—	28 30
Maple	—	32 33
Hog and grey	—	28 30
CAKES, Linseed, English, per 1,000	£10 15s. to	£11 5s.

FOREIGN GRAIN.

	Shillings per Quarter.
WHEAT, American	46 to 52
Canada	42 48
Dantzic and Konigsberg	48 52
Dantzic, fine white, extra quality	52 55
Stettin and Hamburg	45 47
Danish	42 45
Rostock, Pomeranian and Rhine	46 50
French and Belgium	44 48
Mediterranean, Odessa, and St. Petersburg	40 44
Black Sea (nominal) hard to soft	38 44
Spanish	47 52
Buck or Brank	23 25
BARLEY, malting	28 30
Grinding and distilling	20 25
Hamburg, Dantzic, Konigsburgh, and Riga	22 28
Danish, Mecklenberg, and Pomeranian	20 26
BEANS	—
Small	30 33
Egyptian	21 23
OATS, Dutch, brew, Poland, Friesland, and Groningen	17 21
Danish and Swedish	15 19
Russian	16 19
MAIZE, white	29 33
Ditto, yellow	30 33
FLOUR, American, sweet	25 26
Ditto, sour	23 26
Canadian, sweet	23 24
Ditto, sour	22 23
Dantzic and Silesia, extra superfine	24 26
RYE MEAL (per ton)	£6 0s. to £6 10s.
INDIAN CORN MEAL (per brl. of 196 lbs.)	16s. 6d. to 17s.

PRICES OF SEEDS.

BRITISH SEEDS.

Cloverseed, red 35s. to 40s.; fine, 45s. to 63s.; white, 31s. to 43s.
Cow Grass (nominal)..... —s. to —s.
Linsced (per qr.).. sowing 56s. to 60s.; crushing 42s. to 48s.
Linseed Cakes (per 1,000 of 3lbs. each) £8 10s. to £10 0s.
Tarfoil (per cwt.)..... 14s. to 21s.
Rapessed, new (per last)..... £27 to £30
Ditto Cake (per ton)..... £1 15s. to £5
Mustard (per bushel) white .. 8s. to 10s.; brown, (nominal)
Coriander (per cwt.)..... 18s. to 25s.
Canary (per qr.)..... 95s. to 105s.; fine, 103s. to 110s.
Tencup, white (per bush.) —s. to —s.; do. Swedish, —s. to —s.
Tares, Winter, per bush..... 0s. 0d. to 0s. 0d.
Caraway (per cwt.)..... 23s. to 29s.; new, 30s. to 31s.
Rye Grass (per qr.)..... 17s. to 46s.

FOREIGN SEEDS, &c.

Clover, red (duty 5s. per cwt.) per cwt..... 30s. to 40s.
Ditto, white (duty 5s. per cwt.) per cwt..... 21s. to 42s.
Linsced (per qr.) .. Baltic 42s. to 46s.; Odessa, 42s. to 46s.
Linsced Cake (per ton)..... £6 0s. to £8 0s.
Rapessed..... £4 15s. to £5
Rape Cake (per ton)..... £4 15s. 5d.
Coriander (per cwt)..... 16s. to 20s.
Hempseed, small, (per qr.) 32s. to 35s. Do. Dutch, 35s. to 36s.
Tares, (per qr.)..... small 28s. to 32s., large 31s. to 40s.

IMPERIAL AVERAGES.

FOR THE LAST SIX WEEKS.

WEEK ENDING:	Wheat		Barley		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Mar. 17, 1849..	45	4	29	2	17	0	23	9	30	11	30	8
Mar. 24, 1849..	44	9	28	10	17	1	26	4	28	9	31	6
Mar. 31, 1849..	44	1	28	11	16	4	24	6	28	11	32	2
Apr. 7, 1849..	44	5	28	9	16	9	26	5	28	11	29	6
Apr. 14, 1849..	44	3	28	6	17	0	23	1	28	5	30	11
Apr. 21, 1849..	44	5	28	8	16	8	22	4	28	11	28	9
Aggregate average of last six weeks	44	6	28	9	16	10	24	5	28	10	30	7
DUTIES.....	1	0	1	0	1	0	1	0	1	0	1	0

HOOP MARKET.

BOROUGH, MONDAY, April 23.

We have a fair inquiry for Hoops of colour at fully the rates of this day week. The following are the current quotations:—

Sussex Pockets.....	46s.	to	63s.
Weald of Kents.....	52s.	—	70s.
Mid and East Kents....	63s.	—	140s.

HORTON AND HART.

POTATO MARKET.

SOUTHWARK WATERSIDE, April 23.

We have had many fresh arrivals since our last report, from Yorkshire, Scotland, and the continent; all of which have met a ready sale, which can only be attributed to the very cold weather, as the supply was large for the time of year. To-day the weather is much milder, and will affect the demand considerably.

The following are this day's quotations:—

York Regents.....	130s.	to	130s.
Scotch do.....	120s.	to	140s.
Ditto cups.....	110s.	to	130s.
Ditto whites.....	100s.	to	110s.
French do.....	100s.	to	120s.
Belgian do.....	100s.	to	110s.
Dutch do.....	100s.	to	120s.

WOOL MARKETS.

BRITISH WOOL.

Our business may now be reported as having got into its old channels, the tempests and tornadoes that for some time diverted its course having subsided for some

months, so that the old stream now flows undisturbed, and distributes its fertilizing influences with every wave. May its waters never again become stagnant or disturbed, but may they run pure and pellucid, and reflect the happiness of every face that may bend over them to contemplate their progress.

It is gratifying to remark that our views as to the commercial greatness of this kingdom, as stated last year, were sound; that whilst others were predicting the utter ruin of trade, we never joined in the absurd cry that was raised, but were always confident that the resources of this empire would restore the equilibrium that commerce had temporarily lost.

To enter into particulars, it may be stated that the manufacturers are fully employed, and there is every reason to expect a continuation of the active demand which has existed for some months past, as now it is considered as established that advances must be given, it will not be considered prudent to be without stocks of articles likely to be in demand at their respective seasons; indeed, as a proof of this, it may be stated that in many instances orders are out up to May and June.

The war in Italy was calculated to exercise a depressing influence on trade, but the speedy termination of it has given general satisfaction. In India, also, the temporary reverse sustained had given a check to mercantile operations, but the success at last gained has restored confidence, and, from the circumstance of the stocks of goods in many of the markets being very light, it is expected that a good trade will be done with our dependencies in the East.

The trade with America has been exceedingly good, and a splendid spring demand is in completion.

To conclude, we congratulate those farmers who hearkened to our remarks in times of depression, and have since realized a considerable advance on their wool; and we would now advise those whose capital allows them to hold their wool, not to be in any great hurry to sell it, but quietly to wait until the necessities of the manufacturers bring them again into the market, and then they will realize a remunerating price to all parties (which the present price, say a shilling a pound, may be fairly said to be). At the same time we would advise them, even then, not to be exorbitant in their demands; as at no time is it their interest unnaturally to raise the price of their commodity.

The Liverpool sales of Colonial Wool on 4th April, went off at the very extreme rates of the London February sales, which were more than thirty per cent. over the prices of the latter part of last year. Some Canadian Wool realized very high rates indeed.

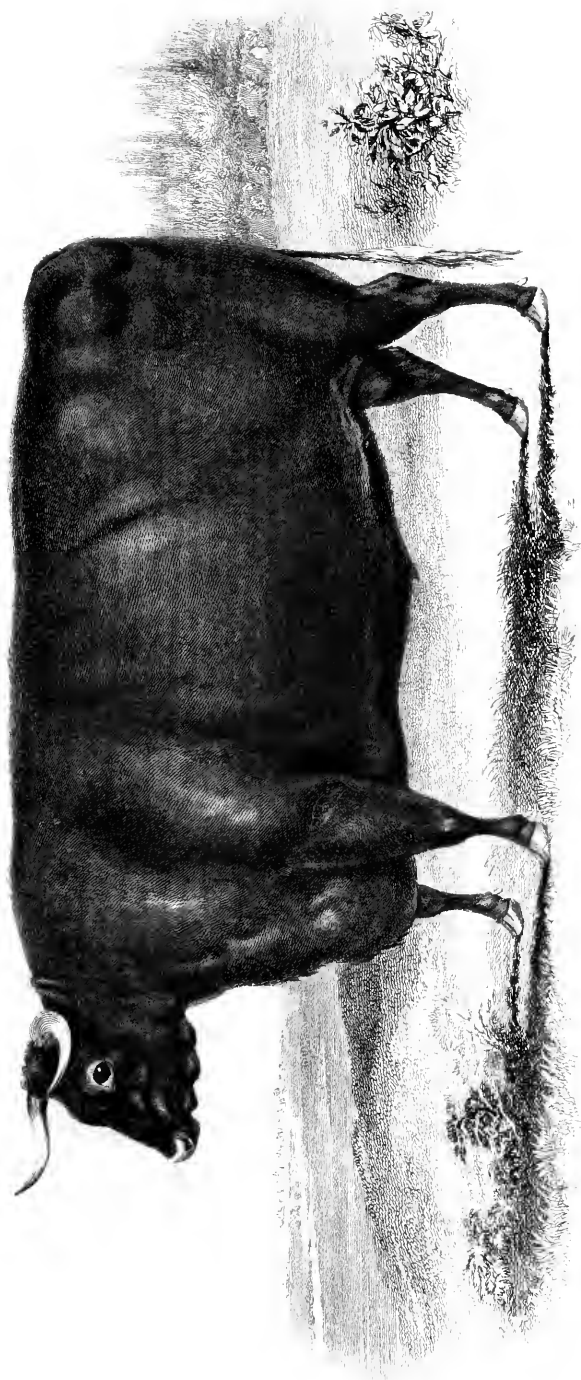
LIVERPOOL, April 21.

SCOTCH.—There is little demand for Laid Highland Wool this week, but stocks are very light, and no arrivals of importance. White is also in less demand. In Crossed and Cheviot there has also been less doing.

FLAX.

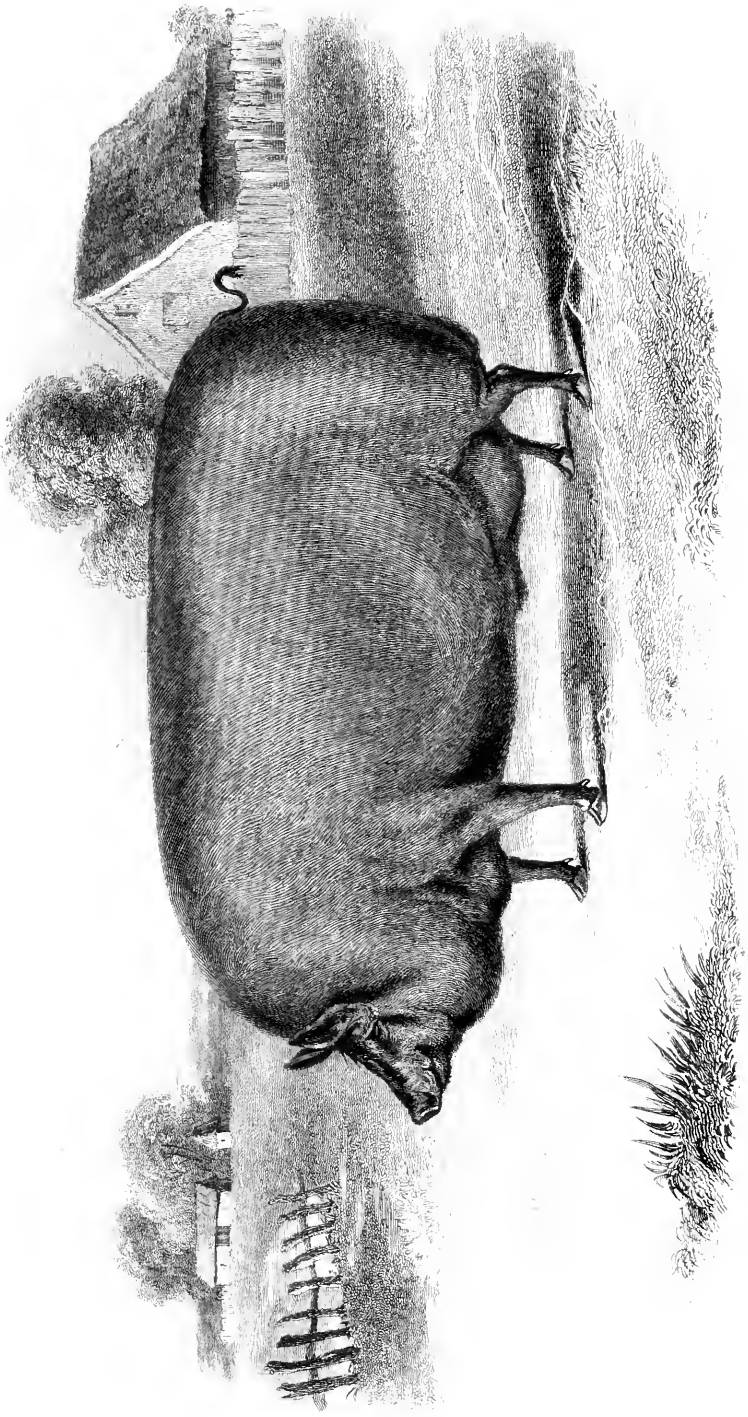
At the Forest of Dean sale, which took place on Wednesday, the 11th ult., nearly the whole of the coppice bark offered for sale was purchased at £1 10s. and £4 12s. 6d. per ton, in place, being from 30s. to 32s. higher than it was bought at last year: this certainly is from 10s. to 15s. per ton more than we expected, and we think the purchasers will find they have not left themselves much margin for profit; we need hardly impress upon tanners that there is nothing in present appearances to justify higher prices for anything. Valonia is without alteration in value: the "Lancashire Lass" has just arrived with a cargo of the new crop, which appears of good quality: the stock held here is not large, but we hear that very considerable imports may be expected.





Engraved by
W. H. Storer
from a drawing by
J. G. Wood





THE FARMER'S MAGAZINE.

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No. 6.—VOL. XIX.]

[SECOND SERIES.

PLATE I.

A NORTH DEVON STEER.

The animal which forms the subject of this plate, a North Devon Steer, bred by and the property of the Earl of Leicester, obtained the first prize of Fifteen Sovereigns in the fifth class and the gold and silver medals at the Smithfield Club Cattle Show, in December, 1848.

PLATE II.

A BOAR.

The Boar represented in this plate, the property of R. Smith, Esq., of Givendale, Ripon, Yorkshire, is of Mr. Fisher Hobbs's improved Essex breed, and obtained the first prize of Fifteen Sovereigns at the Royal Agricultural Society's Show at York, in July, 1848. The second prize in the same class, was awarded to Mr. Fisher Hobbs for a boar exhibited by him.

HAY.—HAYMAKING.

BY J. TOWERS, MEMBER R.A.S., H.S. OF LONDON.

Hay, in the proper restricted sense of the word, is the product of a meadow containing the numerous natural grasses described in the preceding paper on pasture, dried by the sun and air, under a certain process modified according to the prevailing local notions. But since the introduction of clovers and other plants which constitute the artificial meadow, greater latitude must be allowed to the agriculturist, in theory, as well as practice. In those counties where genuine meadow hay still prevails, the process of "making" differs materially. In Berkshire, toward the borders of Buckinghamshire, little more is done than to let the grass, as it is cut by the mowers, lie in swath for many hours; it is then simply turned by the fork, so as to reverse the surface; when half dried the grass is shook out

into broad wind-rows, then made into cocks for the second night. On the third day it is again shaken out, and if the weather has been bright and airy, the hay is carried before sun-down to the rick. In Ireland the process there adopted was ably described some years ago, in the then *Irish Farmer's Magazine*, and a certain point of practice insisted on, which was the very reverse of the one that constitutes the leading principle of Middlesex hay-farming. When the grass was cut by the mowers, it was to be left untouched for a day or more, in order that it might "drink the sap." This practice was founded upon the notion that, by repose, the watery juices becoming *inspissated*, must leave the hay richer in quality than it otherwise would be by early exposure to the drying influences of air and

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sun. Leaving the theory to the consideration of practised haymakers, I will come at once to the method adopted by the farmers of Middlesex, which has produced excellent hay for the London markets, to the satisfaction of every one.

I learned the art from a person who had been manager to an extensive grass farmer in the neighbourhood of Edmonton; and having gone through the whole of it in company with him, I can attest that during several years I never had a crop of hay injured by weather or neglect.

First day.—Make it a rule to cut (if absolute security of “carrying” be the main object) always with the first change of wind in *June*, to the *north-east*. If *bulk* of crop be the object, and the above prime indication be made to yield to quantity, the farmer must abide by his risk, and that, in a “casertly” summer, is by no means trifling. Cut early in the morning till 9 o'clock, and then all the grass so cut is to be shaken out, or tedded, most carefully, so as to detach and loosen every lump, not leaving a single knot remaining, and strew it evenly over the ground. By this rigid tedding the hay will heat more regularly in the stack, and consequently be less liable to fire; it will be more in quantity when cut into trusses, and bring a greater price; it must be self-evident (however the juices may evaporate) that regularity of texture will result from the earliest tedding; whereas, when suffered to lie in swath, the under-surface of the grass will remain wet, the upper one will be withered, and the interior part rendered tough and flaccid without being dried, so that the forks cannot separate the knots, or bring the herbage into an equal and regular condition. After dinner (or before noon, if there be force of hands) the hay-makers turn it again with the same care; and then, in the afternoon, they rake it into single wind-rows, three or four feet apart. Finally it is put up for the night in small grass-cocks.

Second day.—All the grass mown *after* 9 o'clock of the first day, and also what was mown *before* 9 o'clock of this day, is tedded as the first; then the grass-cocks are well shaken out into separate plots five or six yards wide—called “staddles.” If the crop be so light as to leave open large spaces between these, such spaces are to be raked clean, and the rakings scattered evenly over the staddles, to secure the equal drying of the hay. The next operation is to turn the staddles, and after that to turn the grass that was tedded in the early morning, once or twice, as directed above for the first day; and this should be performed before noon, so that the whole may dry while the makers are at dinner. After dinner the staddles are raked into double wind-rows, that is by two persons raking in opposite directions towards each other, thus forming one

row double the size of the single wind-row: each of these should be from six to eight feet apart. The grass of this day, as was that of the first day, is raked into single wind-rows; then the double rows are put into middle size, *i.e.*, bastard-cocks; and as a closing operation of the day, the single wind-rows are put into grass-cocks.

Third day.—The grass mown and not spread abroad, and that mown before 9 o'clock of this day, is tedded exactly as above directed; then the grass-cocks are to spread as staddles, and the bastard cocks into lesser staddles. These, though last spread, are first turned, then those which were in grass-cocks; the fresh or newest grass spread abroad after tedding is turned once before noon, or by 1 o'clock when the people go to dinner. If the weather have been stirring and sunny, the hay that was put in bastard cocks will be in a fitting condition to be carried in the afternoon. Three days generally are sufficient in fine weather; but, on the contrary, if it be moist and cloudy no portion of the hay can be moved: and in that case the first business after dinner is to rake that which was in grass-cocks on the second evening into double wind-rows, then the grass which was in spread after tedding, and in swaths, into single wind-rows. Subsequently the hay of last night, now in bastard-cocks, is made up into full cocks, taking care to rake up clean, and to place the rakings upon the top of each cock. The double wind-rows are then put into bastard cocks, and the single wind-rows into grass-cocks as before.

Fourth day.—The large cocks above mentioned are usually carried before one o'clock. The other operations of this day are conducted as those already described.

This division of time presumes that hay-making is carried on in a large way, and that the number of hay-makers is in proportion to that of the mowers, so that there may be no more grass in hand at any one time than can be managed in a regular connected process; twenty makers (say eight men and twelve women) are apportioned to four able mowers; but in very hot and drying weather a greater number of the former will be required than when the weather is cloudy and cool. Here, however, the reader may have discovered, what is practically the fact, namely that the *hottest sun* is not always found the most drying, and that hay will not always “make” so kindly under such influences, as where a clear atmosphere is accompanied by a lively drying current.

If the weather be rainy or showery, in lieu of the speedy tedding so much insisted on, the grass is permitted to lie three, four, or five days in the mowers' swaths, though with care to turn those over by the heads of the rakes before the under-

surface become yellow. In this state it will make so much in about two days, as only to require to be teded a few hours, if the weather be fine and lively previous to its being raked together in staddles, and carried. The Irish and Berkshire practice, at first alluded to, appears to have been derived from noticing these results.

In small meadows, where one mower can cut the grass in a single day, it is evident that four or five active makers can finish the processes in the order above described. In still larger farms the hay-making machine is used with great advantage after the first teding. If, after the hay has been brought into an advanced state, much wet shall have fallen

upon it in succession, a good deal of water will have been absorbed: this is a serious evil as respects quality and colour. Experience seems to prove that, in carrying to rick, each layer should be liberally salted; the colour will thereby be made darker, but cattle like the flavour.

While the stack is building, men are employed in pulling the loose hay with their hands, and this is done also after the carrying is completed; thus the sides are rendered even and compact. The pullings are placed at the top, and a rick cloth, properly suspended, is placed over the whole, till, in about a week, the stack can be securely thatched.

THE ACTION OF LIME AS A MANURE,

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

The late researches by Professor J. F. Johnston, upon the chemical action of lime when employed as a manure, serve to place its operation upon some of the substances, of which all cultivated soils are composed, in a clearer point of view. This is a very desirable result; for the use of lime is not nearly so well understood as might be reasonably anticipated of so long and so well known a fertilizer. More than one of these doubts and difficulties were pretty well described by Mr. Pusey, some time since, when he remarked (*Jour. R. A. S. Vol. 3, p. 212*)—

“Quicklime is so largely used on the west side of England, that it bears there the name of manure, to the exclusion sometimes, I am afraid, of dung; while on the other side of the country it is almost unknown. Whether lime could be adopted elsewhere, is a very interesting question, and what is its mode of operation. Some persons think that it should be applied hot to the soil, founding their view upon chemical principles, but at present it seems better to follow practice; and where it has been mixed heretofore with five times its bulk of carth, and left so in heaps for some weeks before it is applied to the surface, it would be well to do so still. Indeed I am told farmers near Totnes, in Devonshire, have given a fair trial to fresh lime, and have found it act not at all better than when it is slaked.

“On the other hand, at Woburn, I have just met with a case in favour of recent lime. The soil was a light sand with a tendency to blackness at top: half a turnip-field had been dressed with fresh, and half with slacked lime, and there was a marked difference in favour of the fresh lime. As far as our knowledge goes, which is not far, lime appears to me to act wherever there is a natural tendency in

the soil to cover itself with heath on waste places, and also wherever the soil is of a deep red, which colour indicates a peculiar salt of iron.”

Dr. Liebig has more recently discovered that lime has the power of decomposing clay, and producing potash and soda, which are manuring principles: now, if this be the mode in which lime acts, there could not be a better course than to mix lime with earth before it is thrown upon grass-land, and the old practice would agree with the true theory, as is often the case. Of all things, we must guard against premature inferences from abstract science; but be the cause what it may, the effect of lime in sweetening sour pastures is wonderful throughout the districts where it is used, and it is well worth inquiry whether it could be applied in those districts where it is at present unknown.

The prevailing uncertainty too, as to its mode of action, extends as a pretty natural consequence to the proportion in which it should be applied to the soil. I find a practical farmer (*ibid.*, p. 429) Mr. Joseph Sybray of Snitterton Hall, thus differing in opinion with his neighbours on this important point; “When” (he remarks) “a tenant enters on a farm, if he uses lime, I would advise him to fetch his lime from different kilns, and lay it down in cart-loads on his fallows; when fallen, spread it over the land, then sow the wheat, taking notice of the respective spots on which the different limes were placed, and adopting afterwards that lime which acts most beneficially on the wheat. The quantity used by me is from 60 to 80 horse-loads per acre, a horse-load weighing $2\frac{1}{2}$ cwt. Some of my neighbours suppose that I put too much lime on my land; but six years back, I put on 4 acres of summer fallow 80 loads per acre, an acre being left without; I

then burned a kilnful of lime to finish the 5 acres, which kiln holds 100 loads; I then directed my servant to lay the same quantity on the remaining acre as the others. I believe he did not understand me, but laid on that acre the 100 loads. I directed him to remove each alternate heap; but the day following being Sunday, it rained before it could be removed. The lime was set out in small heaps the same as manure. I was then obliged to plough it down the same as the rest; I then sowed the wheat which came up very healthy, and I saw no difference on the one acre, only a darker colour; but in July I could perceive it was stronger; when reaped I kept the wheat produced from the acre by itself, which was 39 bushels; the remaining four acres produced about 36 bushels per acre; leaving 3 bushels more for the strong liming per acre. The whole of the close was seeded down with the usual quantity of seeds; the seeds on the one acre strongly limed were much better than the remaining four acres. This close has been pastured ever since, and to this day the difference may be seen between the one and the four acres. This was done on strong, clayey land.

“If only 30 or 40 horse-loads of lime are laid on an acre and harrowed in, I consider it not sufficient to mix with all the soil, and it consequently leaves a harbour for insects; but lay 60 horse-loads of lime per acre, harrow and mix it with the soil, leaving none without; and when a shower of rain comes, examine the furrows, you will there find all sorts of insects dead, such as worms, slugs, beetles, &c.; if only 30 or 40 loads of lime have been laid on, you will find very few dead, indicating the advantage of strong liming.”

As I remarked in another place (Bell's Messenger) not long since, when alluding to examinations of Professor Johnston, some of the phenomena which present themselves when this earth is mixed with organic matter long since attracted the attention of even the alchemists. These early visionaries, according to their wonted custom, made numerous experiments, and on these built explanations just as unmeaning as their rude researches. These early chemists committed, in fact, on almost all occasions, the error which is too often adopted even in our age: they substituted mere verbiage as an explanation of unknown facts. A quarter of a century since, we find Dr. Thomson (System of Chemistry, Vol. 2, p. 425), when speaking of some of the operations in which lime is concerned, and by one of which saltpetre is produced, nearly as equally puzzled as the alchemists, or the farmers of his day, who noticed the production of crystals of this salt on the walls of stables, or on the surface of certain earth heaps. The preparers of saltpetre in Spain and France, however, long since discovered, in the

preparation of their nitre beds, that lime formed one essential ingredient for its production. These beds, indeed, consist of hardly anything else but the refuse matters, vegetable and animal, undergoing putrefaction, mixed with calcareous matter, in a warm, dry atmosphere. The French government, in the war of the French revolution, caused some of the first chemists of the republic to investigate the subject; but these were compelled to content themselves with tracing the conditions requisite for the production of phenomena they were unable to explain. They found that nothing else is necessary for the production of saltpetre but a basis of lime, heat, and an open but not too free communication with dry atmospheric air. Then, again, the use of lime as a manure, in preference to the carbonate of lime from which it is procured, were facts which have given rise to either very erroneous or very imperfect chemical explanations. The whole subject, therefore, abounding as it does with practical doubts and uncertainties is full of interest to the farmers, and every way worthy of the attention of Professor Johnston. I do not profess in this paper to give more than a small portion of the observations which he has made on the action of lime upon the organic substances in which nitrogen exists, and in which, as he observes (Quar. Jour. Agric., 1849, p. 581), there are several well-known facts of importance to consider. “1. The black vegetable matter of the soil always contains nitrogen. Even that which is most inert retains a considerable portion of it. It exists in dry peat to the amount of two per cent. of its weight. Since nitrogen, therefore, is so important an element in all vegetable food, and so necessary in some form or other to the healthy growth and maturity of plants, it must be of consequence to awaken this element of decaying vegetable matter, when it is lying dormant, and to cause it to assume a form in which it can enter into, and become useful to, our cultivated plants. 2. If vegetable matter of any kind be heated with slaked lime, the whole of the nitrogen it may contain, in whatever state of combination it may previously exist, will be given off in the form of ammonia. The same takes place still more easily if a quantity of caustic potash or caustic soda be mixed with the caustic lime. Though it has not yet been proved by direct experiment, yet I consider it to be exceedingly probable that what takes place quickly in our laboratories, at a comparatively high temperature, may take place more slowly also in the soil, and at the ordinary temperature of the atmosphere. 3. When animal and vegetable substances are mixed with earth, lime, and other alkaline matters in the so-called nitre bed, ammonia and nitric acid are both produced, the quantity of

nitrogen contained in the weight of these compounds extracted being much greater than was originally present in the animal and vegetable matter employed under the influence of alkaline substances; therefore, even when not in a caustic state, the decay of animal and vegetable matter, in the presence of air and moisture, causes some of the nitrogen of the atmosphere to become fixed in the soil, in the form of ammonia or of nitric acid. What takes place on the confined area of a nitre bed happens without doubt in our lime composts, and may take place to some extent also in the wider area of a well-limed and well-manured field." The general comparative utility of burnt and unburnt lime as manure are thus contrasted by the professor:—

"1. By burning and slaking, the lime is reduced to the state of an impalpable powder, finer than could be obtained by any available method of crushing. It can, in consequence, be diffused more uniformly through the soil; and hence a smaller quantity will produce an equal effect. This minute state of division also promotes, in a wonderful degree, the chemical action of the lime. In all cases chemical action takes place between exceedingly minute particles of matter; and amongst solid substances the action is more rapid, the finer the powder to which they can be reduced. Thus a mass of iron or lead slowly rusts or tarnishes in the air; but if the mass of either metal be reduced to the state of an impalpable powder—which can be done by certain chemical means—it will take fire when simply exposed to the air at the ordinary temperature, and will burn till it is entirely converted into oxide of iron or oxide of lead. By mere mechanical division the apparent action of the oxygen of the air upon metals is augmented and hastened in this extraordinary degree, and a similar heightening of the chemical influence of lime takes place when it is brought in an impalpable state into contact with the vegetable matter upon which it is intended to act.

"2. The effect of burnt lime is more powerful and more immediate than that of unburnt lime, in the form of chalk, marl, or shell sand. Hence it sooner neutralises the acids which exist in the soil, and sooner causes the decomposition of vegetable matter of every kind to commence, upon which its efficacy in a great degree depends; hence, when it can be easily procured, it is better for some grass or arable lands, for such as contain an excess of vegetable matter, and especially for such as abound in that dead or inert form of organic matter which requires a stronger stimulus, the presence of more powerful chemical affinities, that is, to bring it into active decomposition. In such cases the lime has already done much good before it has been brought

into the mild state by exposure in the soil, and remaining afterwards in this state in the soil, it still serves, in a great measure, the same slower after purposes as the original addition of carbonate would have done. Further, quicklime is soluble in water, and hence every shower that falls and sinks into the soil carries with it a portion of lime, so long as any remains in the caustic state. It thus reaches acid matters that lie beneath the surface, and alters and ameliorates even the subsoil itself." Of the last cause of preference alluded to by Professor Johnston, we have more than once reminded our readers; he says, "It is not a small additional recommendation of quicklime, that limestone, by burning, loses about 44 per cent. of its weight—chiefly carbonic acid—thus enabling nearly twice the quantity of lime to be conveyed from place to place, at the same cost of transport. This not only causes a direct saving of money—as when the burned chalk of Antrin is carried by sea to the Ayrshire coasts; but an additional saving of labour also upon the farm, where the number of hands and horses is often barely sufficient for the necessary work." These properties of lime may be regarded as common to that earth, from almost whatever locality it may be obtained. There are other variations in its action, owing to the foreign matters with which the calcareous earth is mixed, which also impart to it considerable virtues as a fertiliser. In the volume of the Transactions of the Highland Society for 1848, pp. 285-293, of which the following digest occurs in Johnson and Shaw's Farmer's Almanack for 1849, p. 19, the chemical composition of various limestones are given:

In the following table column 1 gives the ingredients found in (2) limestone from Cocker mouth; 3, from Brampton; 4 and 5., from an estate of Mr. Biddulph, in Denbighshire:—

	1	2	3	4	5
Carbonate of lime	94.86	94.71	83.58	69.07	
Sulphate of lime	0.23	0.32	0.37	0.41	
Carbonate of magnesia . .	1.26	2.32	0.66	1.47	
Alumina and oxide of iron	0.73	1.03	2.67	5.24	
Phosphate of lime	?	0.33	0.14	0.12	
Silica	2.92	1.29	12.73	23.69	

The chemical changes which a ton of limestone undergoes by burning and slaking is thus traced (*ibid*, 304). In the next little table, column 1 gives the composition of limestone in cwts.; 2, after burning; 3, after slaking; 4, after spontaneous slaking; 5, after being for some time exposed to the air or in the soil.

	1	2	3	4	5
Lime	11 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{1}{4}$
Carbonic acid	8 $\frac{3}{4}$	—	—	2 $\frac{1}{4}$	8 $\frac{3}{4}$
Water	—	—	3 $\frac{1}{2}$	1 $\frac{3}{4}$	—
Total	20	11 $\frac{1}{4}$	14 $\frac{3}{4}$	15 $\frac{3}{4}$	20

The quantity of quicklime applied per acre in different districts is (*ibid.*, 426)—

	Bush.	Yrs.	Per Yr.	When
Roxburgh	200	every 19	or 10½	fallow.
Ayr (Kyle). . . .	40	„ 5	„ 8	—
Carse of Stirling	54	„ 6	„ 9	—
South Durham	90	„ 12	„ 8½	—
Worcester	70	„ 6 or 8	„ 10	{ 6 grass or tares.
Flanders	{ 50 12	„ 12 } „ 3 }	„ 4	

I deem no apology necessary to the farmers of my

country, whose indulgence I have so invariably experienced, for thus endeavouring to illustrate the labours of the agriculturist by the scientific results obtained by the chemist. Those great agriculturists will remember how much has been in this way already accomplished, and to them such recollections will only serve (even in times as adverse as the present) to encourage them in their noble endeavours for other and equally honourable advances in the practical and scientific cultivation of the soil.

ON THE IMPROVEMENTS OF RUNNING SANDS.

The light sandy soils were, at one period, considered incapable of returning any profit to the cultivator. The benty grass which nature placed upon them as a covering, and their subjugation to the winter frosts and the summer suns, seemed, to our predecessors, to indicate that they must not expect any great return for their care and outlay; and experience too dearly taught them, that if broken up, a scanty crop of rye or oats might be expected for a season or two, and that couch grass and sterility would soon usurp the place of a meagre crop at best; while on the lower sands, owing to intermixture of clay strata, the land-springs rose with overwhelming power, and the semi-aquatic grasses, the moss and the heather, usurped the sole dominion. Sand was synonymous with barrenness and sterility, and only the best portions of it were cultivated in the following dismal order:—

- Summer fallow, manured with rotten straw,
- Rye,
- Oats,

and again the summer fallow prevailed; or, in the secondary sort of quality of sands a still more wretched system prevailed, and the order of mismanagement was:—

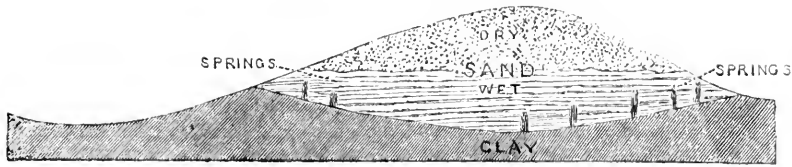
- Natural grass broken up and sown with
- Oats,
- Oats,
- Oats,

and then allowed to grow anything, or nothing, until it had freshened by lying absolutely dormant for six, ten, or fifteen years; again to be subjected to the same unhappy process.

The introduction of the alternate system of husbandry from Flanders, made an entire revolution in the mode of cropping poor sands; and by the introduction of turnips and clover to alternate with

them, the whole character of the soil was changed, and what was once a sterile waste was made a productive oasis.

As a necessary consequence, the best parts of the sands were first taken up. These, as a general rule, especially on the red sand-stone formations, are the best on the highest lands. These are not only naturally dry—being themselves a *drain*, but the soil is deepest on the higher portions, and somewhat more consolidated, and a little more tenacious; on the lower portions the sand is frequently grey or yellow, and saturated with and pervaded by land-springs, while many of the basins are either peaty, when vegetable matter is in excess; or clayey, where it is absent. These clay basins are not only common to the valleys, so to speak, of the red sand-stone formation; but the higher lying portions also often occupy basins of clay. The annexed sketch will give an idea, far from imperfect, of the precise state of the superposition of the sandy soils on the whole of the red sand-stone series. It will also best describe the situation of soils of this nature, and the water they contain. The dotted portion describes the sand, the part of the dotted portion with horizontal lines shows the water level, and the part shaded with perpendicular lines, the clay. Now it must be clear, that the least obstruction of the water at the point described by the word “springs” will cause it to rise with great force, because the pressure, not only of the atmosphere, but of the mass of gravel, described as dry, is resting upon it; and it is merely prevented from boiling out at the very surface, and running over it, by the power of the capillary attraction of the soil. The section we have given is in somewhat high relief, but it is what may be observed at almost any part of the red sand-stone—it is almost co-extensive with the series.



Now, to attempt to palliate a state of things like this is a delusion—shallow drains may be put in *ad infinitum*, and the evil will never be remedied, because the pressure from below will be so great that the water will be held almost around the drains by mere capillary attraction. The evils of a state of things like this are so great that it is difficult to estimate them—the manure applied is like being put upon a sieve to be washed away in the powerful stream—the soil will be cold from the excessive evaporation, and, consequently, the crops will be late; it will be tenacious and difficult to work, and hence its occupier will be always behind-hand. His stock also will partake of the nature of the plants, and he will have poverty, disease, and death.

A remarkable instance of the utter inutility of this shallow draining of land-springs on porous subsoils may be described:—We remember a field lying somewhat low, but having an outfall of some seven feet, and on the opposite side some high-lying land, in which (as it afterwards turned out) the water was lying, and compressed into the low-land, above alluded to. This low-land field was drained at some four or five feet deep, and some seven yards apart. It was, doubtless, benefited, but still not laid dry—intermediate drains were put down, but till the work was not completed, and the probability appeared to be that, if a complete substratum of tiles was laid, so that the field would be hollow, it would not effect its purpose. The boring rods were put down, and a most extraordinary appearance presented itself—the water gushed up in three places with a velocity, and in a quantity which would embrace several thousand gallons per hour. Wooden cases, with covered tops and side grooves, were put in, which discharged the water, the whole, if collected, was sufficient to drive a mill; and this continues up to the present time without any apparent diminution. The field, however, was effectually cured; and we have rarely witnessed any case more fully exemplifying the truth of the axiom, that in all draining operations we must be guided by varieties of circumstances, and modify our proceedings accordingly. Under any circumstances the spring must be tapped, be it where it may; and, though his Elkingtonian mode may neither be desirable nor practicable in a majority of cases, there are few in which deep-draining is not absolutely necessary. The depth in such subsoils may

be determined only by two circumstances—the solidity of the bottom and the capabilities of the outfall. The difficulties, however, of deep-draining in such situations are very great. The sides will fall in, the sand will fill up the cutting by washing, and the springs will boil up with such resistless impetuosity that artificial means will have to be adopted to overcome their violence. We think it unnecessary to say that such sands should always be drained with tiles and soles, or with pipe tiles; and, if the latter, they should have collars. In the former case, however, it will be necessary to get a foundation for the sole; and, to effect this, nothing is better than a filter composed of bunches or, technically, “whisps,” of hay or straw, pile upon pile, till the loose sand is satisfied, and the water filters through the hay; but the sand is deposited in it. To prevent the consequences of the sides falling in, two planks are placed on the drain sides, and plugs of wood so placed between them as to keep them at a regular distance; and, in placing the tiles, the greatest care should be taken to prevent the sand from either entering the interior, or from falling upon the tiles so forcibly as to displace or destroy them. Between the tiles and the soil, or just over them, some hay, straw, or, in the absence of any better covering, the couch which may happen to be nearest the locality, may be placed, and incur the least expense in cartage; but, possibly, the best covering is turf, with the grass side towards the tiles, the roots forming a filter which will admit the exit of the water, but prevent the residuum from getting down into the tiles.

When a spring bursts below the drain there is often great difficulty in getting a foundation for the tile, so as to get the drain over it. The foot of the drainer may, by being worked up and down, be worked down to a considerable depth; and so powerful is the spring that the superstratum of the sand is kept by it in a continual motion; nor can the operator often wait until the spring has subsided by exhaustion; and it is possible that it may not be exhausted at all. In such a case a sole will soon be displaced, or the pipe tiles even where collars are used, there is great danger of their ‘canting,’ so as to destroy the free level of the drains. The object to be effected is to allow the water to escape freely, and still to fill up the vacant place with

some porous foundation matter. For this purpose there are few things more useful than wisps of straw stuffed into the quicksand until a firm foundation is obtained. Through this the water will flow pretty freely, and it would appear that, as the straw decomposes, the sand is deposited; or, possibly, the flow becomes less violent when the remainder of the springs are reduced by the drainage of the adjoining land.

At great depths, springs will break out at the head of the drains, and often so very strong as to totally interrupt the progress of the drainers. A spring a-head is worse to manage, of the two, than a spring below, because there are no means of getting over it, and its contents must, as a primary object, be obtained into the drain. In this case, if the flow of water is so powerful as to resist the future efforts to proceed, the drain mouth must be stopped with some filtering matter, and another parallel, or, at least, an adjoining drain, brought up to the same locality, and continued until the same spring is again tapped; and, unless this is the case, there will be great difficulty in obtaining so large a quantity of water as frequently presents itself into any drain whatever. If this second tap is insufficient, either to dry the first drain or to admit of the second being carried so far as it is intended, a third drain is cut into the same, which, generally, so divides the power of the spring that each of the drains can be carried to their ultimate termination, and the effect that one drain so situated will produce on the soil below, will be very extraordinary.

But it is not always that the water will exhibit itself even when it is very near. We, on one occasion, observed a striking instance of this—a wet field, commencing with a bottom of water-filled clay, and, as the ground rose, a bed of peat, and, above that, a gravelly hill: no sooner was the drain carried through the peat, than the sides and top came in of the consistency of thin cream; this was barricaded, boarded, and thrown out, till a hole was made of many cubic yards, and with no better success. I advised the drain to be left alone and another proceeded with. This was done, but before the second drain could make any impression on the spring, it broke out in a stream of some four inch bore. This ran on for some time on the tops of the drains, and was got into them with some difficulty.

To ascertain the proper distance of drains in porous subsoils—or, rather, to ascertain where drains are wanted, is one of the principal elements of correct drainage: both the requisite dryness of the soil, and very materially the cost of drainage, are affected by it. As a general rule, the depth will be in the inverse ratio of the distance.

If it is deep it may be at a greater distance. To ascertain the precise place, several trial holes must be cut in various parts of the field; when a drain is cut from the lowest level of the field towards the highest part where the water remains in the trial holes, and the distance from the drains at which these are affected mark the distance of the next drain. Sometimes, however, it will be found that ten, or any other number of the holes, are left dry, while one at the same distance is unaffected—and this is indicative that some retentive stratum is interfering, and denotes that an arm will effect all that is desirable instead of a main drain; and thus a general system of tapping the intercepted springs, rather than any system of parallel drains, will be effected. The depth of drains can only be regulated by the circumstances of the outfall; but, as a general rule, and some *general rule must be laid down*, though it has so many exceptions that it can seldom be applied—still, seven feet may be confidently named as the minimum, and the maximum can only be fixed by the depth of the porous material and the cost of cutting.

One of the greatest impediments to the permanence of draining porous subsoils is the deposition of iron or ochreous sedimentary matter on the sides and bottom of the drains. In cases where the fall is very considerable, there is very little chance of its ever occurring, as the rapidity of the current will carry away any sediment without danger; but, in some cases, where the fall is but little, there is a continual tendency in the drains to get filled by this deposit. The safest remedy, in such cases, is to fill up the mouth of the tile for a few minutes, until the whole bore of the tile is full, and then, by withdrawing the stoppage the impetus of the water is so great that it brings away with it the residuum. If this is attended to in the spring and summer, there is little danger of any serious interception of the running of the drains at any other season.

The workman will generally require to have the water with him, either naturally or artificially, to keep the level correctly; and, as it is always present, even in summer, on porous substrata, there can in general be no difficulty on the subject. Still it ought first always to be carefully levelled by a competent engineer, that the drainer may be made acquainted with the general accuracy of the work as it proceeds, and so far be a check on the workmen, and a safeguard as to the proper execution of the work.

The work, however, is only begun when the drainage of blowing sands is effected. Either they have been, in moorland, covered by gorse, and heather, and broom, and bent; or they have been *cultivated* in a way, indistinguishable absolutely as

to whether it were the crops or the weeds which were the objects of cultivation; so completely did the latter exceed the former in number and luxuriance, and so entirely did they overrun the crops which the poor disappointed farmer attempted to produce. He might as well have planted it with fig trees, vines, or oranges, and expect a tropical oasis in a northern clime, as attempt to grow remunerative food crops in a poor starved soil, where every adverse influence was at work, and where there were few of the elements necessary for maturing any of the cultivated crops: while the weeds were luxuriating in all the circumstances of climate and moisture suited to their condition, the same causes were poison to the crops. It is not necessary here to discuss the physiology of weeds thriving where cultivated crops will die—they, doubtless, all absorb the same elements, in kind as well as degree, organic and inorganic; but it is beyond all doubt that in all soils something will grow; and whether it is the constitutional powers of some plants which enable them to extract their food from soils in which it exists in but a slight degree, or whether they have some inherent facility of substitution calculated for indigenous and hardy species, we cannot, in the present state of knowledge, pretend to decide; but it is a fact that such is the case. To show the difference between a poor soil and a rich soil, in respect to the quality of its productions, and what a plant will take up and what it will "make do," a very striking instance occurs in the inorganic elements of hay—taking the one from a rich and the other from a poor soil, in the same locality, and analyzed by Mr. Spence, of York. The soils are at Kirkleavington, near Yarm, and we believe, belong to Mr. Bates, the celebrated short-horn breeder. In 1000 parts—

	Best land.	Worst land.
Potash.....	12.469	8.876
Soda	3.221	6.094
Lime	8.128	8.890
Magnesia.....	1.879	3.359
Alumina .....	.005	.200
Oxides of iron and manganese.....	—	.350
Chlorine .....	.005	.012
Sulphuric acid	2.372	3.600
Phosphoric acid	4.389	4.066
Carbonic acid.....	3.300	3.150
Silicic acid	22.105	18.902
	57.873	57.499

The general characteristics of newly drained and unproductive blowing sands are their deficiency in potash, phosphoric acid, and, above all, in ammonia. Whatever may be the relative values of the inorganic to the organic parts of plants, it ap-

pears quite certain that, in order to enable the organizations of many plants to assimilate the former, there need to be supplies of ammonia, and, in some crops, of carbon, to enable them to take up the inorganic elements into their structures.

But the cultivator of blowing sands, either undrained or imperfectly drained, and where land-springs are within the range of the roots of plants, has also to contend against the effects of evaporation and the great degree of cold it produces. Mr. Charnock, of Stourton Lodge, near Leeds, made some experiments on this subject, which cannot be too extensively known, nor too widely diffused. He showed the comparative evaporation:—

1. From water.
2. From soil in its ordinary circumstances.
3. From soil saturated with water.

These experiments gave, for a period of five years, the following extraordinary results (decimals omitted):—

Evaporation in the year	From water.	From soil.	Soil saturated.
1842.....	.22	.21	.30
1843.....	.23	.20	.31
1844.....	.30	.15	.37
1845.....	.21	.23	.31
1846.....	.23	.18	.33

The cooling effect of this, while it would favour the development of coarse and semi-aquatic grasses—reducing the soil to the coldness of water—would also operate to starve the better plants, and, so far, to nullify the best efforts of the cultivator, as well as evaporate the volatile, and wash away the soluble parts of his manure.

The next step in improvement, after thorough drainage, is partly mechanical and partly chemical; and though thousands of good farmers adopt both these means with great skill and success, they do not all know the precise physical principles which they call into operation to effect the desired end.

There are certain things which the mere act of drainage changes *per se*. For instance, in most undrained soils there is a yellow-ochrey substance poisonous to plants of a high order, and which always being saturated with water, remains in insoluble masses diffused through the soil. The mere action of drying tends to disintegrate these particles. The alternate wet and dry, the effects of atmospheric changes of air and heat and frost tend continually to crumble down, and the rains wash away this ochrey mass as it crumbles and dissolves; and this is one means of the drains being so liable to choke with debris, as we alluded to in an earlier part of this paper. Thus a more favourable chemical seed bed is procured for the plants.

But another effect is also produced. The soils we are speaking of are unadhesive blowing sands; they were kept together by moisture, and by the attraction of cohesion consequent on the sameness of state as regards heat and moisture; but the same processes which dissolve out the ochre, will also tend to disintegrate and loosen the sand, and hence every windy day we have it blowing about like driven snow. Nor will rolling or crushing by mechanical pressure effect the object. Still uncohesive, the particles of sand may be made to pack closer to each other, but there is no union—no adhesion; and the flat surface it leaves only makes it more liable to be swept away by the winds of spring and autumn. For this, the best remedy, when approachable, is to cart on marl or clay. It not infrequently happens that there is in any given tract of loose sand of considerable extent, some deep-lying stratum of clay, and often of unctuous marl. The marls often contain lime and phosphoric acid; and sometimes the potash and soda, of which the super-stratum is destitute; but, if not, its mere cohesiveness will effect the one desirable object so much sought for—that of furnishing a mass of soil sufficiently tenacious to prevent the too free admission of oxygen to the roots of the plants.

Clay will effect the same object, but is generally less rich in the elements indicated above, and its application may, for all ordinary purposes, be considered purely mechanical. Amongst the most striking instances of success in marling to blowing sands, we have observed, is that of Mr. W. Linton, of Sheriff Hutton, near York. The details appear in the *Journal of the Royal Agricultural Society*; but that paper, from the writer's modesty, gives but an imperfect idea of the *results* of the process. A farm of white or grey sand—positively like the scouring sands and used for domestic purposes—was taken in hand by that enterprising agriculturist. Beneath was a stratum of white marl. This he carted out, and spread over the land in the autumn. The winter pulverized it, and the result was that in three years he grew very promising crops of wheat on what had been bent and heather. The quantity applied varied from 150 to 200 loads per acre, and the quick-wood planted for fences showed its gratitude for a similar application, by growing with astonishing rapidity. Similar improvements with red marl, and even with iron blue clay, have been produced; and it is perhaps the cheapest mode, costly as it may appear at the outset, of effecting the necessary adhesive texture of loose sands.

Another mode of effecting this operation is by the pressure of the feet of sheep. The Swedish proverb says, "The foot of the sheep is gold, and it turns everything to gold it touches." But it is not

the foot alone: the droppings from the fleece and the tail, the laying of their greasy locks upon the porous surface, the carbonic acid gas they evolve in eating their food on the ground, and the kneading with their cloven feet of this mixed mass, all contribute to consolidation; and this is as necessary to successfully cultivating such soils, as it is to sow the seed: for, without constant supplies of manure, and constant kneading and consolidation, such soils will not produce large crops of corn.

In order to keep sheep, green crops will be a necessary preparation, and nothing so readily and successfully effects this as turnips consumed on the land. But to get turnips, ammonia is necessary to form a large leaf development, in order to enable them to abstract the requisite carbon; and there are no means more facile, more easily adopted, than the application of bones; and these happen to be just the manure suited to such soils.

There is no question that "dissolved bones" are infinitely preferable on old-going land, and in small quantities. On newly drained sand the conditions are different, and what is required is a larger source of more slowly decomposing material: thus, two quarters (sixteen bushels) should be a minimum application; but as a small quantity of comparatively free phosphoric acid may be desirable, the bones may be first applied, a slight cover of earth fallow, made by a straker on the drill, and a smaller quantity of super-phosphate drilled with the seed. In bones you have what the green crops require, and what is nearly always deficient in such soils—ammonia from the animal matter of the bones, and phosphoric acid from the phosphate of lime in the same.

It is wretched policy to take a corn crop from recently drained sands. It still more injuriously deprives it of the elements necessary to give green crops, and still further encourages weeds; whereas a green crop *first* makes a ready supply of the elements of future corn crops available.

If marl or clay is not available, a further step in consolidation will be necessary. The mucilage of linseed cake, passed through the animals, possesses this in a remarkable degree; and the cost of it is often defrayed, partly by the improved condition of the animals, and partly by the increased fertility of the soil. If time is an object with the improver, there is perhaps no means of effecting it so *readily* as by supplying the sheep on the turnips and on the seeds with half a pound to one pound of linseed cake per day each, during the time they are consuming them.

This is, on the whole, a better plan than applying top-dressings to the corn crops, or drilling artificial manures with the corn seed. In the pre-

sent state of our knowledge we cannot precisely compound what the crops require, and till we do know, and know that it is cheaper, it is best to improve the soil *through the animals*.

To recapitulate the heads:—

1. Drain deep and make thoroughly dry,
2. Consolidate by adding marl or clay.
3. Grow green crops to be consumed on the land.
4. Apply bones, partly raw and partly dissolved,

to produce the capability of growing turnips and clover.

5. Feed the stock grazed upon them with artificial food, and especially cake.
6. And lastly, do not over crop it; and, if ever the four-course rotation is broken, let the omission be a *corn* crop and not a *green* crop,

M. M. M.

Sowerby, Thirsk, Yorkshire,

May 9, 1849.

PROFITS OF LAND IMPROVEMENT.

The readers of this journal are already familiar with the very successful exertions of Mr. C. Colthurst, in the reclamation of waste lands in the district of Macroom, county of Cork—the comparatively small outlay in his undertakings—the very large profits he has actually realized, and the advantage to the ratepayers from the employment afforded by the resident proprietors in some electoral districts of that union. Mr. Colthurst, who is now in Dublin, has favoured us with the following more precise and detailed account of his improvements, and we are quite sure it will be read with deep interest by our agricultural friends. In the present circumstances of the country, the experience of a man who has worked so usefully and practically, is invaluable in the way of example.

“TO THE EDITOR OF THE DUBLIN EVENING POST.

“SIR,—I cannot but feel very much gratified at the notice you have taken of my humble exertions in trying to develop practically the *great* resources of this country, which have put money in my pocket, and enabled me, thank God, to employ and feed those who stood so much in need of it. I owe, sir, all my prosperity and present independence to the assistance of the spade-man (the poor labourer), and as long as the Almighty leaves me health and means, I shall not lose sight of his interest—*particularly as the interest of Ireland in general* is involved in the judicious employment of the able-bodied labourer.

“In truth, the man who directs the spade has hardly time to direct his pen so as to meet the public eye: but the present crisis demands more than common exertion, or total ruin to all classes must follow.

“There are at present 70,000 acres of unreclaimed land in the Macroom Union, where I reside; and I will venture to say, in the entire district, there was not a more hopeless piece of land, when I commenced operations, than these 250 acres. This large undertaking I expect to have completely re-

claimed in March, 1851, should I be spared to do so; and I fully expect it will become some of the finest meadow land in the entire union of Macroom.

“I pointed attention to a great district of wet, but rich land, from Kílerea to the western end of Inchiquin lake, and I take the liberty of suggesting to the government the propriety of sending an engineer to inspect and report upon this most valuable project, for, in my humble judgment, a more secure investment of money could not be had in Ireland with limestone at hand at all points, and turf to burn the lime at Agharahala.

“This district is much more favourably circumstanced than my farm at Ballyvourney, for I am ten miles from limestone. I trust the proprietors will not consider me officious in drawing attention to this important work, and that they will reflect on the motive, and apply to government for a sufficient sum to drain and reclaim this splendid tract (for splendid it would be if properly done), and as twenty-two years are given by the Land Improvement Act for repayment of interest and principal, I trust they will consider their own interest, and that of the public, by entering upon a work that will remunerate them and employ every able-bodied labourer in the union for the next ten years.

“I wish to draw your attention to the great value of water as a fertilizer of the soil. I have 250 acres under irrigation at Ballygarry, and 50 at Clonmoyle. Now, I consider (and can prove) that the water for these 300 acres is worth £300 a year to me, or £1 the statute acre. If, then, I make £300 a year, why should not others turn their attention to *this great source of national wealth*, and not allow the alluvial deposits of the country to go waste into the sea, when, by judicious arrangements, a great portion may be retained up the country for manuring the soil, and not permitted to deposit where it is an absolute nuisance—suppose, for instance, the Cork river—injuring the navigation? But to enable men to carry out upon a large scale the general irrigation of Ireland, an act of parliament ought to be

passed; for I know a great many persons who would embark in such works, but cannot get liberty to take up rivers except at serious cost. If an act of this kind is practicable, I consider it of *east importance*; for in addition to the irrigation of the country, the courses when made would apply also to manufactures or machinery of any kind.

"That Ireland is now in a fix no one can deny; but still, I think, there is hope; if every man is determined to do his duty, and look to his own exertions more than to any government, with self-respect and self dependance—for it is nonsense whining like a set of schoolboys, looking to the government for everything—the country will, ere long, right itself: and though the the poor-law, as it now stands, is a grievous tax, yet, if altered, and made a good measure towards all classes, it will be the means of improving property eventually, and render it more secure, *having a legal provision for the poor*. Let there be no revolution but that which changes the barren heath into a green field, and no arms used but the spade, pick, and the bog-knife. This would be a bloodless battle, but in time, with God's blessing, a noble victory.

"As it may be interesting to your readers to know the result of my waste land reclamation at Ballygarry, I shall give you a brief outline, merely to show what can be done with Ireland, if people will go to work in earnest.

"I took from the late Sir Nicholas Colthurst a large tract of waste land, the average value being about 2s. an acre. I laid out about £4,000 upon it, but was repaid back the entire sum by the crops, save what was expended on building (say about £1,000), for which I got 10 per cent.

"When the present Sir George Colthurst came of age, I sold my perpetuity lease and interest to him for £10,000, and took a new lease of three lives, so as to finish my great bog improvement. When this is done, in the year 1851, I think this latter

improvement will be worth £5,000 more, at least—thereby making upon the whole transaction £15,000.

"To show what a great result has arisen out of a small experiment, I shall briefly state it:—

"I commenced reclaiming (as a model farm) 20 statute acres of mountain, valued by the Tithe Commissioners in 1828 at 3s. 11d. per acre. I laid out in permanently reclaiming this piece of land £334 2s. 10d. (see my evidence before Lord Devon's Commission, in September, 1844, at Macroom), but was repaid back in five years all this sum, and £19 17s. 2d. over:—

Balance in favour of C. Colthurst	£19	17	2
Annual value of hay sold from 1835 to 1846, £80 per annum	880	0	0
	<hr/>		
	899	17	2
Deduct head-rent for 11 years, at £7 11s. 9d. per year	83	9	0
	<hr/>		
Nett balance	816	8	2

Sir George Colthurst purchased in 1846 this lot, giving 20 years' purchase	£80	0	0
Deduct head-rent	7	11	9
	<hr/>		
	£72	8	3
	<hr/>		
Nett profit from 1835 to 1846 . .	£2,264	13	2

"N.B. In the year 1846 Sir George Colthurst's steward sold the hay for £104.

"The profits and sale of this small lot of land have formed a fund that will reclaim 250 acres of deep bog, and if it please God to spare me till the year 1851, I have no doubt but I shall make this farm worth £400 a year, clear of head-rent and expenditure.—I am, sir, your obedient servant,

"CHARLES COLTHURST.

"88 Grafton-street, Dublin, 16th Dec., 1848."

THE CONDITION OF FARM SERVANTS.

We rejoice to observe the increased attention which is being devoted to this all-important subject. It is forcing itself on the attention of farmers, whether they will or no. The social fabric of society is so framed, that a disregard of the relative duties of life invariably produces its appropriate fruit. The great Governor of the universe has so constituted the framework of society, that if one class neglect the duties they owe to another, the evil consequences flowing therefrom react on themselves. This is strikingly illustrated in the case of farmers and farm servants. For a series of years,

the interests, comforts, and social and moral well-being of farm servants, have been very generally disregarded. The one demand which has been made, is that they do their work; and the only interest felt, has been to see that this work is done. Of course there are many honourable exceptions: but such has been the general rule in the north of Scotland. And what are the results? Servants have imbibed the same spirit of selfishness—their one desire is to do their day's work; and a spirit of listlessness, a love of change, an absence of anything like a deep interest in their master's

affairs, have been the consequence. Of course, here too, there are exceptions: but such is the case generally. No one who has studied the constitution of human society, and the peculiarities of human nature, will feel surprised at this. But there are symptoms of a reaction. The state of matters is such, that regard for their own interests, as well as for the well-being of the servants, have forced on this question for discussion:—"What are the best means of improving the condition of farm servants?" Directly and indirectly, it has been brought before the public frequently during the last six months, in various districts throughout Scotland. At the annual meeting of the Inverness Farmers' Society, held on the 1st instant, the question was formally discussed; and though the debate throws no new light on the subject to those who have studied it, it is not without value as a record of the experience of practical farmers. We purpose, therefore, gleanings a few of the leading points advanced on either side of the question.

We select, first, the opinions of those who believe the cause of the evils now complained of, to be in the servants themselves; and to the credit of the intelligence and judgment of the members of the Inverness Society, these are only two:—

Mr. Fraser, Balloch, said—Little could be done for the farm servants, so long as they were so much given to changing places. It was rare that they got a servant to remain a year. This was the great barrier to improvement in their condition. The feeing markets afforded facilities for such changes, and should therefore be discouraged. Servants, when then attended these markets, cared very little whether they went back to their old places or took new fees; and while they were so careless, masters could do little for them.

Mr. Grant, Kerrowaird, said—It was nonsense to talk of gardens. Farmers could not calculate on servants remaining more than six months, and of what use could gardens be in that time. Besides, young men had no time to cultivate gardens. The root of the evil originated in the feeing markets.

These are the only speakers who appear to consider servants, as a class, exclusively the authors of their present condition. On the other side of the question, there is weighty testimony:—

Mr. Gentle, Dell, said—The best answer to the question of how to improve the condition of the farm servant was simply, give them more pay and better rations.

Mr. France, Wester Lovat, said—The bothy system was objectionable. In these they had nothing to attach them to the place, or to their master and mistress. How could they spend their evenings in them? He thought that every servant should have his own house, where he could em-

ploy his evenings in reading, or otherwise improving himself. They should also have gardens. He always gave his servants their own bothy and garden, and he found that it attached the men to the farm, especially the married men. He restricted the garden to vegetables, but he gave them potatoes from the field, and meal. He also allowed them a pig and a few fowls. He had men with him for twelve or fourteen years; but of late he had had a few young men, who, if they were displeased with him, or he with them, went off to the feeing market; they did not care for a master, and took no interest in his concerns. But give the good servant a good house, and take care of him, and in this way he will become attached to the place, and fit himself for other and better things.

Mr. John Grant Duncan, said—He agreed with Mr. France. He always was inclined to make his servants comfortable; and he never had to engage them but once. No one had left him since he commenced farming. Feeing markets had never interfered with him, nor he with them.

Mr. C. Stewart said that it occurred to him that with farm servants they must bring to bear the same principles as in common life. They must educate the young, and carefully train them in morals and education, to lay the foundation of a future race of better servants. Much would depend on the head of the establishment. When the servants see that the master acts his part as a man and a Christian, they will be inclined to follow his example. He would have the master to go among his servants as a friend and as a superior, entitled to give them advice. Such advice would be received far more kindly from him than from a stranger, and nothing would more conduce to the interests of both than that such advice should be given and received with kindness. They must view the servant as a reasonable being, with hopes and aspirations; and behave to him as such. He would not perhaps give him at once the cot and the garden, the pig and the fowls; but he would say—Behave yourself for a certain time, and then I will give you the house and the other things.

Duncan Forbes, Esq., of Colloden, said—He certainly thought feeing markets very injurious to the morals of the servants; and if three fourths of the public houses were abolished so much the better. If masters gave their servants a better education, it would improve them. At Colloden there had been no change of servants, as far as he remembered, for twenty years. (Cheers.) Three of the farm servants were married, and had slated houses; they had no cows, but each family had a pint of milk daily. They might keep as many pigs as they pleased, and hens without number. They

had gardens, and he thought with all things they were very comfortable.

The experience of these gentlemen affords a strong proof of the beneficial influence of proper treatment. No theory, however plausible, can have half the weight of this testimony from experience. The course of conduct here indicated has only to be acted in the spirit of kindness and affection, and the evils complained of will rapidly disappear among servants as a class. It is all very well to condemn feeing markets—and no one can do so more strongly than ourselves—but they are only the off-shoots of more deeply seated evils. District registers and certificates of character are good enough to speculate upon, and their introduction would be a great improvement upon the present system; but they never can effect a thorough change in the principles, habits, tastes, and customs

of the mass of servants. The effectual method of undermining their migratory habits, is to give such inducements as will make permanency advantageous to themselves, as well as to their employers. They are not blind to self-interest and personal comforts; and if they should not at present be in a position in which their prejudices may be overcome by reason, they cannot resist the potent influence of kindness, and a disinterested anxiety for their comfort. A spirit of friendly co-operation among farmers in this great and good work—headed by the proprietary—would very speedily tell on the servants; and we have no doubt that if the relative duties were faithfully and affectionately performed, though it might not make all servants good, it would greatly improve the mass, and link master and servant together in one common bond of union.—Elgin Courier.

A TENANT-RIGHT AGREEMENT

Having been drawn up by H. C. Sturt, Esq. (Critchell House, Dorsetshire) and his tenants, as an attempt at a practical recognition of tenant security; and the same having been discussed and considered by the "Blandford Farmers' Club" at their monthly meetings, held March and April, 1849, the following rules were approved of and adopted, and are intended to apply to the different soils of the county of Dorset; and from which each occupier can select those suitable to his own holding, and agree with his landlord thereon; and also, that they may be hereafter considered the custom of the county, and be applicable to land held under lease, or otherwise.

RULE 4.—Lime if used by itself, or with common mould, according to the following scales. Heavy soils, six years.

1st Year, The outgoing tenant to be allowed	20s. in the £.
2nd Year " " 	17s. "
3rd Year " " 	14s. "
4th Year " " 	11s. "
5th Year " " 	8s. "
6th Year " " 	5s. "

Light soils, three years.

1st Year, The outgoing tenant to be allowed	15s. in the £.
2nd Year " " 	10s. "
3rd Year " " 	5s. "

RULE 5.—Chalk, if done by tenant, the price and quantity per acre to be first agreed on. Eight years, viz.:

1st and 2nd Years, The outgoing tenant to be allowed	20s. in the £.
3rd Year " " 	18s. "
4th Year " " 	16s. "
5th Year " " 	13s. "
6th Year " " 	10s. "
7th Year " " 	7s. "
8th Year " " 	4s. "

RULE 6.—Draining, whether with pipes, tiles, turf, or other materials; pond and tank making where the materials are found by landlord, the tenant doing the carriage. Ten years, viz.:

1st Year, The outgoing tenant to be allowed	20s. in the £.
2nd Year " " 	18s. "
3rd Year " " 	16s. "
4th Year " " 	14s. "
5th Year " " 	12s. "

RULE 1.—Bone manure with turnips, to extend over four years. Quantity not to exceed three sacks per acre.

1st Year, the outgoing tenant, should he quit without taking a corn crop, to be allowed	15s. in the £.
2nd Year, when a corn crop has been taken	10s. "
3rd Year	5s. "
4th Year	3s. "

RULE 2.—Guano, superphosphate of lime, and all artificial manures used for turnips, purchased yard, pig, or any decomposed manure, over three years, and value not to exceed 30s. per acre. The same regulations as to corn crops as in Rule 1.

1st Year, The outgoing tenant to be allowed	15s. in the £.
2nd Year " " 	8s. "
3rd Year " " 	4s. "

RULE 3.—Linseed, or oilcake, fed in the last year of tenancy by fattening stock or sheep, to be repaid 20 per cent.; the outlay not to exceed 20 per cent. of the rental.

6th Year	„	„	....	10s. in the £.
7th Year	„	„	....	8s. „
8th Year	„	„	....	6s. „
9th Year	„	„	....	4s. „
10th Year	„	„	....	2s. „

RULE 7.—Any hedge planted by tenant with consent of landlord, to be subject to valuation.

RULE 8.—If any tenant make, or fresh lay out, any water meadow, the landlord doing the weir work, over ten years, the same scale to be adopted as in Rule 6.

RULE 9.—French grass to be paid for according to value, not exceeding four years.

RULE 10.—Extra buildings required, to be subject to a special agreement between landlord and tenant.

RULE 11.—Temporary buildings. Any shed put up for sheep, cattle, or manure, &c., by tenant, to be taken at a valuation, or removed.

RULE 12.—That for conversion of all pasture land into arable, the incoming tenant to pay 15s. in the £ before the first corn crop.

RULE 13.—Planting orchard with consent of landlord; the outgoing tenant to be paid for the trees as follows: The first year the cost of the trees, and to the sixth year according to their increased value; from the sixth year to the twelfth year to remain at the same value; after the twelfth year to be considered the property of the landlord.

RULE 14.—That if at the expiration of any tenancy the land is not left in proper and husbandry-like condition, the outgoing tenant shall be liable to be assessed for such neglect, the amount to be settled by arbitration.

RULE 15.—All chalking and draining, the making of water meadows, ponds, and tanks, to be with consent of landlord, and in writing; and if done by landlord, tenant to pay 5 per cent. on the outlay.

RULE 16.—That twelve months' notice to quit be given in all cases by either party.

RULE 17.—If any dispute arise between landlord and tenant respecting any of the afore-mentioned Rules, to be subject to reference, one to be chosen by each party, and a third to be named before proceeding to business, whose decision shall be final.

It was also proposed, seconded, and unanimously resolved, that the "Tenant Security Rules" agreed on by this club be recommended to the landed proprietors of the county of Dorset for their consideration and adoption.

Blandford, April 14, 1849.

SEWAGE IRRIGATION.

All writers on the above subject always quote the example of Edinburgh as an instance of the great value that attends the application of sewage manure in irrigation; but they ever wholly forget that the comparison altogether ceases between the same object being effected

in London—the situations are widely different, as east from west; and no analogy can be traced. The situation of Edinburgh is on high ground, and the surrounding locality slopes in every direction; especially in the north-easterly direction, where the chief use is made of the contents of the sewers. The new part of the old town, running to the south, discharges the excrements on the sloping declivity that fronts Salisbury Crags; and there the "cloace" discharge the semi-fluid manure at once upon the irrigated ground, with the assistance of a main carrier to make the equal distribution. After having floated over the existing quantity of ground, a ditch receives and conveys the excrementitious fluid to still lower ground, on the sea-side approaching Portobello; and after having manured the possible area of ground there, the watery manure escapes to the sea over the sandy beach. In other parts of the town, where the situation does not admit the application, the excrements go to waste, altogether unnoticed.

In this case there is a very easy application, strictly economical, and showing itself to the very dullest conception. But London is wholly different; the situation is low, and there is no ground between the town and the river on which to use the fertilizing fluid. If there were any lands they would have long ago been irrigated. The river receives the London filth because no other application is possible. Give to London the advantages which Edinburgh enjoys, and the same use of the excrements would long ago have been made.

The fertilizing filth of London being deposited in circumstances where no use can be made of it till the position be altered, the question remains to be solved, how that change can be effected, and by what means the excrementitious mass can be conveyed to the locality of the useful applications. The exsiccation of the semi-fluid mass destroys very much of the utility in bulk; but as the essences are more concentrated, that mode of application may form the preferable method of use. The grassy herbage that is raised by means of food administered in that gross form is very succulently coarse; the produce of the irrigated lands at Edinburgh is fit only for the paunch of milch cows, whose voracious maw will devour almost any green thing. The reduction of the bulk will render the food of a finer quality, and productive of finer articles.

The excavation and arching of the Thames Tunnel has shown that roads below ground can be made for any purpose, and that the durability is proved. Hence it may be inferred that arched roads may be made underneath London, on which, by means of railways, the excremental fluids and solids can be conveyed to the places of preparation. It is very much easier to intercept and convert to usefulness descending substances rather than ascending; and more especially when the ascent must be created, as in the case of the "jet" company, whose motions seem very slow and executions languid. There can be no doubt that the drying of the sewage manure is the best mode of use in every respect; and the above way of under-arching the roads seems the most plausible way of converting the mass into utility.

AGRICULTURAL EDUCATION.

The education of the farmer has attracted some very considerable notice of late years, and has given rise to institutions having for their object the very special purpose of imparting the branches of instruction necessary for that profession. It is evident that, with this object in view, the direction must be very widely different from the course that has been hitherto pursued, where the especial attention lay in stamping the youthful mind with the dogmas and prejudices of the craft, and making a slavishly passive recipient, instead of an active exponent; originality is thus wholly destroyed, the energies are cramped, and the powers of thought are never brought into action; tricks and trammels usurp the place of active enquiry and of legitimate reasoning.

Youth must be very early placed on the anvil of learning, where it will be forged and fashioned by the incessant care of the instructor, unceasingly applied, and skilfully directed. The iron when warm can be forged by the hammer of the blacksmith into any form; but if it gets cool, obduracy takes place, and defies any further ductility. In like manner, the warm and tender mind must be early moulded and fashioned, before it cools and becomes callous from the impressions of rules and customs. It is of vast importance to fix, at an early period of life, an ardent and generous enthusiasm, while the mind is susceptible of almost any impression: at that time a most powerful operative principle will be produced, which will be attended with the most beneficial results, and a stimulus will be afforded which will push into activity the latent powers of nature. A variety of learning must be poured into the intellectual furnace, where by the action of fusion and amalgamation a clear current is produced, which, in its progress over grosser materials, burnishes every idea with a brighter polish, and gilds every object with a clearer varnish than it before possessed. The mind will be whetted and incited, and yield the scintillations and coruscations which arise from the attrition of exciting causes. As a flame is fed by a quantity of combustible materials, and is rendered more clear by the burning, so is the mind agitated by a mass of causes, ignited by the friction, and kindled into a blaze; the mind abounds and overflows with the possession of varied knowledge, and the extent of genius always increases with the amplitude of things.

The existence of one or some few substances, in the most intimate contiguity, could not produce the combustions and eruptions of volcanic mountains; the few materials lie inert and wholly dead; the presence of many substances, fused and amalgamated into the most minute and intimate relationship, gives rise to the mutual action, which increases to a boiling effervescence, and arrives at the overflowing of the furnace, producing an entirely new substance, compounded of the essences of the hete-

rogenous mass, and under the name of "lava" is found to be extremely fertile. In like manner, the variety of learning being poured into the intellectual furnace, is agitated by the attrition of exciting causes, and boils to an effervescence, and at last overflows, producing originality, or the "lava" of the mind; which, in the shape of something wholly new, or in something better managed, is found to be very fertile, and productive of very great general benefits.

The variety of learning must comprehend all the liberal and physical sciences, for the understanding of which branches a very large knowledge of classical learning is most essentially necessary. Farmers will snuffle with contempt at the idea of their sons being taught Greek and Latin; but they must recollect that the ancients *thought*, and that the moderns only dilute their ideas. The lofty conceptions which they formed, the elevated ideas which they entertained, the beautiful imagery with which they decked every object, and the wide theatre which they laid open to contemplation, naturally lead every person conversant with their works to adopt the same modes of thinking, and to extend to the practice of an art the same enlightenments of imagination and the same decorations of performance. Varied education adorns all persons of wholly different professions, and, where least expected, raises them to excellence.

A liberal and comprehensive education must be given to youth before the profession is shown to the mind in which it is intended to employ its efforts. When the mind has been abundantly stored with general learning, it may then be employed in the art or profession; and it will come to the performance of it with an ample store of accessory aid, from which to supply the wants that are seen to exist. The early impressions of dogmatic prejudices are thus avoided; and experience has shown that no future training of the mind is able to remove the stamps that are fixed on the tender mind of early youth.

The object of the present institutions should be to bring enlightened minds to bear upon agriculture, in whatever circumstances the performance may be required. The profession should be kept from view till the mind be supplied with a profusion of general learning, which will enable men to see everything, and consequently to abridge everything.

Drilled agriculture of every kind is wholly owing to Jethro Tull; the threshing-machine sprang from a Scotch lawyer—men whose education broke the trammels of the craft, and saw a want which required to be supplied.

Even the present enlightened age is unable to divest itself of rules and customs. The clergyman dreads that youth be not early and ineffaceably stamped with the belief of the Thirty-nine Articles; the farmer is terrified that the use of machinery may diminish labour in threshing grain; and the landlord dreads the nascent liberality that would demand a lease of land in security of property, even though he enjoys the very same liberty himself, long since settled, and now wholly unchallenged. These, and many similar consequences, will flow from a liberal and varied education, whenever its efforts are not counteracted by early dogmas and artificial trammels.

J. D.

THE LONDON FARMERS' CLUB.—MONTHLY DISCUSSION.

The ordinary monthly meeting for discussion was held at the Club House, Blackfriars, on Monday, May 7; Mr. Smith, of Emmett's Grange, South Molton, in the chair. The subject was introduced by Mr. Shaw, of the Strand. It was "The most beneficial means of providing employment for the agricultural labourer."

The CHAIRMAN said he proceeded to perform the duties of his office that evening with feelings of great satisfaction; for on looking into the annals of the Club, it would be difficult to find so important a subject of discussion as that of which Mr. Shaw had given notice that evening. There was another source of satisfaction; namely, that when he looked round the room he saw gentlemen from the principal counties of England, whose presence showed that they were determined to support his friend Mr. Shaw in dealing with the question on the card. (Hear, hear.) The Club had met at various times under various circumstances and for various purposes, but never had they had before them a subject more suitable to the times than that which they were about to discuss. Not only were the circumstances of the farmer himself changed, but his position was changed in relation to the agricultural labourer. In regard to men who had grown up amongst them, who had been in their employment from youth almost to old age, difficulties had arisen of the most painful kind. In the district whence he came he found on this subject but one feeling existing among farmers—a desire to employ men as they employed them years back. If the present state of things continued, it would be difficult to foresee the result; but one thing was clear—namely, that the able-bodied could not be employed. (Hear, hear.) He had felt it to be his duty as Chairman to say thus much with regard to a body of men with whom it had been his pleasure to mingle from his earliest youth; and having done so, he had only further to call upon Mr. Shaw to open the discussion. When they heard the name of Mr. Shaw as the introducer of that most important subject, they well knew that it was in good hands, and they could not doubt that it would be treated by that gentleman in the manly and straightforward manner which was characteristic of him. (Cheers.)

MR. SHAW said: Gentlemen, it was with a due sense of the importance of this question that I submitted it to the committee as one suitable for discussion by the Club; but as in proposing questions we leave it open as to who shall bring them forward, I was in hopes that this would have fallen into other hands; for I should indeed be wanting in a knowledge of myself if I did not feel that men who employ the labourer daily, who see his wants, and observe his position relatively to their own, who know so well the circumstances which militate against him, and those which tell in his favour by enabling them to employ him—it would indeed be strange, and evince ignorance of the whole matter, if I

did not feel that such persons are much more competent to bring forward this question than I am. Nevertheless, I have always felt in this Club, that whoever opens the question has only to start the hare, and enough will be found to make a good hunt. (Hear, hear.) Gentlemen, it is with that feeling that I now proceed to open this question. I should, however, first state, by way of apology, that, owing to my various avocations, I have not been able to devote that time to the subject which it requires, and shall therefore only be able to place my views briefly before you, though I hope they will serve to originate a useful discussion. I should also state that my main object, when I proposed this question, was to afford an opportunity of again entertaining a question which has been discussed before in other points of view, so far as regards its bearing on the interests of the agricultural labourer; namely, the question of security for the capital of the tenant—in other words, tenant-right. We have had that subject before us, first in relation to its bearings on the tenant, and afterwards in relation to its bearings on the landlord. It has occurred to me that it might be treated as bearing also in a very considerable degree on the interests of the labourer; and therefore it was that I wished to have an opportunity of eliciting your opinions on that view of the question. With these introductory remarks I proceed to submit to you an outline of the subject, and I shall then offer some evidence in support of the view which I take, which though brief, involves the most important points bearing on the position of the tenant, and the influence of security in the tenant's holding upon the employment of the labourer. The huge fallacy broached some years since, that the surplus agricultural labour might find employment in manufactures, is now completely exploded, inasmuch as the manufacturers can scarcely reckon upon constant occupation for the operatives resident in their respective districts. The agricultural population is increasing daily, and, as "sharp experience" now demonstrates, must, in the absence of work, be maintained at the cost of the rate-payers, the paupers themselves rapidly tending to pauperize the class next immediately above them. Had the railway speculation been restrained within moderate bounds, so that the annual investment of capital should have kept pace with the means of the public to supply it, great national benefit would have resulted, not the least part of which would have been the absorption of surplus labour, and the increased consumption of food consequent upon the regular employment of operatives of every description. The want of rational interference upon the part of the Legislature in placing some restriction upon undue speculation has involved the country in serious evils, among which not the least is that of having a vast number of labourers of the agricultural classes unemployed. Caution on the part of the Legislature in interfering with the rights of property

is highly commendable; but there is a point beyond which the absence of interference is censurable, inasmuch as evils which might have been avoided are suffered to arise, and can only be remedied at the cost of severe suffering and heavy pecuniary expense. In considering the subject of this evening's discussion, "The most beneficial Means of finding Employment for the agricultural Labourer," I have experienced some difficulty in determining how to treat the question in respect to the expression "most beneficial," inasmuch as that term seems to involve a comparison of all the various "means of finding employment" which might be suggested; but after due consideration, I have arrived at the conclusion that the expression "most beneficial means" here used is synonymous with "best," and hence that the question might be read, "The best Means of finding Employment for the agricultural Labourer." On reviewing the question, I feel sensibly that at this peculiar juncture there is a preliminary question which it would seem necessary to settle before the subject under consideration could be entered upon satisfactorily; but for our present purpose, it seems to me, we must assume that the tenant-farmer will by some means enjoy a priority in the home market, and hence be placed in a position to employ the labourer. Taking this view of the question, it will, I think, be apparent, from the vast quantities of foreign grain and produce recently imported, that a supply of food beyond that which is now ordinarily raised is needed to supply the demands of our increasing population. I apprehend it will not be requisite that I should advance any arguments to prove that not more than one-third of the land of the kingdom is farmed up to the highest pitch—in other words, is made to produce as much as skill and capital can procure from it. If this position be granted, taking 17,605,630 acres as the amount of land under cultivation, there will be 5,868,543 acres capable of affording a larger amount of produce. Referring to the general character of the cultivation of these 5,868,543 acres, I should be disposed to consider that the produce might be increased to the extent of one-third. Again, referring to the pasture-land (estimated at 11,143,370 acres), I believe that one-half might most advantageously be brought into cultivation. Taking the whole together, arable and pasture, my impression is that, at the least, one-half requires draining, and would amply repay the outlay. I will, however, to be quite within the mark, call it one-third, which will be 9,583,000 acres. Now, taking the arable land capable of improved cultivation (5,868,543 acres), I do not think it will be too much to presume that an additional outlay of 10s. per acre in labour might be made, which would amount to £2,934,271. The estimate which I have formed is that, on well-farmed land, the cost for labour is about 30s. an acre. For my present purpose, I assume that, the land being moderately farmed, in this particular case there has been £1 an acre already laid out, and I leave a margin of 10s. more for improved cultivation. A pamphlet by Mr. Caird has just appeared, in which he gives an account of an improved system of management adopted on a farm in Wigtonshire, on which there is an increased outlay for

labour of upwards of £1 per acre. If, then, we take a moiety of the grass-lands, which I hold might be advantageously cultivated, and allow an outlay of only 25s. per acre for labour, there will be 5,571,685 acres, at 25s. per acre, which will amount to £6,964,606. In drawing up these figures, I felt the absurdity which is often exhibited in straining an argument or a position by enlarging figures as much as possible. I have taken the contrary course, and endeavoured to keep quite within the mark. Instead of calculating 30s., which I think would not be an unfair price, I have put down the amount at 25s. Of the land which requires drainage, I will suppose that one million of acres were drained annually; and, seeing that the operation of draining, including the manufacture of tiles, consists mainly of labour, a further sum of three millions per annum would be expended. There you will correct me if I am wrong. There is so much diversity of opinion with respect to drainage, as to the depth of the tiles, the kind of pipes which should be used, and other matters, that I have thought it best to take the cost of draining at an average of £3 per acre (Hear, hear).

Mr. MECUM: That is very fair.

Mr. SHAW: Now it may seem chimerical to suppose that such a quantity of land can be drained; but I assert that it can. We have, I repeat, already had evidence of the readiness which there is to take up loans offered by the Government. What we have seen shows that capital is wanted for drainage: how it is to be obtained, is another question. I hope the Legislature will not always be so squeamish in matters of such vast magnitude, and involving to such an extent the employment of labour. They are not delicate about coming into our gardens, our lawns, and even our houses, if they are required for railways; and I think that is trenching upon the rights of property as much as any one can do. I confess I do not see why, when the labouring population is starving, some great exertions should not be made to relieve it, especially when we know that money might be raised without the slightest disadvantage to the country. We know perfectly well that the landowners are willing to pay a larger per centage for capital than the Government need offer in order to raise it in abundance, provided they choose to do so for such an object. And here I will take the opportunity of mentioning that a bill for establishing a drainage company upon an extensive scale is now passing through the last stage in the House of Commons, and will be immediately sent up to the Lords. This company will advance money for the purposes of drainage, and will also perform the work, after the model of the West of England Drainage Company, which has been eminently successful so far as its capital has extended. The repayment will be spread over a series of years, after the Government plan. It is hardly necessary to observe that, as an investment, the shares of such a company will be of the highest order, inasmuch as the land itself will be the security, and they will enjoy priority over other charges. I am very happy to be able to state this. The matter is one with which I am myself in some measure connected. Six or seven years ago I made

similar attempt. A number of gentlemen associated together in the West of England; a company was established, and succeeded admirably, the only impediment being an insufficiency of capital. I apprehend that, considering the persons by whom this new scheme is supported, it will inspire sufficient confidence to induce many to join. Nothing is needed to ensure success but a portion of that surplus capital which often does so much mischief when employed in other departments (Hear, hear). It would be a work of supererogation to advance any arguments to prove the advantages of surface draining, or the profitable results of breaking up inferior pasture land. In respect to the former, we may cite the experience of Mr. Woodward, of Breedons Norton; in respect to the latter, Mr. Beman's essay, published in the *Farmer's Magazine*, is conclusive. Another important source of employment for the agricultural labourer would be found in clearing the outfalls, whereby thousands of acres of land now wholly or comparatively valueless might be rendered capable of cultivation, and consequently valuable. Instances are not wanting where land has been increased in value from £10 to £50 and £60 per acre, and even more, by arterial drainage. Deeply impressed as I am with the serious position in which we are placed with respect to our labouring population—believing, as I do most sincerely, that if this country is destined at any period to fall, it will be through her being eaten up by a surplus labouring population for which she cannot find employment, I say it is the duty of the Government under such circumstances, without improperly or unnecessarily interfering, as foreign governments have generally done, in matters of private or joint-stock enterprise, it is the policy of a sound paternal government to open out the great fields of labour as well as they can, and to afford capitalists and farmers an opportunity of taking advantage of their measures. I maintain that the object is well worthy of their consideration, and that no public money could be more properly applied than that which might be devoted to the opening a main trunk conveyance for the water off the land (cheers). I know excellent land in Yorkshire which is completely useless because there is no outfall. The owners cannot go on the land of their neighbours to cut one, and even if they could it would be too costly to the individual; but if such outfalls were cut on a grand scale, suited to the case, thousands of acres of land might be made to assist in the employment of the people, and at the same time contribute to increase the supply of that food of which, as a community, we stand so much in need. The object is one to which I am persuaded the government would do well to direct its attention. The application of drainage water to mill power and irrigation is an object too frequently neglected where that operation might be conducted upon an extensive scale, and the nature of the circumstances afford facility. Mr. Williams, in his essay on Land Drainage and Irrigation, gives the details of the drainage, irrigation, and erection of mill power at Lord Hatherton's farm at Teddersley; the result of which is, that "the drainage of 521 acres, and the employment of drain water over 89 acres of land, and the saving effected

by the employment of mill power, afford a clear annual interest on the outlay of upwards of thirty-six per cent." All these operations not only afford immediate employment of labour, but also furnish a future continuous demand. Now, in mentioning matters of this description, of course it is quite unnecessary for me to say that I only name them as affording illustrations of what may be done by those who have extensive means at their command. As regards the practical farmer, such improvements could scarcely come within the compass of his operations. Permanent improvements of such magnitude ought of course to be carried out by the proprietor. Still, it is quite clear that as regards the landlord himself there are modes whereby operations might be performed which would bring him a large productive interest, and also lay a foundation both for the immediate and for the future employment of labour. If, then, we take account of the several sources of labour pointed out, they will show a rational means of expenditure of nearly thirteen millions per annum, irrespective of the incidental labour which must arise out of such an outlay; that is to say, supposing an improved system were adopted in respect of one-third of the land already in cultivation. Supposing a portion of the pasture land which, though now productive, is only productive to a small extent, and supposing that one million of acres which required draining were annually drained, the amount which might reasonably be expected to be expended in the several operations is about £13,000,000 per annum. Labour to that extent would be added to that which is already employed. The first difficulty which naturally presents itself is, whence the capital to set in motion this great amount of labour is to be obtained? This question naturally divides itself into two parts; first, as to the capital to be supplied by the landlord, and next, that to be supplied by the tenant. Primarily I hold that it is the duty of the landlord to put the farm and premises into a condition for carrying on the business: suitable buildings, roads, and fences are essential, which, together with the drainage, as a general rule, should be made at his cost. It has, however, been frequently matter of surprise to me that landowners, not finding it convenient themselves to make the required outlay for the improvement of their estates, do not adopt the same course in respect to farms as is pursued in letting land upon building leases. There would be no difficulty in estimating the rent and term of years for which an estate should be let where an outlay of any description were needed, whether for drainage, making fences or roads, erecting buildings, or any other improvement. Now that is, perhaps, a somewhat novel idea (Hear, hear). Nevertheless, I feel persuaded that the time is coming when that idea will be carried out with respect to land. I can see no reason at all why a landlord who has got 500 or 1,000 acres of land from its quality capable of cultivation, but which cannot be cultivated without a very large expenditure for enclosing, making roads, the erection of buildings, &c., and therefore lies useless, unproductive both to himself and to the public, because he has no means of laying it out for cultivation; when that land, the raw material of the agri-

culturist, is thus craving as it were for labour, I see no reason why a period should not be fixed upon—say thirty or thirty-five years—over which a lease should extend which would secure cultivation (Hear, hear). I can perfectly understand a person coming forward and saying to the owner, “ I will take 500 acres of this land at a nominal rent for a certain period ; I will undertake to enclose it, to make roads upon it, to drain it, to erect buildings ; and I will enter into covenants similar in principle to those which have been entered into with regard to land let for building in the neighbourhood of Regent’s Park and Pimlico.” I really cannot understand why that course should not be pursued at the present moment. You have all, no doubt, seen latterly a good deal of exposure with respect to the use made of the crown lands. A gentleman of the name of Downs has made himself exceedingly active in estimating the value of some of those lands, and there is one particular property which is now producing scarcely anything to the Crown—in fact, I believe it is little more than a deer forest for some nobleman—which Mr. Downs says he would be prepared to take on lease, provided the terms of the lease were fair, and to pay £5,000 a-year for it. I cannot see why the Crown, instead of bringing itself, through the Woods and Forests, into that disgrace in which it has been of late, by the exposure of gross mismanagement of its lands—I cannot see why it should not set an example to the whole country by carving out such property into farms of convenient sizes ; thus making that useful and profitable which is now useless and profitless, and thereby opening out an extended field of employment to the agricultural population ; and were the example followed by the owners of other land in the same situation, in many places a property would be growing in value for a future heir, in a similar manner to that which will fall into the possession of the son or the grandson of the Marquis of Westminster at Pimlico. The principle is in each case precisely the same, while it is evident that increased means would, in the case of agricultural land, be afforded for giving employment to the agricultural labourers. This part of the question brings us to the consideration of that all-important subject which involves all agricultural improvement upon an enlarged scale, and consequently the extension of the field of labour, namely, security to the capital of the tenant farmer, without which it were vain to expect that increase in the employment of labour which is of such great importance in reference to the present question. I feel convinced that were such security afforded, not only would the agricultural labourer be fully employed, but a superabundant supply of agricultural produce of every description would be obtained from our native soil. In support of this view I would refer to the evidence given by the various practical men before the Agricultural Customs Committee, and particularly to the conclusion arrived at by that Committee as set forth in the report. Now, gentlemen, I must tell you that I have introduced this evidence designedly, because I feel that the report of the committee which sat on the subject of Agricultural Customs last year is not so much read and examined as it

ought to be. I think no opportunity should be lost of calling attention to that report. On this occasion, I wish to read a few sentences to you, in order to show what impression was made upon the committee by the evidence of the practical men who were examined. I do not know whether I have before stated to you in this room—but even if I have, it is so important that it will bear repetition—that of the fifteen or sixteen gentlemen who formed the committee, all were either themselves considerable landowners at the time of the inquiry, or heirs to large landed estates ; and therefore, when any person chooses to look superciliously on the question of tenant-right, and to repudiate the notion of affording security to the practical farmer in his occupation, I say it is conclusive evidence that it would not be prejudicial to the interest of the landlord to adopt tenant-right, when I find fifteen or sixteen gentlemen, after sitting in judgment on a body of evidence which has been brought before them, coming to the conclusion that the principle is sound, and ought to be extended. This would not have been the case if these gentlemen had the slightest mistrust of its effects. Though there were not more than three of those gentlemen who went into the question fairly, and with a determination of prosecuting the inquiry to the full extent, the committee was unwillingly led to pronounce a verdict in its favour. I would now call your attention to a few clauses in the report of the committee, which bear upon the question now under consideration. I find in it this passage :—

“ That in some parts of the country a modern usage has sprung up, which confers a right on the outgoing tenant to be reimbursed certain expenses, incurred by him in cultivation, other than those of ordinary husbandry, above referred to.

“ That among such expenses are included the purchase of food for stock, the purchase of certain kinds of manure, and the draining, chalking, and marling of the soil ; the result of all which outlays is, to effect an improvement of the soil, more or less lasting, and requiring more or less time to elapse before the increased productiveness, thereby obtained, reimburses the expenditure incurred.

“ That this modern usage appears to have grown out of improved and spirited systems of farming, involving a large outlay of capital, and to have been promoted by forms of agreement between landlord and tenant, whereby the former covenanted to give compensation for such outlay ; which forms have been from time to time altered and enlarged, and are still extending themselves with the continued advancement of agriculture.”

The next clause in the report which bears upon the question is the following :—

“ That the improvements above mentioned, which are very generally required throughout the country, in order to develop the full powers of the soil, are greatly promoted by this system of compensation, and therefore it is highly important that all difficulties should be removed which stand in the way of its extension.”

Again :—

“ It seems very desirable to your committee that estates under settlement should be endowed with every practicable privilege for their advantage which is attached to absolute property ; and that persons having limited estates, in addition to the ordinary leasing powers generally conferred on them, should

be enabled, under proper precautions, to enter into stipulations of the nature of those above referred to, which at present it appears they cannot do.

"That the power to enter into such stipulations, binding on subsequent interests, might be advantageously made a general incident to leasing powers of land in settlement, by the aid of parliament; and also be conferred on persons having certain limited interests in land."

Nothing could be more conclusive as to the necessity for the adoption of the principle of tenant-right, or of affording some kind of security for the capital of the tenant-farmer. The committee then recommend that those parties who at present have not the power of granting leases, should be enabled to do so; that is the effect of the bill of Mr. Pusey, which is now before parliament. You are aware that a very large portion of the land—perhaps one-half—is so held that the immediate tenant for life cannot bind his successor by entering into an agreement to give compensation to his tenants. The consequence is, that the tenant remains in daily fear of being deprived of his occupation, and is of course unwilling to make any spirited outlay, or to effect any expensive improvements. I know very well that many persons talk of the confidence which should subsist between landlord and tenant. I can never hear the word "confidence" without a smile. I know it is a very good thing; but I maintain that when we hear it said that Mr. So-and-So never turns a tenant off a farm, the use of that very phrase is an admission of what I contend for. Why is not the tenant turned out? Because there is a feeling that he ought not to be turned out. That security is essential. (Hear, hear.) The question is, whether the tenant should be exposed to accident or to the chances of loss, when there is room for him to spend his money in effecting improvements. I say that, however kind, and virtuous, and liberal the landlord may be, he should not hesitate to confirm his good intentions by granting tenant-right. We have an excellent example in the case of a well-known nobleman, Lord Yarborough, who is not content with saying, "My father and my grandfather never turned tenants out of their farms, and I shall not do so," but who nevertheless grants to his tenants agreements which secure to them the benefits of their exertions, and afford to them that comfort and satisfaction of mind which a man always feels when he knows that he has good security. Surely if the tenant's capital is as valuable to him as the landlord's capital is to him, there is no reason why the one should not be made as safe as the other. (Hear, hear.) Well now, gentlemen, I will just give you a few more extracts, by way of confirming the conclusion at which the committee arrived, from the evidence of a few practical men who were examined on this question; knowing that nothing comes home so completely to the bosoms of agriculturists as the evidence of those who are engaged in the same pursuits with themselves, especially if, as is the case here, they have also devoted a great deal of time to the subject as land agents. Mr. Thomas Owen, of Clapton, near Hungerford, is asked—

"In your opinion, would it be desirable that the tenant should receive compensation for those various improvements that your attention has been called to? There is no doubt of it; I think any security you could give the tenant for his

outlay must give a stimulus to the improvements; the tenants would do a great deal more if they could be certain as to being repaid; every tenant who has capital I am convinced would outlay it."

That is the evidence of a gentleman from Berkshire Mr. Samuel Jonas, a well-known practical farmer in Cambridgeshire, is asked—

"As to the general feeling amongst farmers now, do they wish for greater security for their capital in your locality? I myself know of few men possessing capital who would engage in the cultivation of land, unless they had some security, or they would naturally secure themselves in the way I have mentioned, by partially reducing the value of their land towards the termination of their lease. There are tracts of land that members of the committee are aware of, where the landlord is debarred from granting a tenant any compensation under the lease; and therefore, to introduce a proper cultivation of the lands of England, it would be necessary to give them security, which is not now given."

There he alludes to the case of tenants for life, of which I have just spoken. We then come to Mr. White, a land-surveyor and inspector of farms in Cheshire:—

"Do you think that the recognition of tenant-right for improvements would, both in Lancashire and Cheshire, tend greatly to the improvement of farming? I do."

Mr. Rowley, a tenant-farmer in Derbyshire:—

"Are you of opinion that if the tenant farmers had more security for their capital they would increase the produce of their farms? I am quite sure they would be able to do so."

Mr. Turner, a member of this club, and a gentleman very well known in Devonshire, is asked—

"In your opinion, is the tenure of land in your part of Devonshire such as is not encouraging for the improvement of its cultivation? I think it is; I think, if proper encouragement were given, and a better mode of tenure existed, or some legislative enactment was passed, that the land could be vastly improved in the county of Devon."

Our friend Mr. Hutley is asked—

"Is it your opinion, as a practical man, that if landlords gave this compensation, there would be much increase in the produce of meat and of corn? I have no doubt about it: I am of this opinion, that every acre of land would be capable of growing a good crop every year if compensation was given for all improvements; and some of it would grow half as much again as it does now at the latter part of the leases."

Then, with regard to the breaking up of grass lands, I have already adverted to an essay of Mr. Beman's, published in the "Farmer's Magazine." This gentleman, also, was examined before the committee; and I would observe that last winter he received notice to quit two farms which he had occupied for fourteen or fifteen years, and upon which he had expended a large sum in improvements, for no other reason than that he had had the misfortune to get involved in a quarrel with the gamekeeper; a pretty cause, indeed, to subject a man to be robbed of his capital! Mr. Beman is asked—

"Have you, below the hill, in Gloucestershire, towards the Vale of Berkeley and the Severn, a great deal of strong land? Yes.

"Is it capable of much improvement by draining? Very great.

"Is there much poor grass land there? Yes, a great deal.

"What would you recommend being done with that? Its being well drained and converted into arable land.

"Do you think in that way farmers would be induced to give an increased employment to labourers? Yes, materially so."

Then, further on, he is asked—

"You have stated that, in your judgment, great improvement would take place if a certain portion of the Vale of Gloucester by the Severn was broken up—some land, you said, below the hills? All land below a certain value: all green land below a certain value ought to be converted into arable.

"You said that it would employ a great increase of labour, and afford a greater increase of produce? Yes; and not only that, but we could keep as much stock upon it after it had been converted, although one-third should be in corn; the remaining part would produce so much more food, and we could keep as much stock, although one-third produced corn."

Now, Mr. Beman does not merely state this off-hand, but he proves it by his own practice and experience, in the essay to which I have alluded. Mr. Higgins, of Herefordshire, a very large farmer and a very intelligent man, is asked—

"What should you say would generally be the increase of the growth of wheat per acre in Herefordshire if the land were well drained? If the land were thoroughly drained, there are districts in Herefordshire that I think I am speaking within compass when I say that the quantity may be doubled; I mean that there are districts in the county that would do that."

It seems perfectly clear that, irrespective of the mere operation of draining, a constant demand for labour would, in various ways, be produced; and, if such operations were conducted on an extensive scale, an excess of corn would be produced. I believe that if this matter were attended to, we might, by using all our appliances, make this country, within two or three years, an exporting instead of an importing country. The population might go on increasing, until the demand exceeded the supply; but at all events we ought to exhaust our own means of obtaining a sufficiency before we go elsewhere. (Hear, hear.) There is another point which enters incidentally into this question, which is, as it were, consequential upon increased cultivation, and that is, the enlargement of small fields. Mr. Hatch, a tenant-farmer and land-valuer, is asked—

"What instances were you about to state with reference to the enclosures? I spoke of the parish of Hligh Halding, in Kent; there is one farm of fifty acres, which is divided into twenty-six pieces; there is another farm of thirty-seven acres, divided into twenty enclosures; there is another farm of fifty-four acres, which is divided into twenty-four enclosures; there is another farm of twenty-three acres, divided into sixteen fields; there is another farm of 155 acres, where there are forty-two fields; some of those cases are cases of small freeholders, men using their own land. Then there is another farm of 112 acres, belonging to a noble earl, which is divided into forty-eight pieces. Taking the total of the parish there are 3,733 acres, and out of those there are 1,020 acres of waste or uncultivated, viz., hedges, underwood, ponds, &c.

"Do you think hedges are waste? The hedgerows are wide, and there are very wide lanes where the fences are not set out straight; they leave immense widths. Taking the whole parish as containing 3,733 acres, it is divided into 1,303 enclosures, and that gives an average of 2½ and 20 rods for the size of each field."

Mr. Outhwaite, a farmer in the North Riding of Yorkshire, is asked this question—

"If the tenants of the North Riding of Yorkshire had compensation for improvements, there is much room for improvement to be made in consequence? Yes. I have travelled through many counties, and there is none more capable of improvement than Yorkshire. There is some of the very worst farming in our neighbourhood, which arises entirely from the want of compensation: I can mention one case in particular, where there was a large proprietor, who happened to be a lady, and to one of her tenants I said, 'What is the reason that your farm is so badly farmed?' and he said, 'Sir, I can give a good reason for that; the last seven or eight years we have expected the landlady to die,' and he said, therefore they were taking advantage of the land; he was quite certain that when they got a fresh landlord they would be either turned off or have the rent advanced, and they were expecting every year to be the last: that land was only worth half its value, it had got into such a bad state."

Now, it must be perfectly clear to any man, that if this land had been let under either the custom of tenant-right or an agreement for compensation, such a state of things could never have arisen; not only the tenant himself would have been benefited, but the reversioner would have had a good estate to receive, instead of that mischief happening which the witness describes. Now, gentlemen, I trust I have said enough to make myself understood with regard to this subject. My object has been simply to point out that there are means in this country whereby a large additional employment of labour can be obtained, even through the better cultivation of certain portions of land already under cultivation, provided we give compensation to the tenant for employment, or security to his capital. I may, perhaps, be met by the objection that, supposing all the existing tenants had compensation granted to them, there are many of them who have not capital to carry out my object. I feel convinced, however, that if security were given, capitalists would be found to engage in the work of cultivation; and I am not prepared to state that, as a general rule, it would be at all necessary that the present tenant should be turned out to make room for another. I know there is a clanship which would operate against such a result. Evidence has been given, by a surveyor from the north of England, in which he states specifically that he knows that such is the family attachment which prevails among farmers in his neighbourhood, that, if they had security, that attachment would induce them to advance their money to those who were related to them; but that, at the present moment, a tenant having nothing to give as security—having no lease which he can assign, and no security of any other kind to offer, he is unable to obtain pecuniary assistance. I think that such a state of things tends to sever the nearest connexions. We will suppose the case of three brothers, one engaged in trade, and another in farming, while the third is a capitalist. The tradesman comes to his brother, the capitalist, and says, "I want you to lend me some money." The reply is, "Well, what security can you offer?" And then the brother rejoins, "I can give you the security of my stock." Here there is a tangible security. But let the farming brother come for

the same purpose, he has no security; the security of his stock is not worth a penny, for his landlord comes down upon that first of all: he has, in fact, nothing which he can offer as security for repayment under existing circumstances. But if he had compensation for outlay secured to him, he would have at least the security of that which he had expended on the farm, and that would be sufficient to attain his object. I am persuaded that by the means which I have pointed out increased employment would be given to the labourer, combined with, and arising out of, protection to the capital of the tenant. Let protection be given by a lease if it can be done; if not, let it be given by means of compensation; so that in the event of the tenant being obliged, under any circumstances, to quit, he may be enabled to enjoy the benefit of the improvements which he has effected. I hope the day will come, ere long, when we shall get even beyond that, and when it will not be necessary to adopt the course which was, I am sorry to say, adopted on the estate of a nobleman who was called the "tenant farmer's friend," and who, I doubt not, intended to be so. I hope the time will come when we shall not witness the spectacle of a widow and her family being turned adrift because the head of the family has been taken away. I trust that a spirit will be exhibited by landlords which will enable us to give them that credit for kindness of feeling which they do not hesitate to take, and that the "good time" will come when the example of Lord Yarborough will be generally adopted (cheers). I heard, with the highest satisfaction, not long since, that that nobleman has at the present moment farms which are now in the hands of trustees for very young children, and which will be managed until they come of age with a view to their succeeding to them. These are traits of character of which we cannot but approve, and I see no reason why the example should not be followed by others. Let such a course as that pursued by Lord Yarborough be generally followed—let a sound and liberal agreement be offered to the tenant-farmer—and I feel persuaded that there is yet sufficient energy and elasticity in the British farmer to enable him to bear up against those difficulties which are at the present time so heavily pressing upon him (cheers). Gentlemen, I have now—as I promised at the outset—attempted to place the subject before you in the best manner in my power, and though I have done it so imperfectly, I have no doubt that those who follow me will be able to treat the subject in a more effective manner.

Mr. EVE said he felt bound to offer his meed of thanks to Mr. Shaw, for the elaborate, conclusive, and satisfactory manner in which he had brought this question forward. He trusted that any public capacity which he (Mr. Shaw) might occupy would always be filled in a satisfactory manner, as he performed whatever he undertook in that club-room, and that, if at a future time it should be his fortune or his fate to offer himself to the notice of the public of an English county, the broad portals of that county would be open to receive him (cheers). With regard to the question before the club—that of the employment of the labouring poor—Mr. Shaw had

entered into great detail to show how the poor might be benefited. He (Mr. Eve) would not take so much a different view of the subject, as another view. He would ask the club to consider what relation the poor man sustained to themselves. He was the bulwark of the nation—the mainstay of the public—the mill-horse of the team; it was he who created their necessities, their comforts, and their luxuries, and without him they could not have them; he was their soldier, their sailor, and their protector. On all these accounts it behoved them to endeavour, as far as possible, to improve his condition. They were told by a great lawgiver, that the poor should never cease out of the land; and again, by a greater, "the poor ye have always with you, and, if ye will, ye may do them good." He was happy to see present on this occasion men of great intelligence and knowledge on the subject of farming, from different counties in England; it showed that the subject was one which excited interest among those who soared higher than many others in regard to farming-operations. He thought that Mr. Shaw had said enough on the general question. He would himself state one or two practical facts which had come under his own notice with regard to the employment of the labourer. In the neighbourhood in which he lived farmers were not generally so considerate towards labourers as could be desired, as shown by the circumstance that they did not employ so many labourers per 100 acres as they ought to do. He had lately gone through a district, and being a poor-law guardian of the Orset Union, he had the best means of information. On Thursday week last it was lamentable to see the number of able-bodied labourers who came before the board to ask for relief. Among them were a number of men who had left a farm of 600 acres. When asked why they had come there? they replied "Master won't employ us." There were a number of them in succession, and they were all attached to one farm. He (Mr. Eve) asked them if their not being employed was owing to any misconduct of their own? They replied that it was not. He then asked what was the number of labourers employed on the 600 acres of land, and he was surprised to find that there were not more than 6 men. Such a statement was almost incredible; but it was confirmed by repetitions of the question. How was it possible for such a state of things to continue? Or how could the individual who occupied that farm lay his head on his pillow at night, and feel that he was doing his duty to his fellow-man? The remarks made by members of the board on the occasion were not of a very mild character, and he was happy to say that last Thursday the scene was not repeated. A statement of what had occurred before the board was carried, he believed, to the master, and he set the men to work. He hoped that there would not be many such cases to report. Confident he was that such conduct was not consistent with that spirit of charity which was to be expected from the employer towards the labourer. There was one remarkable feature in the case to which he had referred. A man was asked by a guardian, "How many children have you?" the reply was "Four." He was then asked, "how many loaves

could you eat weekly? and he replied, "Fourteen or fifteen easily." The guardians out-stepped the law in the case of these men by giving them orders for out-door relief. They made the case a special one, and having reported what they had done to the poor-law commissioners, it was confirmed by those gentlemen, though they were told that such a course must not be repeated. He was glad, however, that such a precedent could be appealed to by other guardians, who might have men brought before them for out-door relief under similar circumstances. In this case the man who said he and his family could eat 14 or 15 loaves, received an order for 8. Before he applied for relief he had exhausted all other means. He had strained the baker and every tradesman connected with the hamlet or village, and he could not obtain any more, and therefore was obliged to come before the board. This gave rise, however, to an important question, viz., the tendency of such things to check the demand of the consumers (Hear, hear). If they went through the length and breadth of the land, how many cases would they find in which consumption was similarly checked? And what was the consequence of checking consumption? Who suffered as farmers did for the want of consumers? To look at the article of meat alone, it appeared that Manchester in the year 1835 consumed 40 per cent. more meat than in 1842; again in 1847 there were in this country, 1,678,000 more quarters of corn consumed than in 1848; that between the two periods, although emigration was going on to an alarming extent—for he considered it alarming—there should be a difference of 5,000,000 quarters of corn appeared to him very startling, and it was such checks to consumption which as farmers it was their interest to prevent. In the neighbourhood in which he lived, he had taken particular care to ascertain the extent to which labourers were employed, and he found that many farmers farmed land, which was equally good as his own, with only two men to every 100 acres. There was nothing to compel them to such a limitation. Applying his observations to the views stated by Mr. Shaw with regard to security being given to tenants, he had no doubt that if that gentleman's object were accomplished 7, 8, or 9 men per 100 acres would be frequently employed; supposing there were only 6 to every 100 acres, the change which would be thus effected would have a most important influence on society. Statistical accounts shewed that there were only at this time $3\frac{1}{2}$ men, on an average, employed. If they could double the number, the influence on consumption would of course be proportionably great. There was a statement he had seen in one of the local newspapers a short time ago, in which a gentleman had said, at a meeting of a great society, that he had already discharged five agricultural labourers, and intended to discharge four more on the following Saturday night. He (Mr. Eve) would have given him much more credit for liberality and charity and sympathy if he had said that he was going to add nine to his present number; for it was far better to have their labour than to support them out of the union rates.

Mr. BEADEL rose to order.

Mr. EVE said he was merely showing the influence of checked consumption on the condition of the labourer. He would not, however, take up much of their time. Mr. Shaw had traversed over the ground, and shown in so many instances where the labourer could be usefully employed, that he could only say he fully subscribed to all that that gentleman had advanced, and would leave it to others to fill up better than he had done what Mr. Shaw had left open.

Mr. W. BENNETT rose, and said he had not intended to have troubled the club with any remark of his after the able and very satisfactory manner in which Mr. Shaw had brought the matter before them, he having in his (Mr. Bennett's) opinion pretty well exhausted the subject; although he should much like to have elicited, even from Mr. Shaw, how he considered the tenantry of the country on our high-rented and highly-taxed and tithed lands could manage to compete with the untaxed labour of other states (Hear, hear). But what more particularly brought him upon his feet were the unguarded, and, in his opinion, very indiscreet observations of the gentleman who had just sat down (Mr. Eve). He seems to intimate that boards of guardians had a right to interfere as to how many labourers a farmer ought to employ, and that in these free-trade times too, when our Legislature has adopted as a maxim, without reference to what is to follow, the right of buying in the cheapest and selling in the dearest market. And yet, forsooth, if a poor farmer, finding his money will not hold out on the Saturday night, thinks proper to lessen his number of labourers, his conduct is to be the subject of animadversion at the board of guardians, and the discharged labourers are to be brought up and hear their former master abused, because he fancies he knows better than other people what labour he can afford to employ. A more preposterous proposition he had seldom heard advanced; and he hoped for the credit of this club it will lend its sanction to no such monstrous abuse (cries of Hear, hear). Mr. Eve may be, and doubtless is, a very humane and excellent guardian; and it is very true that it is a public evil when consumption is checked by the poor being thrown out of employment, and he (Mr. Bennett) would be the last man to sanction a parsimonious system in the employment of labour. But who does not see how many considerations this question involves, and how impossible it is for this club or any board of guardians to determine what labourers a farmer should employ without knowing all the peculiar circumstances of the man's holding? In the cases to which Mr. Eve has adverted, for aught this club can tell, some of those farmers may have the last shilling wrung from them in the shape of rent; and now that the value of their produce is gone down from 20 to 25 per cent. they may have no confidence that, while there is anything left upon the farm, any less sum than they have contracted for will be accepted by the landlord; whereas in many cases the defalcation in the farmer's income will cover the whole labour-account of the farm. How then, when the means of giving employment are taken from the farmer, is he to save himself from inevitable ruin if his outgoings are to be kept up to the former state of things (cheers)? Besides all which, on what principle now-a-days can there be any interference with quantum of labour a farmer shall choose to employ any more than a manufacturer? What would be thought of a board of guardians at Manchester or Stockport who, having various applications for relief from a certain manufacturer having thought proper to lessen his hands, they were to summon these discharged hands to give evidence as to how many their master had still left in

his employ? (Hear.) Or if when his business was no longer yielding him a profit, he should think fit to close his mill altogether, which he may do, and send his operatives for their maintenance to the land, and the remaining factories still in occupation? He (Mr. Bennett) could not therefore hear these reflections (he had almost said abuse) cast upon his brother farmers, under their present circumstances, without rising to defend them from such an unwarrantable attack (cheers). At the same time he was fully aware of the moral and social evils of throwing large numbers of labourers out of employ, and feeling as he did that such must be the result very largely of the unrestricted admission of foreign corn into this country, he had all along been greatly opposed to the anti-British measure of free-trade so-called (cheers, and "Question"). He heard some gentleman from the bottom of the room call Question; he must be excused for saying that was to the question, and he denied the possibility of disussing the question before the club, "On the best mode of finding increased employment to the Agricultural Labourers of this Country," without perceiving at once the awful barrier which large admissions of foreign corn was imposing upon the employment of our own people. He had no wish to offend the gentlemen present who differed from him on this question (he knew they were but very few), but he contended, this, to all intents and purposes, was a British labourers' question—(Hear, hear)—as well as a farmers' and a landlords' question; aye, and the former far more so than the latter, because the greater portion of the defalcation in the price of farm-produce would unhappily operate to lessen very largely the wages and the employment of our agricultural labourers, and there was nothing distressed him half so much in the contemplation of this subject as the conviction that such is the infatuation of our enemies, that nothing short of the ruin of a large number of farmers, and the labourers being driven to complete desperation, will induce them to pause in carrying out their present mischievous policy, and restore to the country a wholesome state of things (cheers).

Mr. BEADEL begged to say he agreed in a few of the remarks made by his friend Mr. Bennett. The employment of the agricultural labourer was no doubt a matter of the greatest importance, but it appeared to him the want of it arose from a variety of causes, over some of which the landlord had little or no control. He might mention the want of capital amongst the farmers themselves. Nothing did more injury to the good farmer than men taking a larger quantity of land than they had the means to cultivate properly. The remedy for this rested with the farmer, and not with the landlord. Every prudent man would require security for his capital, either by a lease or a tenant-right, for which so many were contending in the present day. But game, when preserved to a great extent, prevented many taking a lease, as the covenants must be peculiar and stringent; and it was all but impossible to calculate the mischief done by such vermin, if he might so call them. Another reason was politics. The landlords possessed a very considerable influence upon the politics of the yearly tenant; and until the farmers were true to themselves, and would exercise the independence which properly belongs to the condition they occupy, they must expect to reap the fruits of their own conduct. Land undoubtedly required improvement; and as suggestive of one of the means to accomplish that object, Mr. Shaw had compared land to ground let out on building leases, and alluded to Lord Grosvenor's ancestors who let out land, on which other

people expended their money; and the present Lord Grosvenor, or his descendants, expects to reap the fruits. Mr. Shaw's suggestion was a valuable one, and the following calculation would assist the question, by explaining how much money a farmer might expend on the improvement of his land, so as to make five per cent. interest and get back his capital:—

Suppose present value to rent of 500 acres of land to be 20s. per acre	£500
When improved by draining, roads, and building, say worth 30s. per acre, or.....	750
Improved rent	250

This improved rent of £250 would be worth, so as to pay five per cent. interest and bring back the capital—

	Yrs.	£.
On a 7 years' lease	5 $\frac{1}{2}$	1,437
On a 14 years' lease	10	2,500
On a 20 years' lease	12 $\frac{1}{2}$	3,125
On a 70 years' lease	19 $\frac{1}{2}$	4,812

If the draining were reckoned at £3 per acre [Mr. Mechi, £4 10s.], a large sum would be left for the construction of roads, for the erection of buildings, and for all those improvements which so much added to the profit of the farmer. He (Mr. Beadel) was not an advocate for the tenant doing all these things: he thought the duty very properly rested with the landlord, and that instead of adding acre to acre, he would recommend them to expend their extra capital in improving the acres they possessed.

Mr. TRETHERY thought there were some exceptions to the rule. The breaking up of pasture land was very beneficial. A great deal of wood land might also be made to produce nearly treble its original income. Considerable outlay, however, was required for clearing and draining. This might be expended either by the landlord or tenant: but the most satisfactory method appeared to be, that the landlord should do it in the first instance, and let the land at a fair rental. With regard to poor's rates, it would generally be found that in high parishes there were low rates, and in low parishes high rates. Hedge rows might also be profitably thinned. Allusion had been made to the difficulty experienced by landlords through the want of capital of small tenants. He (Mr. Trethewy) thought that if the landlord were to offer liberal terms, he might readily obtain a tenant with a large capital. One great reason for the unjust competition for lands was the privilege given to the landlord of distraining for rent. If that were done away, a fair field of competition would be opened to the capitalist in farming, as in every branch of commerce.

Mr. ACROX: Mr. Chairman and gentlemen, at several of our meetings I have been an attentive listener only; but on such an important subject as the one now on the card for discussion this evening, I cannot, in justice to an honest, industrious class of men whom I much respect, consent to remain silent. I think it was Mr. Burke who said the whole profit of land arises from manure and labour. And as there seems to be a general opinion abroad that a better understanding between landlord and tenant than at present exists, whether aris-

ing from legislative enactment or private arrangement, would tend not only to a greater security in the production of food, but an increased employment for agricultural labourers, it is my purpose to consider their social condition. Mr. Macaulay says in his History of England, "The progress of civilization has diminished the comforts of a portion of the poorest classes. The peasantry in the olden time were almost free from taxation, and it was no uncommon occurrence for the landlord to pay the principal rates and taxes. The population in James the Second's time were about 5,200,000, and wages were about 6s. per week; but then money was a third more valuable, according to the comparative average of wheat than at present, and the 6s. then was equal to 9s. now; and the wages then in purely agricultural counties have not varied more than 2s. or 3s. a week. Butcher's meat, bacon, cheese, and poultry could be had for almost next to nothing; whilst clothing of every description was twice as dear, and articles of cotton four times the price they are now; sugar, soap, fuel, salt, and iron dearer; in fact, so dear was iron that there were very few agricultural implements, and, as you well know, very inefficient. The price, then, of labour, for above one hundred years past, has varied very much, according to the different districts. In Essex we find the highest wages; for when at the time wheat was 100s. per quarter labourers there earned 2s. to 3s. 6d. a day; whilst in Dorsetshire, Wiltshire, Bedfordshire, and Sussex, wages were not more than 6s., 7s., and 8s. a week. The binds in Scotland, and the bulk of England are paid in kind or with the produce of the land, according to the marketable value; and I believe Mr. Pusey mentions it amounts to about 9s. per week. Unmarried men usually obtain from £3 10s. to £5 for the half year, with bed and board. I believe, from observation, that this is the practice in Wales; whilst in Ireland, owing to a large portion of land being let to middlemen at rack-rents or at will, the farms are but badly cultivated, few labourers employed, and wages not higher than 4s. 9d. a week, and in some of the mountainous districts not more than 2s. 6d. a week. Of the physical well-being of the people of this country, compared with those of France, Germany, Italy, and Switzerland, there is a marked difference. The house accommodation is greatly superior in England over other countries. Hovels are exchanged for good comfortable dwellings in many parts; but I am sorry to say hovels of mud, with windows full of stuffed stockings and rags, are now to be seen in many of the villages of the west of England. I have seen it stated that an English labourer is supposed to consume about 2lbs. of bread and 6oz. of meat a day; whilst a French labourer consumes 1lb. of the former and 1½lbs. of the latter. Mr. Waldo Emerson, an acute observer of our manners and customs whilst in this country, on his return to America stated, at a lecture at New York:—"Englishmen are great eaters, and claim that a good supply of food is essential to health. He presents a stout, respectable, and grandfatherly appearance. Pluck is their national characteristic. The cabman, the porter, the nobleman, the bishops, and the women have it; the press runs over with it." Now,

sir, I have long been of opinion that if under the improved system of cultivation which has prevailed during the present century, landlords and tenant-farmers would devise a better method of arranging their differences when a change of tenancy takes place, and allow their tenants a more liberal construction of their leases or agreements, labour would be promoted and wages raised. We all know that in Lincolnshire, where there is a tenant-right far more extensive than in any other county, the land is better cultivated, the farmers more satisfied, and the labourers less abject. Claying, marling, liming, and boning go on to a great extent, materially improving the condition of the labourer; and there is truth in the words of the great philosopher, Paley: "I think myself that the poor demand my attention, for this plain and simple reason: the rich can take care of themselves." Therefore I hope the club will give this question the attention which it deserves, and that something may be done for all classes; for the landlord, for the farmer, and for the labourer; and that it may tend to the good of all classes of the community.

Mr. MECCHI entirely concurred with the admirable opening of Mr. Shaw, having felt the truth of his remarks by experience. He had laid out some amount of capital in improving his own land—probably double the fee-simple; but he should not have done this if he had been a tenant-farmer, without the opportunity of obtaining a very long lease, or a security for the restoration of the unexhausted portion of his improvements. He had no doubt that the same motives which actuated his mind actuated the minds of all calculating and reasonable men, with regard to the welfare of their families, throughout the country. Mr. Shaw had exhausted nearly the whole of the subject; but there was one point to which he (Mr. Mecchi) would call the attention of the meeting. It had occurred to him a few weeks ago to lay out a certain sum in the purchase of guano; but, on reflection, he found from previous experience that that sum would be better employed in removing earth from the sides of the green lanes in the neighbourhood. He felt that he should be in a much better position if that amount were expended in his own neighbourhood, in the employment of labourers, than in paying foreigners abroad (Hear, hear). Was it possible for any man who lived in a wild sort of country not to observe that, on the heavy lands, the green lanes were far too wide; that the middle of them was very hollow; and that there was, consequently, something resembling a pond? He had paid 7d. per cubic yard for digging and burning. He sincerely trusted that no agriculturists would, under the new state of things, show a disposition to discharge their labourers. As a general rule, it was not advisable to attribute motives to any one; but he was quite sure—and he made the declaration in justification of his friend Mr. Eve—that a little ill feeling towards Sir Robert Peel had caused many a poor labourer to be discharged, or at least kept out of employment.

A MEMBER: No, it is because of empty pockets.

Mr. MECCHI: The effect of employment on the morals of labourers was well worthy of consideration. He had had his eye on many a young man whom he had known to be able and willing to prove themselves good members of society. He had known them to apply for employment from farm to farm, where their demands were rejected. The result had been that, after their being good members of society, habits of idleness had grown upon them. They had been brought before the magistrates, and gone through the successive stages of poach-

ing and thieving, and sometimes something worse. They were, then, all bound to do their best to look out for natural means of employing labourers, instead of trusting to artificial sources of employment; and he was quite sure that the more labour they employed, provided they took care that it was well directed, the better would it be for their pockets (Hear, hear). It had been said that the erection of steam-engines, and so on, had the effect of displacing a larger amount of labour. That was one of the greatest mistakes that could possibly be made. It was quite clear that a man who expended £500 in the erection of an engine, with the necessary buildings and so on, invested by far the greater part of that amount in the employment of his fellow-countrymen. The coals which were constantly being consumed were obtained by labour. Whether in the case of the miner, the seaman, or the ship-builder, labour might thus be traced in all its endless varieties in connection with improvements. That observation would apply to the difference between the present system of threshing and the old one. He would not occupy any more time, except to state his belief that expenditure on the improvement of the soil in general would prove advantageous. There were some improvements which, for want of practice, were not effected judiciously (Hear); but he had no hesitation in saying that the erection of machinery and suitable buildings, the deeper cultivation of the earth, and so on, tended permanently to improve an estate, and to benefit the occupiers (Hear).

Mr. SPEARING was very glad that this subject had been brought forward in time to set landlords thinking upon it before it was too late. There were many persons who if they employed additional labourers must do so at a certain loss under existing circumstances. However much farmers might feel for labourers, it must be recollected that charity begins at home; and if they were not in a position to give increased employment, no blame could be attached to them. It was incumbent on landlords to join the tenant farmer in alleviating the sufferings and improving the condition of labourers (Hear, hear).

Mr. WOOD did not see how any one could be expected to employ a labourer without a reasonable expectation of profit: in the price which would be obtained for an article in the market lay the only inducement to produce it. No man in his senses would employ labourers in producing when the articles produced could be bought at a cheaper rate elsewhere. The cause of this want of employment was the want of remuneration—the want of an adequate price for the article produced. What Mr. Shaw had said with regard to the affording of inducements to tenant farmers to employ labour to a greater extent would not apply to the case to which he (Mr. Wood) referred. If the article to be produced could not be produced so as to be sold profitably at as cheap a rate as it could be obtained already, there would, even under the circumstances contemplated, be no inducement to employ additional labour. With regard to loans, he did not entirely agree with Mr. Shaw as to the benefit to be derived from them. To grant loans was to supply agriculturists with money, not with capital. There must be land to offer as security before any loan could be obtained; and having land agriculturists already had capital. Money was merely the circulating medium by means of which labour was set in motion. As to a tenant farmer, or any one who was engaged in the cultivation of land, taking upon himself to employ labourers with a view of obtaining profit, without any prospect of ultimate advantage, he trusted that that was an error into which they would not fall, as men of business. He deprecated the sentiment that any man was called upon, as a farmer, to do anything which would not answer his purpose in a pecuniary point of view (Hear, hear). It was the duty of the government, and not of the farmers, to

take care that labourers should be sufficiently employed. The chief means of securing employment for all the subjects of the state was a fair remuneration for what the employment produced. That was a point which must not be kept out of sight. If by any artificial means the fair remuneration were removed, employment was reduced in proportion, and, as Mr. Shaw stated, agricultural labourers would eat up the land.

Mr. RAMSEY had no doubt that every one would agree with him that it was the duty of the farmer to do all in his power to employ working men, but he thought they had over-run first principles. Labour was the capital of every working man. A working man, who could work equally well with another, started with an equal capital. That capital could only be beneficial as it was sold or exchanged. Railways had withdrawn a large number of men from agricultural employment. This, perhaps, made agricultural labourers rather scarce; but those large and prosperous undertakings, as they once were, had now become not so much the order of the day, and a great number of labourers were thrown on the old stock. These were not employed so constantly as before, consequently the poor-rates were greatly affected by it. But it was argued that this was a question of money; he (Mr. Ramsey) looked upon it in rather a different light; but he agreed with Mr. Mechi that when the price of corn was low it was not the time to do away with growing it, but to grow more by improved agriculture. So long as there was a depression in trade, the consumption of agricultural produce was necessarily thrown back; but he believed that, if the resources of this country were freely employed, agricultural produce would not be so depressed as some people thought. In some parts of England, however, these remarks did not apply. In Northumberland and Durham the labourers were paid partly in money and partly in kind. Under these circumstances, it was quite possible that considerable exertions might be made by the agriculturists at large, actuated as the members of the Club seemed to be, by feelings of compassion towards the labourer. But in many districts it would be otherwise. Farmers showed no compassion in employing more labourers than they required. In doing so they might think they were alleviating the condition of the labourer; but, if capital was not properly invested, and yielding a fair return, they could not employ labourers. It was not what they would do, but what they were able to do. Some gentleman (Mr. Acton) had referred to the condition of the labourers' cottages, but those cottages were not built when agriculture was in a low state. He (Mr. Ramsey) thought that not only labourers, but the children of labourers, should be carefully attended to, and receive the rudiments of a decent education.

Mr. SHAW, in reply, said that he had happily nothing to combat in the way of opposition, but would offer a remark on his friend (Mr. Wood's) distinction between capital and money. He was aware that that gentleman was very fond of the currency question, and on that account more particular in his distinctions on that subject than he (Mr. Shaw) was; if the landowners could get three millions of money for the purposes of drainage, which would lead to the employment of labour, whether it was called money or capital was a matter of perfect indifference (Hear, hear, and laughter). With respect to the employment of labour, and the farmer's duty in relation to such employment, he had always deprecated that sort of lecturing, which was very fashionable at agricultural meetings, coming, as it generally did, from landlords at one end of the room to farmers at the other (Hear, hear). When he had heard gentlemen speak of the duty of increasing the amount of produce, and of resorting for that purpose to artificial manures, and a large expenditure of

capital, it had always appeared to him that they were assuming a right to lecture men on that portion of their business which they understood much better than did those who lectured them (Hear, hear). He perfectly concurred in the statement that it ought not to be considered incumbent on the farmer to employ a labourer unless he wanted his services. At the same time he was quite ready to give full credit to those philanthropic gentlemen who, possessing ample means and enjoying opportunities peculiar to themselves, did all in their power to give increased employment (Hear, hear). He gave full credit to Mr. Eve for his efforts in that direction; but he could not consent to blame those who, being differently circumstanced, were unable to pursue a similar course. He was glad to find that the importance of the subject before them had been duly appreciated by the meeting; and he trusted that the discussion would have the effect of inducing landed-proprietors to think more of devising measures which would conduce to the employment of the labourer, and at the same time to their own benefit, as well as that of the public generally. He did not expect to see a decided movement in favour of tenant right until its importance was more deeply felt. The time was, however, rapidly approaching when landlords would see the necessity of it, and then they would move more energetically in the right direction. He would conclude by proposing the following resolution:—

"That the most beneficial means of providing employment for the agricultural labourer would be—

"1. The erection of suitable buildings, and the construction of necessary fences and roads by the landlord.

"2. The execution of ordinary or extraordinary drainage or irrigation, also at his cost.

"3. In the event of the landlord not being inclined to make the required outlay, the grant of a term of years and such an allowance in the rent as will compensate the tenant for the requisite expenditure.

"4. A covenant, in all cases, to compensate the tenant for unexhausted improvements at the end of the term; and in the event of yearly-tenure, of permission to remove buildings erected at his own cost, provided the landlord will not take them at a fair valuation, the period for which the tenant has enjoyed the use of them being taken into consideration."

This resolution simply involved approval of the recommendations of the Agricultural Customs' Committee upon tenant-right to which he had before adverted, and he thought he did not go a step beyond that which all enlightened landlords would be ready to concede.

A MEMBER asked Mr. Shaw whether he was not of opinion that the importance of granting leases would be more attended to in consequence of the issuing of the report of the Parliamentary Committee.

Mr. SHAW replied that he thought there would be an amendment in consequence.

Mr. HOBBS seconded the resolution. His views so fully coincided with those of Mr. Shaw that he need not long detain the meeting. He differed very much from Mr. Beadel and others, who thought that farmers were acting rightly and wisely in discharging their agricultural labourers. It had been frequently stated that evening that rent was regulated by the burdens which pressed upon the land; but he, notwithstanding that, contended that it was the duty of the tenant to employ his quota of able-bodied labourers—not only his duty to his landlord, but also to his country. When the New Poor Law Bill passed, it was not in any way doubted, when the able-bodied man was refused relief out of the Union, he would find employment amongst the occupiers of the soil. The price of labour should be regulated by supply and demand. It was

important to observe what was paid to labourers abroad. In Poland the price of labour was 3½d. per day; in Russia it was 5d.; in Germany and France 7d.: therefore he contended that, although farmers were in duty bound to employ their labourers, it was but an act of justice to themselves to get them as cheap as possible. The question before them was one of vital importance—perhaps more so to the landlord than to the tenant-farmer. It was the landlord's duty to see that his land was properly cultivated, and that the labourers belonging to it were fully employed; but where a man did not give his tenant full scope for the investment of his capital, by security of tenure, by security for his money, or by tenant-right, or by all of these, he was not carrying out the golden rule, that "Property has its duties as well as its rights."

The CHAIRMAN, in putting the resolution to the meeting, said that he did not agree with the statement respecting the condition of the cottages so far as Lincolnshire was concerned. As a Lincolnshire man, he could say that not only were there splendid dwelling-houses for the farmers, but highly respectable cottages for the labourers. But in the West of England, where he had been located for the last twelve months, things were different. In Lincolnshire he was in the habit of seeing a man get 12s. a week, but now he only saw them getting 8s. or 9s.; and therefore Mr. Shaw had done well in directing attention to the subject of labour. Labour must be as marketable as anything else; farmers must go out on Monday morning, and purchase their labour as cheaply as they could. Although cast on the hills of Exmoor, of which he had undertaken the cultivation, he did not despair of eventually succeeding. But he thanked Mr. Shaw more particularly for the idea of parties taking the land for a number of years, and (as it were) redeeming it on building leases.

A vote of thanks to the chairman having been passed, the discussion ended.

LONDON FARMERS' CLUB.

MONDAY, MAY 7: MONTHLY MEETING OF THE COMMITTEE OF MANAGEMENT.

Present: Messrs. J. Beadel, W. Bennett, W. Cheffins, W. Fisher Hobbs, W. Hutley, C. W. Johnson, T. Knight, J. J. Mechi, J. C. Nesbit, W. Shaw (of the Strand), R. Smith (Devon), R. B. Smith (Edmonton), J. Thomas, H. Trethewey, J. Tyler, and Owen Wallis.

T. KNIGHT, Esq., in the Chair.

The minutes of the last meeting were read, confirmed, and signed by the Chairman of this day.

The following gentlemen were elected members of the Club:—

C. R. Cundell, Weston Farm, Andover, Hants
R. F. Jennings, Bideford, Devon
E. W. Johnson, Chichester, Sussex
J. P. Ley, Bideford, Devon
J. Parsons, North Stoneham, Southampton
R. Roper, Chichester, Sussex
H. Self, Martin, Great Bedwin, Wilts
H. Wolf, Park-hill Farm, Andover, Hants
R. E. Yelland, Bideford, Devon.

Some other names of gentlemen proposed were read for the first time.

The following works were reported as presented to

the Club, and the usual vote of thanks passed to the donors of them:—

"The Rural Encyclopædia" (Parts in continuation); by Messrs. Fullarton, the Publishers.—"The Farmer's Magazine" (in monthly numbers); by the Editor.—"The Sporting Magazine" (in monthly numbers); by the Editor.—"Facts for Farmers on the Cultivation of Maize;" by the Author.—"Proposed Measures for the Removal of National Distress" (published in 1827); by Mr. A. Scott, the Author.—A pamphlet "On the Agricultural Value of Sewer and other Drainage Waters;" by Mr. Cuthbert Johnson, the Author.

The following Members were chosen as a Sub-com-

mittee, to make the necessary arrangements for the Anniversary Dinner of the Club, to take place at Greenwich, on Tuesday, June 5, the day following the next Monthly Meeting:—

J. Beadel, W. Fisher Hobbs, C. W. Johnson, T. Knight, W. Shaw (of the Strand), and Robert Smith.

On the motion of Mr. Fisher Hobbs, seconded by Mr. Trethewy, it was resolved—"That the Secretary be requested to make out a list of all Members in arrear of subscription by the next Monthly Meeting, in order to enable the Committee to take proceedings for the recovery of the same."

M R. L A W E S A N D T. L. C.

BY A LINCOLNSHIRE FARMER.

Public attention has of late years been called to many controversies on agricultural subjects. It may probably, however, be safely affirmed that very few of these have equalled in interest or importance those called forth by Mr. Lawes' papers on "Agricultural Chemistry," inasmuch as the conclusions there arrived at and discussed seemed generally to justify the practice of those looked upon as the best farmers, and also to be themselves justified by the results of a long, laborious, and carefully conducted course of experiments. In other words, Mr. Lawes had apparently given to the methods most commonly adopted amongst good farmers that scientific support, the want of which had previously left them almost defenceless against all kinds of novelty and innovation.

Papers have now appeared in this magazine, however, throwing a doubt on the *honesty* not only of the deductions, but of the experiments themselves of Mr. Lawes; and though only one important point is combated by the writer, yet a well founded and fairly supported attack of this nature upon a part must be admitted to affect the degree of reliance which should be placed upon the whole; and it therefore becomes very desirable to ascertain whether the one in question can be rightly considered to possess this character or not. The perusal of the following passages, extracted from the writings of Mr. Lawes and of T. L. C., (and placed in opposite columns for convenience of comparison,) will, it is thought, enable the reader to form a decided opinion upon this point, and tend thereby materially to assist him in determining the degree of influence which the attack of the latter should have on a belief in the statements of the former.

PASSAGES * EXTRACTED FROM PAPERS IN THE FARMER'S MAGAZINE, ENTITLED "REMARKS ON LAWES' PAPER ON AGRICULTURAL CHEMISTRY." BY A FARMER.

The Farmer's Magazine.
January, 1849.—Article by T. L. C.

I. Page 4: "1st. It has already been pointed out that Mr. Lawes considers that alkalis are an unnecessary ingredient in artificial manures; and in his reply he endeavours to show (2nd) that in the original paper he recommends organic manures, such as rape cake, to be used along with superphosphate. He quotes the following sentence† from his original paper (page 511), that 'the mixture of mineral manures with organic gives the best result, as far as development was concerned.' Why did he not give a

PASSAGES * EXTRACTED FROM PAPERS ON "AGRICULTURAL CHEMISTRY," IN THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY, AND ON "THE SOURCES OF THE ALKALIES IN AGRICULTURE," IN THE FARMER'S MAGAZINE. BY J. B. LAWES.

Journal of The R. A. S.
Vol. VIII.—Article by Mr. Lawes.

I. Page 511: "We observe, too, that whilst under the influence of this DEFECT OF RAIN DURING THE FIRST PERIOD OF THE SEASON, both the weight of bulbs and number of plants is much less where rape-cake is used ALONE than even where no manure at all is provided; yet the admixture of mineral manures with the organic gives the best result in the series, so far as development is concerned."

Page 562: "It must, however, be clearly understood that the bulk of an agricultural crop of

* The italics in every case are the same as in the originals. The capital letters are my own, and mark those sentences to which special attention should be directed.

† And *eleven others* to the same effect.

little more from the same page, where he says that RAPE-CAKE 'LESSENS BOTH THE WEIGHT OF BULBS AND NUMBER OF PLANTS?' It is rather difficult to reconcile these two opinions.

"Artificial manures may contain the following substances:—

"1st. Phosphoric acid.

"2nd. The alkalies, as potash and soda.

"3rd. The earths, lime and magnesia.

"4th. Organic matter, as rape-cake.

"(a) The latter, Mr. Lawes says, 'lessens both the weight of bulbs and number of plants.'

"(b) Magnesia gave no increase of crop when tried along with superphosphate.

"(c) Potash and soda have been shown by several quotations to be, in Mr. Lawes' opinion, unnecessary, and, like the rape-dust, always injurious to the young plant.

"(d) There is, then, nothing left but phosphoric acid and lime, or *superphosphate*. It is in vain for Mr. Lawes to reply that he does not recommend this substance; for every thing else is in some part of the report depreciated, and some evil from their use pointed out. It therefore becomes an interesting subject of enquiry, with which of the substances used as manures Mr. Lawes is 'commercially connected.'"

The Farmer's Magazine,
January, 1849.

II. Page 6: "The only reply Mr. Lawes makes to the writer's assertion, that he was not justified in his conclusions from his experiments with alkalies, because he tried them along with *bones*, and in

turnips depends materially upon the amount of organic matter contained in the soil, WITHOUT WHICH THE DEVELOPMENT OF THE POWER OF GROWTH BY MEANS OF THE PHOSPHATE WILL BE UNAVAILING.

Pages 560, 562-3: "Having, therefore, shown that to obtain heavy crops of bulbs large amounts of carbonaceous matters should be supplied to the soil, and that dung is the cheapest source of this substance, the question arises, What are the next best substitutes for it? Dung is an article in which our farm-yards are very apt to be deficient."

"Rape-cake, as containing a large amount of organic matter, is an admirable manure for the turnip as a substitute for farm-yard dung; it may be employed in conjunction with superphosphate of lime—the former being sown broadcast, and the latter drilled with the seed. Peruvian guano, which contains a large quantity of ammonia as well as phosphates, is found to be a much more certain manure for turnips in Scotland, where the fall of rain is large, than in those parts of England where it is much less."

The Farmer's Magazine,
December, 1848.

II. Page 481: "Now, it so happens that the statement of the manures of this *plot 18* occurs *nine times* in the course of our paper—namely, at pages 517, 518, 519, 520, 521, 529, 540, 545, and 547. On reference

comparison with superphosphate, is, that it is a misprint, and that he meant to try them along with superphosphate. This is a nice way of getting out of it, and is his reply to that part of the discussion."

to these pages, it will be seen that, in *eight cases out of nine*, the manure of No. 18 is stated to be compounded of calcined bone-dust and sulphuric acid (or superphosphate of lime) and alkalies, and not of simply bones and alkalies; whilst once only—namely, at page 527, from which our critic professes to quote—the sulphuric acid is omitted! a mere oversight, which we think is more to be regretted than wondered at, considering the vast amount of tabulation occurring in our paper."

* * * * *

"But let us point out another fact bearing upon this 'No. 18,' by which the judgment of the reader, which we will suppose to be still wavering, perhaps becomes more settled. The *second selection* is said to be taken from page 517, and No. 18 is again represented as containing *no sulphuric acid*; though, on reference to the original, at page 517, it will be found that it is there stated that 420 lbs. of sulphuric acid were employed in the manure; and, as will presently be seen, the attention of our critic was specially paid to the statement of manures at this page."

The Farmer's Magazine,
March, 1849.

Journal of the R. A. S.
Vol. VIII.

III. Page 199: "I have been accused of misrepresenting Mr. Lawes' views respecting the necessity of supplying alkalies in manures. If the following expressions do not mean that they are an unnecessary addition, they have no meaning whatever; 'The employment of potash, soda, magnesia, and silica, has been suggested by chemists from an imperfect

III. Page 258-9: "If there be any truth in my experiments all hope of obtaining annual crops of corn by means of mineral manures must be for ever abandoned. The employment of potash, soda, magnesia, and silica, has been suggested by chemists, from an imperfect knowledge of PRACTICAL AGRICULTURE. Having found these substances in the ash of the plants,

knowledge of AGRICULTURAL CHEMISTRY; and should a farm exhausted of its alkalis to the utmost possible extent come into the possession of a man of capital and experience, he may in a few years bring it into high condition, without imparting to it a pound of potash or soda' (Mr. Lawes' paper, p. 258, vol. viii., Jour. R. A. S.)

"Mr. Lawes, in his reply to my remarks, has endeavoured to show that he does not especially recommend superphosphate of lime. What then is the meaning of the following? 'The only mineral which, under a proper system of agriculture, it is necessary to restore directly to the soil is phosphate of lime' (Mr. Lawes' paper, p. 259).

"In support of my own view of this question, I have quoted from various sources, to which various replies have been made; but I certainly think that if I can show that Mr. Lawes himself, in one part of the papers before us, has advocated precisely the rule which I have endeavoured to lay down, and also that his staunchest defender, Professor Way, has also done so—if, I say, I can do this, I may surely conclude that the question is settled.

"After quoting such a very intelligible sentence as the above from Mr. Lawes' writing, respecting the value of phosphate of lime, and the non-utility of the alkalis, it is rather strange to quote from the same author in support of the opposite opinion.

"At page 259 it is said: 'As long as bone-dust, superphosphate of lime, and guano will produce a good crop of turnips,

they have concluded that the soil cannot supply them in sufficient quantity..... Take the case of a soil which has been in the hands of a farmer who has removed from his land successive grain crops, and who has also sold part of his straw and hay, bringing back perhaps a little soot, or some light manure. This system would exhaust the soil of its alkalis to the greatest extent possible. Should it then come into the possession of a man of capital and experience, he may in a few years bring it into high condition without imparting to it a pound of potash or soda, though the course he would probably adopt would indirectly increase the available sources of those substances.

"The quantity of alkalis taken up from the soil by a crop of turnips is very great, and yet the artificial manures most commonly applied to grow those turnips contain but little and often no alkalis whatever. As long as bone-dust, superphosphate of lime, or guano, will produce a good crop of turnips, the farmer need be under no apprehension of his soil being destitute of alkalis. The only mineral which, under a proper system of agriculture, it is necessary to restore directly to the soil is phosphate of lime."

Page 242: "The effect of superphosphate of lime upon wheat has been the subject of many experiments, and in some instances it has been employed with remarkable success. It becomes therefore of importance to enquire what was the probable cause of its in-

the farmer need be under no apprehension of his soil being destitute of alkalis.' BUT, 'BESIDES PHOSPHORIC ACID AND LIME, THE ASH OF WHEAT AND WHEAT-STRAW CONTAINS POTASH, SODA, MAGNESIA, AND SILICA; AND, AS SUPERPHOSPHATE OF LIME CONTAINS NONE OF THESE SUBSTANCES, ITS FAILURE MAY BE ATTRIBUTED TO THE ABSENCE OF THESE MINERALS IN THE SOIL' (p. 242).

"So much then for Mr. Lawes. This, testimony is not very clear; there is not so much emphasis laid on the necessary supply of the alkalis as the superphosphate. The one may be used the other must; the former seems to have been written inadvertently, the latter is seen in every page."

IV. Page 200, 201: "We now," proceeds Mr. Lawes, 'arrive at another important question—What is meant by quality in wheat?' This grain 'belongs to a class of plants proverbially characterized as yielding starchy seeds, and whose predominant peculiarity it is to yield carbonaceous substances. It is, therefore, probable that those millers who prefer a perfectly developed grain pay the highest price for that which contains the most starch.'

"Is it possible that Professor Way can pronounce the previous sentence amongst the most important which late years have given to agriculture? He cannot but know that the characteristic of wheat is the very reverse of 'yielding starchy seeds or carbonaceous sub-

utility in THIS INSTANCE. Besides phosphoric acid and lime, the ash of wheat and wheat-straw contains potash, magnesia, soda, and silica; and as superphosphate of lime contains none of these substances, its failure in this case may be attributed EITHER to the absence of these minerals in the soil, OR TO A DEFICIENCY OF AZOTIZED OR OTHER ORGANIC MATTER." In the succeeding pages Mr. Lawes proceeds to show that this failure was owing to the want of organic and not of mineral matters in the soil.

IV. Pages 234-5-6: "We now arrive at another important question—What is meant by quality of wheat? Does it depend upon the weight per bushel, or specific gravity, of the grain? and, if so, does this specific gravity bear any relation to the percentage of gluten and albumen; that is to say, to the most highly nutritive constituents of the grain? Before entering into a consideration of this subject it may be as well to state the opinions generally held regarding it."

"The following table demonstrates that the value of different samples of wheat does not depend upon the percentage of nitrogen which they contain."*

"From this table it is

* For the tables see original.

stances.' This is the characteristic of the potato, rice, and sago; the superiority of wheat as an article of food over these substances consists in the relatively greater proportion which it contains of gluten or albumen, as compared with the potato and other vegetable products of that class. It is a recognized fact that (OTHER THINGS BEING EQUAL) the more nitrogen there is in an article of food the more nutritive it contains."

"But what will the farmer think of that science which tells him that his turnip-tops are more valuable in feeding properties than the bulbs? This is another of the conclusions which have been arrived at by Mr. Lawes. That gentleman himself well remarks that, 'the contempt which the practical farmer feels for the science of agricultural chemistry,' &c. "I wonder he never thought of the 'contempt which every practical farmer would feel for the science of chemistry,' when told that though 'ages of experience' proved the turnip to be more valuable than the top, he had been during all these ages labouring under a gross mistake; though his fathers and grandfathers had fattened their cattle, and paid their rents, under the false idea of the value of turnips; though all the chemists, from Sir Humphrey Davy downwards to Mr. Lawes, had paid great attention to the subject, it was reserved to Mr. Lawes to remove the ignorance, by making the extraordinary discovery that turnip-tops

evident that the samples of wheat most approved by the miller are by no means those which are richest in nitrogen. His choice is directed to those samples which have the character of a perfectly developed grain, small, plump, and thin-skinned. But laying aside the evidence of experiment or common usage, would it not be more consonant with general principles to suppose that a class* of plants proverbially characterized as yielding starchy seeds, and whose predominant peculiarity it is to produce carbonaceous substances, should, in their most perfect state of development, be rich in starch rather than in gluten and other nitrogenous compounds? We might, indeed, expect to find the proportion of gluten and starch vary in different species of wheat, and in the same species under the effect of different climates and seasons; but the more perfectly the grain has been developed the richer in starch and the poorer in nitrogen it would become, and millers who prefer a perfectly developed grain probably pay the highest price for that which contains the most starch."

Page 257: "I have not tried the comparative feeding properties of the leaf and the bulb of the turnip; but from the much higher percentage of NITROGEN in the former, as determined by analyses in my laboratory, it may be inferred that it is much more nutritive. IT IS POSSIBLE, HOWEVER, THAT THE RELATIVELY LOW STATE OF ELABORATION OF THE CON-

were more nutritive than the bulbs."

STITUENTS OF THE LEAF MIGHT INTERFERE WITH ITS OTHERWISE EVIDENT APPLICABILITY AS A HEALTHY FOOD."

Page 552: "The fact that, notwithstanding the LARGE NITROGENOUS CONTENTS OF TURNIP LEAVES, they should only be to a small extent valued as food, doubtless arises from the large amount of matters which they contain only brought within the range of the organism, themselves as yet unorganized, and existing as saline and other changeable fluids, to which we may readily attribute a medicinal and purgative, rather than a direct nutritive effect; elaboration to some extent being, as we are aware, an important element in the condition of food for animals."

ABORTION IN COWS.—The cow is more subject to abortion than any other of our domestic animals. She is liable to this at different periods of pregnancy, from the fourth to the eighth month. Mr. Youatt remarks, what has been often observed by others, that "abortion is somewhat singularly frequent in particular districts, or on particular farms. It seems to assume an epizootic or epidemic form. Some have imagined it to be contagious. It is destructively propagated among the cows, but this is probably to be explained on a different principle from that of contagion. It has been said that the cow is an animal considerably imaginative, and highly irritable during the period of pregnancy. In abortion, the fetus is often putrid before it is discharged; and the placenta or after-birth rarely or never immediately follows it, but becomes decomposed, and as it drops away in fragments, emits a peculiar and most noisome smell. This smell seems to be singularly annoying to other cows—they sniff at it, and then run bellowing about. Some sympathetic influence is produced on their uterine organs, and in a few days a greater or less number of those that have been kept together likewise abort." In regard to treatment of abortion, Mr. Youatt directs, that if the farmer has ever been troubled with this pest, he should closely watch the approaching symptoms of casting the calf, and as soon as he perceives them should remove the cow to an apartment by herself; that he should bleed her, and that copiously, in proportion to her age, size, condition, and the state of excitement she is in; that he should give her a dose of physic immediately after the bleeding: after the physic begins to operate he should administer half a drachm of opium and half an ounce of sweet spirit of nitre. Give the cow gruel, and keep her as quiet as possible. By these means the irritation may be allayed, and the cow may go her full time. But if the discharge is fetid, "the natural conclusion will be, that the fetus is dead, and must be got rid of as speedily as possible. Bleeding may even then be requisite, if much fever exists. In other respects, the animal must be treated as if her usual time of pregnancy had been accomplished." He further directs as a means of preventing the formation of this habit among cows, that as soon as the fetus can be got rid of it should be immediately buried deep, and far from the cow-pasture: A cow that repeatedly aborted should be fattened and slaughtered,

* A botanical class, evidently, and including rice.

NEWCASTLE FARMERS' CLUB.

DECEMBER MEETING, 1848.

The chair, on the motion of William Anderson, Esq., J. P., was taken on Saturday, December 2, at the monthly meeting of the club, by G. H. Ramsay, Esq., J. P.

Several vegetable donations were on the table. Potatoes, and flour and bread from mummy wheat, from Mr. Alderman Archbold; turnips grown at Heaton, from Mr. Alderman Potter; black barley in the ear, from Mr. Rogerson, of the Crown and Thistle; specimens of New Zealand flax, from Mr. T. L. Colbeck; beet-root from Mr. Weeks, of Ryton; turnips, (fine, well-shaped bulbs,) from Mr. John Redhead, of Walker; and turnips, kohlrabi, and beet-root, from Matthew Bell, Esq., M. P., of Woolsington. A sample of beet-root, grown in Mr. Bell's garden, attracted particular attention, its weight being 21lbs.

Mr. T. L. COLBECK, of East Denton, author of the Prize Essay on the Agriculture of Northumberland, and of similar compositions, read a paper on the question, "WHAT HAS SCIENCE DONE FOR US?"

It is (said he) with some hesitation that I introduce the subject of this paper to your notice. It requires no little courage to face the prejudices, so openly expressed by farmers, respecting the application of science to agriculture. They seem to think, that because no progress has hitherto been made in this direction, none ever will be; and they ridicule the idea of any one but a farmer being able to give them advice in the management of their farms. Whilst I admit that their conduct in this respect is not without excuse, seeing the character of much of the advice given to farmers by scientific men, yet that they should continue to despise the labours of those men altogether is nearly as foolish as the sailor would be who ventured across the Atlantic without a compass. He might possibly arrive safe in America without his compass, and agriculture may make progress without the assistance of science; but there must be, at the least, a great loss of time, to say nothing of the many unavoidable mistakes which will assuredly occur in both cases. It is with the hope of removing this prejudice that this subject is introduced to you to-day; and in order that I may succeed in doing so, I will, in the first place, point out a few of the benefits which the arts and manufactures have derived from the application of science. These have been so numerous, that the chief difficulty I have found has

been in the selection; and they certainly contrast most unfavourably for the farmer, with the assistance he has derived from the same source. When we read the history of England under the early Sovereigns of the House of Hanover, we must be surprised at the progress made by this country since the commencement of the last century. It is difficult to believe that, at that time, we procured our iron from Sweden; that we sent our webs of linen to Holland to be bleached; that we procured our printed calico from India; that a journey from London to Edinburgh occupied three weeks; that except the road leading between these two cities there were few others in the country passable by wheeled carriages; that (to come to our own neighbourhood) the road leading from here to Carlisle was then in a worse state than it had been left in by the Romans twelve hundred years before, and that the only communication to other parts of the neighbourhood was by narrow paved causeways, along which our grandfathers brought corn to market on packhorses. Such things, I say, are scarcely credible, when we now have even India within a few weeks' journey—London as near Edinburgh as Newcastle was, only five or six years ago—and Newcastle not much farther from Edinburgh than Leith to Portobello. How much of this progress is due to the application of science? A short time ago I met with a striking answer to this question. In a field near Belsay, there was pointed out to me what may justly be called the parent of our present gigantic iron trade. It was a hollow in the ground, about one-fourth of the size of this table, lined with clay and covered with slag, and had evidently been used by our fore-elders to smelt iron (perhaps for their spear heads) long before the Norman Conquest. This is indeed a contrast to our present manufactories, any one of which now produces several thousand tons per annum—indeed more than the whole country did only sixty years ago. The ironstone, from which this vast increase of commercial wealth and activity has sprung, was then utterly valueless; because the art of smelting was so imperfectly understood, that only the rich ores of Sweden could be profitably worked. This was our condition until by the pressure of the French war our supply from Sweden was cut off. The attention of scientific and practical men was immediately turned to our own resources, and means were speedily devised for smelting our own

abundant ores. The process has received successive improvements, until, by the application of the hot blast, we bid fair to draw more wealth from what was useless to the last generation than the Spaniards have ever done from their gold mines. Whilst England was reaping such benefits from the application of science, our neighbours the French were not idle, on finding themselves under similar difficulties. The English cruisers having stopped the usual supplies of kelp and barilla, which are used in the manufacture of glass and soap, a reward was offered by the French government for a substitute. This was soon discovered by a French chemist, and became the commencement of the manufacture of alkali; which is now of so much consequence to England, that when the Neapolitan government took upon itself to stop the supply of sulphur (a necessary ingredient in the manufacture of alkali), our government immediately declared war against them. The temporary difficulties our manufacturers were thus involved in, again turned the attention of our scientific men to the subject; and sources of sulphur were speedily discovered in England, which may, at some future day, place us quite independent of all foreign supplies. The manufacture of sugar from beet-root was, like the instances I have already quoted, the result of France being deprived of the usual supply of sugar from the colonies during the war. Beet has now become of great importance, and is generally a very remunerative crop in those districts where it is used for the manufacture of sugar. Many thousand acres in central Europe, and even in Russia, are now devoted to its culture. This manufacture of sugar is, in its origin and progress, entirely the result of the application of science. I might, instead of a paper such as the present, fill volumes with instances of what science has done for us, and will therefore confine my remarks to such instances as are familiar to you. Many of us have been employed in our youthful days in watering the webs of linen spun by our thrifty mothers and grandmothers, and which could only then be bleached by long exposure to the air and moisture. Near the end of the last century, a poor Swede discovered, in the course of his researches, a green coloured gas, afterwards named chlorine; and for many years after its discovery it was only prepared as a curiosity in the laboratory, until, by the continued application of scientific research, easier means for preparing it were discovered, and, finally, it was ascertained to be present in large quantities in common salt. By the use of this green-coloured gas, thus accidentally brought to light by chemistry, many hundreds of square yards (much more than any one of our industrious fore-elders could have spun in a life-time) can now be bleached in an hour.

It would be difficult to over-estimate the importance of this application. Besides these few instances I have named, I might mention nearly every process used in our cotton, silk, and woollen manufactures, as examples for what science has done for us. I can but allude to the manufacture of paper, glass, porcelain, and china, with many others, which are indebted for their present position to the application of science. I might direct your attention to some others, as electro-plating and photographic likenesses, which are indebted to science for their very existence; I might point out the many improvements and discoveries in medicine derived from chemistry; I might point to the Davy lamp, which has been the means of saving the lives of thousands; I might describe to you the electric telegraph, which is certainly the most wonderful achievement of the present day. If we had had time and opportunity for all this, still not a tithe of the instances which might have been, would then have been, brought forward; for there is not one manufactory, and there is scarcely an individual, who does not in some way or other derive benefit from the application of science to some of the every-day processes of life, in the busy, bustling world around us. It is unnecessary to say much about mechanical science, as the beneficial results from its application are obvious to all. Bonaparte called us a nation of shop-keepers forty years ago, alluding to our then extensive manufactories; but what would he now call us, when our railroads can be reckoned by their hundreds of miles and our steam engines by thousands? We may justly be proud of our late townsman, Mr. Stephenson; and his name will be remembered along with Watt and Arkwright as long as ever there is an Englishman. I do not expect that mechanical science will ever make any great change in farming, unless we can get locomotive engines to ascend and descend our hilly fields as easily as our horses; though I have no doubt but that steam thrashing machines will become more common with us, and fixed instead of moveable ones more common in the South of England. Besides this, and the knowledge of a proper shape of a plough, I see little reason to hope for improvement in farming from the application of mechanical science to agriculture.

I trust that I have now said enough to remove the prejudices which you may feel against the application of science to agriculture, by pointing out the benefits which it has conferred on the arts and manufactures. With regard to farming, I am sorry to say that I must alter the form of the question with which I began this paper, from "What has science done for us?" into, "What can science do for us?" Will it make us better farmers? I think it will; for, though the commonest workman may

perform the labour upon a farm with far more skill and success than the most accomplished scholar, or a plain practical farmer succeed better in the management of an ordinary farm—he may obtain better crops, his animals may be better fattened, and he may have at the end of the year more money in his pocket than another farmer with ten times his knowledge, but without his practical skill—who can doubt that knowledge and study will prove as beneficial and useful in agriculture as in any other art or science? I admit that many men of highly cultivated minds have failed in the practical management of a farm; but it must also be admitted that men without any scientific acquirements have as often failed. Persons do not fail half so often from their science, or from the want of it, as they do from the want of the two combined.

I have said a great deal about the recent improvements in manufactures, and it would be unjust if I, for one moment, overlooked or undervalued the many improvements which have taken place within the last sixty or seventy years in agriculture. Our progress has been very great; and yet every one acquainted with the subject must admit that much of the land under the plough would grow 20 per cent. more corn if it were properly cultivated. How has this happened? Is science less ready to assist us than our neighbours who build manufactories, sink pits, or lay railroads? We are compelled to confess that our improvements have only been the result of chance; not, as in the instances I have named in the first part of this paper, the result of knowing the *whys* and the *wherefores*. For if it can be said with truth of a physician that his profession consists in pouring medicines of which he knows little into a body of which he knows less, it is equally true of a farmer that his profession consists in applying manures of which he knows little to a soil of which he knows less. This is assuredly one cause of our deficient progress: we are yet ignorant of the *principles* of agriculture. Notwithstanding our misfortune in this respect, our progress has, however, been considerable within the last two generations. For instance, turnips are now grown to ten times the extent formerly. Persons are yet living who have ploughed in this neighbourhood with four oxen and two horses in a plough. On one farm I know in this neighbourhood the crops of corn are more than doubled since 1812. The thrashing machine is, I believe, not more than seventy years old. Bones were first used about thirty years ago; and I lately met with the farmer who first used them in Tweed-side; and, as they were then very cheap, they were applied in such quantities that the field in which he tried them has never yet forgotten their first application. These are a few out of many instances

which might be brought forward as examples of the progress which agriculture has made during the last fifty years. But so little real attention has the subject received, that the beneficial result of bones as a manure, for example, has been attributed by some to the animal matter they contain—by others to the phosphoric acid—by others to the lime—and, finally, to the power which they have, in common with other porous bodies, of absorbing and retaining moisture. Such ignorance of the very principles of the profession by which many of us have to make our bread must be productive of loss to the community—in many instances of ruin and misery to ourselves—and in all cases of deficient rent-rolls to our landlords. The improvement of agriculture, in this view of the case, becomes a question in which all are interested; and I shall now proceed to point out a few of the difficulties we are at present labouring under, and to which, I think, we can only be indebted for solutions to the joint labours of scientific and practical men. To begin with the most important.

1. Much attention has recently been paid to draining, and there has been some discussions as to the proper depth at which the drains should be placed, some advocating two feet and others almost six feet. In fact, everything connected with drains is disputed. Some people recommend that they should be filled up with clay: others recommend stones. Some drainers recommend pipes like pencil cases; and they are placed at all distances apart, from 15 to 30 feet. Now, as each advocate of these various plans carries out his own views, and as they cannot all be correct, it is obvious that a great extent of draining must be improperly executed. This should not be the case. There must be a proper depth, a proper distance apart, a proper size of tile, and a proper method of filling up the drains; and the sooner these matters are set at rest, by a well-conducted, well-arranged series of experiments, the better it will be for us all.

2. What is the reason that we cannot now grow the long potato? Science alone can answer this question, and enable us to overcome the difficulty. We have tried to get over it by raising potatoes from the seed, and the use of large quantities of manure; but we have failed.

3. Is there any remedy for the potato disease? What is its cause? Is it a temporary, or a sign of a permanent, failure? I incline to the former; but I think the remedy yet remains to be discovered, and would strongly recommend those writers in the newspapers and magazines, who are continually puffing their remedies, to try to discover the cause of the disease, before they calculate upon much faith being put in their nostrums.

4. Much of the land near us, which used

formerly to grow potato oats, will now only grow Tartar oats. What is the cause? I consider that the remarks which have appeared both in our local and in some of the London papers, reflecting in no measured terms on the farmers of Northumberland for growing Tartar oats, were exceedingly ill timed, and showed a degree of ignorance in agricultural matters by no means uncommon with the writers of newspaper paragraphs. Upon some parts of my own farm I can grow 50 bushels of Tartar oats where I could not grow 25 bushels of potato oats. Of course I should be glad to grow the latter only: it does not require much calculation to discover which is the most valuable crop.

5. My worthy neighbour, Mr. Stephenson, can grow more white wheat than I can grow brown. The answer to any inquiry respecting the cause of this, has usually been that his land is better than mine. I know it is, but is mine incapable of improvement?

6. Some farmers assert that lime hastens the ripening of corn—others that it retards it. Which is correct?

7. Lime has been used from time immemorial; yet no doubt exists but that it is many a time misapplied and wasted, and will continue to be so until more attention be paid to the subject.

8. We find that, after a certain number of years, our land will not grow red clover. What is the cause?

9. It has been ascertained that different portions of our food go to different uses in our bodies. For instance, one part goes to form bones—another part goes to keep up the animal heat, or the formation of fat—and another part to the formation of muscle or flesh. When the properties of the various substances used as food are understood, we shall then know what kind to give to our young or growing animals—what kind to give to our fattening animals—and what kind to give to our work-horses or milk cows, so as to obtain the end we wish, without loss to the animal or waste of food. I have mentioned that the same part of the food goes to support the animal heat and the formation of fat. Does not this point out that the common arrangement of feeding cattle in open folds is the worst possible, if we wish to get the full benefit of our turnips, &c.? I look upon the attempts which are now being made to steam the linseed and turnips, and to crush the corn, and to chop the straw and hay, with great interest; and I am satisfied that they will be universally adopted.

10. Every farmer has suffered from the ravages of insects on his turnips and his wheat—indeed, on every crop he grows; and yet, from our utter ignorance of the habits of these insects, our attempts to avoid the losses they cause oftener fail

than succeed. Some time ago, the Swedish government sustained serious losses in the royal dockyard, by a small insect boring into the timber, and thus rendering it useless. A scientific man was requested to investigate the matter: he studied the habits of the insect, and recommended that the timber should, at a certain season, be covered with water. This was a perfect cure. How do we know, if similar attention were paid to the insects living on our farm produce, but a similar easy cure might be discovered?

11. There is little doubt but that every crop requires a different manure. How much more information have we on this subject than the Egyptians had when they put their wheat into the mummy cases, three thousand years ago?

12. Bare fallows have, by the cultivation of the turnip, been nearly banished from light soils. Can we not lessen their extent on strong clays?

13. The numerous experiments which are tried all over the country are rendered nearly useless from the want of some recognized classification of the soils. Such words as marls, clays, loams, &c., &c., convey no information to be depended on. I think we shall here be indebted to geology, as soils are well known to be derived from the rocks beneath or near them.

But I must conclude, or I fear you will be discouraged by such a black list—which might, however, have been extended much further. What, then, has not science to do for us? How are these difficulties to be solved? Certainly not as Professor Johnston wishes us to do, by leaving scientific farming to scientific men. Nor will Sir Robert Kane help us, by saying that all fallows are synonymous with an ignorant and improvident agriculture. Nor will we look for assistance from Dr. Thomson, as he recommends us to cart our newly-mown grass into sheds erected for the purpose, and spread it over floors heated with flues to convert it into hay. This he considers an improvement over our present plan! Nor can we even look to Liebig; so signally has he failed to enable us, as he promised in a circular, to grow white crops, one after another, as long as we wished. In fact, we must look to ourselves, and to institutions of our own creating and supporting, as the only source of assistance. The Royal Agricultural Society and the Highland Society must take the lead. These have done their duty nobly so far: they have attracted attention to agricultural matters, and undoubtedly tended to raise the character both of farmers and farming. But I think cattle are now fat enough. We have seen what can be done; and if it will pay us, we will all try to make our bullocks as round and our pigs as blind as those exhibited in the shows. The Highland Society seem to be of this opinion, for

they intend only to have their show once in three years, instead of annually, and purpose devoting some portion of their funds to the advancement of education amongst farmers. So far so good: I trust this is but the commencement, and that they, with the English Society, will see the importance of some of the questions I have proposed, and offer such inducements, either honorary or pecuniary, as will justify a man in devoting a sufficient time to their solution. Those only who have paid attention to such subjects can know the labour involved in such questions. They can only be settled by the scientific and practical man working together; and without some such encouragement as I have named, they are beyond the reach of any private individual.

This, then, is what I think science can do for us. We are indebted to Liebig for suggesting the preparation of superphosphate of lime; and it is the only thing science has hitherto done for us. What a field is here opened out! If the powers of the steam engine be unlimited, who can say that so many quarters of wheat and so many acres of turnips are all we can grow!

One word of apology for farmers, and I have done. If they have not made the progress they ought to have done, it is because they have had difficulties to contend with unknown to the manufacturer. The weather and the seasons are uncontrollable agencies. Farmers' Clubs are also of recent origin. Besides these disadvantages, there is also one more preliminary which must be perfectly settled before the farmer has a chance of reaping the full benefit of scientific research. It is not a Tenant Right Act—at least not in Northumberland; and it certainly is not a percentage return on his rent in a bad year. It is not one nor both of these combined. It is a LEASE. This brings me to a subject on which I may, at some future time, address you.

If I have spoken too sanguinely of the benefit derived from science, or too discouragingly of our position, you must excuse me, because I am a farmer and a farmer's son, and, like the most of you, dependent upon my farm for my position in life; and I trust you will receive my remarks with the same friendly spirit that has hitherto characterized the pleasant meetings at the Newcastle Farmers' Club. (Applause.)

The CHAIRMAN said that every member must have heard with pleasure the paper just read by his excellent friend, Mr. Colbeck. The only complaint which he had to make was that it was not long enough. He rather differed from him, however, on one point. Science had done a ^{very} great deal for practical agriculture; and Mr. Colbeck, he thought,

hardly valued sufficiently the services of scientific men. Sir Humphrey Davy, whom he had not named, led the way with his work on Agricultural Chemistry. Liebig and Johnston followed, and had done good service. As to fully carrying out their theories, that might be impossible. The same results could not be obtained in the field as in the laboratory. The rain, and the atmosphere, and other influences, affected the operations of the husbandman; and he could only approximate in practice to the experimental deductions of the chemist. But every farmer had now learnt the folly of applying the same manure to every crop. He knew that what might be very successful with turnips would fail with wheat. These and other lessons had been acquired by the practical farmer; and no better proof could be afforded of the advantages arising from the combination of science with practice, than the production of the present admirable paper, the fruits of Mr. Colbeck's scientific study and practical experience. (Applause.) It would get into print, and be read in all parts of the country; and he thought it very probable the Club would hear of it again. Already the Newcastle Farmers' Club had got a name for producing good papers, and Mr. Colbeck's would tend to increase their reputation. (Applause.)

MR. JOSEPH LAYCOCK agreed with the Chairman that they were deeply indebted to Mr. Colbeck for his valuable paper. It was quite true that science had not fulfilled all that it had promised; but the farmer himself was often to blame. He should make greater use of his own observation and learn to adapt the lessons of science to his own peculiar circumstances. Mr. Colbeck had spoken of draining. To apply one rigid rule to the drainage of the soil was impossible: it could not be done with advantage. Soils and situations differed, and so must the mode of draining. One soil required that the drains should be carried down from six to ten feet: for another, a depth of three feet would suffice. There were certain recognized principles of agriculture, but the modes of their application must vary with circumstances; and he who best adapted science to situation would be the most successful farmer.

MR. WEEKS showed how science, in several instances, had conduced to the improvement of agriculture.

MR. ANDERSON moved a vote of thanks to Mr. Colbeck. It was creditable to the Club that one of its members should have produced so excellent a paper. Great improvements had been made in manufactures of late years—as, for instance, in writing paper, now so much better and cheaper than it was in his younger days; and although

agriculture might not have kept pace with manufactures, it was nevertheless a fact that the farmers of England now fed twice the amount of population that they did in the early part of the last century. There was much remained to be done, but a great deal had undoubtedly been done already. He had

great pleasure in moving a vote of thanks to Mr. Colbeck.

The motion was seconded by Mr. W. STEPHENSON, and carried by acclamation; whereupon Mr. COLBECK returned thanks, and the meeting broke up.

T E N A N T - R I G H T .

REPORT FROM THE SELECT COMMITTEE ON AGRICULTURAL CUSTOMS, WITH THE EVIDENCE,

(Continued.)

Evidence of the Rev. CHRISTOPHER NEVILLE.

MR. NEWDEGATE]. You are a landowner in Nottinghamshire?—I am.

Do you hold any land in your own occupation?—About 300 acres.

Have you paid considerable attention to the question of agricultural custom as it exists, and have you also considered the propriety of legislative enactment upon that subject, first as regards the existing custom, its alteration or its extension?—Yes, I have.

You have written upon the subject?—I published a letter to Mr. Pusey.

Are you of opinion that it is desirable that the legislature should interfere in this matter?—I think not, as far as my experience goes.

Your experience extends not only to Nottinghamshire, but also to Lincolnshire?—Yes, I know Lincolnshire very well.

Would you have the goodness to state the reasons which induce you to believe that a legislative enactment is not desirable in the counties to which you have referred generally?—I see things go on extremely well, and I would not interfere with them; in general I should imagine that it is a bad thing to interfere between two free agents who are perfectly free, the landlord on the one hand and the occupier on the other; it is a bad thing to interfere by legislative enactment; and my objections to any act of course would depend upon how far the act went, and what the provisions of the act were.

Do you think that if the enactments extended to the system of valuation between the outgoing and incoming tenants, and to the liability of the landlord to the outgoing tenant for compensation, that it would be objectionable?—If liberty was given to the occupier to improve at his option, and the landlord was obliged to compensate, or find another occupier to compensate, I conceive it would be objectionable; and if there was any clause in the act to allow the landlord to evade the act, or to provide that it should not apply, it would leave the landlord and tenant at liberty as they are now, and I think it would perhaps only create unpleasantness between the two parties, without effecting anything.

Have you lately purchased an estate at Wyston, in Nottinghamshire?—I have.

Do you find that the payments upon entry upon the custom of that country are the same as those in Lincolnshire?—No, they are very much heavier at Wyston. The occupier there has a right to the following crop; we have not that at Thorney; my farms at Thorney are not let with the claim to the following crop, at Wyston they are; therefore the sum to be paid is much heavier by the incoming tenant; our entry is not so heavy; the seed

and labour, and various items, do not come to so much as where the following crop is allowed.

In which of those respective districts is the agriculture the best, where the payments are the heaviest or where the payments are the lightest?—My experience is so small in that way I can hardly say; I do not know of my own knowledge; I should say Lincolnshire was far superior to this estate at Wyston in cultivation.

And are the payments in Lincolnshire lighter than at Wyston or heavier?—Lighter, because the occupiers who have applied to me for farms at Wyston, who lived in Lincolnshire, objected to the heaviness of the entry.

Do you consider yourself bound by the custom of Nottinghamshire in respect of the estate you have lately purchased there?—Yes, I certainly do.

And you find that a practical inconvenience with respect to letting or occupying that property?—I have only had two or three farms to let at Wyston, and although it is a great inconvenience to me, I have considered it on the whole best to relieve those farms of this heavy tenant right and charge interest upon it to the tenants; that was what they proposed to me, and I thought it desirable to have the men who offered to me, and to meet them I agreed to relieve them of the extra tenant right, if I make myself understood, and to charge them the interest of the capital to pay me the interest.

In speaking of the extra tenant right, you mean that over and above the custom which prevails in Lincolnshire?—Yes, the following crop for instance.

And the result of that extensive tenant right has been an increase of rent in the form of interest upon those payments which you have made, to be exacted from the present tenants?—Yes; my agent fixed the rent upon the farms, and when the tenants found out that it was a very heavy entry, they said it would answer to them to pay me interest upon the extra outlay for the following crop and add it to the rent, if I was able to do so or willing to do so, because the capital would be of more use to them in working the farm than it would be in the farm itself; I conclude they meant that it was worth more than the interest of five per cent. to have the free use of the capital to work the farm annually.

If you had not bought off this extra tenant right, your tenants would have been obliged to do so, and would have been to that extent incapacitated to make future improvements?—Yes, they would have had a heavier entry. So long as they occupied the farm that money would have been safely invested, but it would have been only invested; it would have been locked up.

Is your estate at Thorney entailed?—Yes, it is.

Do you consider yourself bound by the agreements made by your predecessor?—Yes.

And by the custom of the country?—Yes, both.

certainly do not understand the law upon the subject, but I imagine that in law I am bound.

In the event, supposing such a thing to happen, as your personally being inadequate, your successor would not be bound by the agreements that you make yourself?—That is a legal question, which perhaps I am not qualified to answer.

In the case of a tenant for life, he is unable to charge the property for any purpose beyond his own life; is not that the case?—No, he is not, I believe.

The compensation in that case to the tenant must rest upon his personality?—I imagine that any agreement that he made, if in accordance with the custom of the country, or anything like the customs of the country, which customs are very various, would be binding on the property, just as an ordinary tenant right would be.

Upon his personal property or upon the estate?—Upon the estate, I imagine.

Supposing that were not the case, do you think it desirable that it should be made binding upon the estate?—Certainly, I think if it is not so, it should be made so. I should be quite in favour of such an alteration. I think that an owner of property for life ought to have the means of binding his successor by any agreement that would not injure the estate.

So far, then, you are in favour of an alteration of the present law of entail, as to enable the tenant for life to bind his successor in a reasonable sum for compensation to the tenants for improvements?—Yes, certainly.

What you object to is the extension of legislative interference as to the valuation of improvements, or to a system by which that valuation shall be ascertained and enforced?—Yes; I conceive a freedom is wanted in an entailed estate, and anything that would give the utmost freedom ought to be given to the owner. The part I object to is anything that would interfere with my freedom; that is, obliging me to let my estate upon any terms that may be supposed to be good, but which I do not like or approve of.

In fact, you think that an enabling enactment as to the present holders of entailed estates is desirable, but that anything in the shape of compulsory regulation for the letting of land is highly objectionable?—Yes, that is what I think.

Have you reason to believe that that opinion is generally entertained throughout Lincolnshire and Nottinghamshire, either by the landlords or by the tenantry, or by both?—I know a great number of the large landowners in the county of Lincolnshire, and I am quite sure that they object very strongly as a body to anything to regulate or to interfere in any way with the terms upon which they let their estates; but I cannot recollect hearing any of them express themselves in favour of the other opinion I have given as to the entailed estates. I could not speak to my knowledge as to what their impression would be.

As respects their opinion then, as far as you know it, it extends merely to this, that they object to compulsory interference with the management and the letting of their own property during their lifetimes?—Yes, that I believe to be the case.

Supposing that the principle of compulsory adjustment were adopted with respect to agriculture, can you see any reason why it should not be extended to other trades and other property engaged in it?—No, I do not see any reason why I, as a landowner, or any other landowner, should be interfered with, even for his own supposed advantage, if you do not interfere with any other trade. I do not see why a distinction should be made between a landowner and the owner of a mill.

Your view of the case is then, that land is an instrument, and that rent is the hire paid for it?—Yes.

And that it ought to be considered in the same light as

any other instrument for production or manufacture?—I think so; that is my impression.

Are you of opinion that if regulations were imposed upon the conditions for letting land, and for the mode of final settlement on the tenant leaving his occupation, that such regulations would affect the amount of rent?—I should say certainly, in my own case, decidedly it would; and many other gentlemen whom I know say so. If any enactment was to pass to enable the tenant to improve, and to claim from me hereafter for that improvement, I should be obliged to raise my rent, because my plan has been to let land at a low rent, or at a moderate rent, to parties you know and see will improve, and are improving it. I sacrifice a considerable part of my fortune, and large landlords still more, in that way, to enable our tenants to improve our property; therefore if I were answerable for whatever they might lay out in improvement, I should be obliged to raise my rent to meet those claims, as an act of justice to myself.

You consider rent then as only one among the other conditions of agreement between landlord and tenant, and that the principle of legislative interference which interfered with the other covenants cannot be held separate in its operation from land?—No, I cannot myself see, except the rent be regulated by a forced valuation, how the act of Parliament could be carried out, because I ought to have the power to agree with the occupier, and the occupier ought to have the power to agree with me, to relinquish any such claims for a lower amount of rent, fixing the rent, which is what we do now, upon express stipulation; so that except the rent was fixed, I do not see how the tenant would be secured or protected.

In the event of an excessive tenant right being due on the tenant leaving the farm, and the owner being unable to raise the rent in proportion, or to obtain a tenant, the landlord would be in the position of having a large payment to make without being able to compensate himself by increased rent from the incoming tenant?—Yes, he would, and then he might not have the means of making the payment; there is, besides that, both the interest and the capital to consider; if two or three other farms were thrown on his hands, and he did not happen to find an occupier able and willing to take to those improvements, he might be called upon to pay an amount of money inconvenient to him.

And the result of that would be, that he would become liable for money, over the expenditure of which he had had no control or direction?—Yes.

You are of opinion that the tenant right, as it exists in Lincolnshire, is satisfactory?—I think it is, but improvements are made repeatedly. I think the agreements now are very good; we have been altering our agreements as we find anything advisable: for instance, I had heard that Lord Yarborough had allowed oil-cake to the extent of one-third, but the occupiers of my farms never had any claim, so I voluntarily offered, and they have agreed to it, to let it by agreement, that they should have one-third of cake, and I conceive that improvements may be made in time to come. I imagine that an agreement between the landowner and occupier is as capable of improvement as anything else, and as improvements are made, the thing will be found to answer, and the landowners will be desirous of making them; but I was under the impression, which I confess probably may be an erroneous one, that my son and heir would be bound by this agreement. I imagined that if it was a reasonable agreement, though the estate was entailed, he would be bound to fulfil this provision as to the oil-cake.

You think it desirable he should be so bound?—Certainly; I thought he was; I did not understand the law, and so very probably was mistaken. I was doing what

I supposed would be binding upon him, and it would be unfair to the occupier if it was not so.

With respect to the buildings in Nottinghamshire and Lincolnshire, are they generally adequate?—I should say in Lincolnshire, on the wolds, and cliff, and heath, they are, on the whole, adequate and very good; but I imagine in what we call the flatter parts of the county (I do not know the fens at all), but in the strong districts, the low districts, that they are not adequate at present.

Do you think that that arises from the want of capital to erect them on the part of the landlord?—From not being able to expend his capital in that way.

Do you think it desirable that an agricultural tenant should be placed in the same position as a tenant in trade with respect to fixtures, namely, that he should have the right to erect fixtures and to remove them, without damage to the existing buildings, on quitting his occupation?—I think if the general law of the land was altered it would be a good thing; supposing there was no agreement that he should be allowed to remove them, if he left the buildings in the state he found them, except the landlord chose to take them at a valuation, I see no objection to that.

Do you know the general bearing of the custom in Lincolnshire as to what particular improvements that extends to?—As to tenant right?

As to the custom, as distinguished from agreement?—The custom seems to vary so much on different estates in draining; I believe at Thorney they have; on those farms of mine the draining spread over three years, they being used to do the labour; but it varies so, I am hardly able to say what the general custom of the country is as to permanent improvements; it has not been the practice for the occupiers to make the permanent improvements generally.

But according to the varying systems which prevail in those limited districts, has that custom the force of law, independent of the agreements?—I believe it has; that is, I believe I am bound by law to allow the drainage for three years, but I am not sufficiently well informed in the law of the case to state positively how it is; I believe no case has ever been tried; I certainly never recollect an instance of a lawsuit upon the subject, nor do I know what the issue of any legal trial upon the subject would be; I myself should never think of litigating it.

It was under that impression that you purchased the tenant-right on your property at Wyton?—Yes; as a man of honour, if they they had a claim to it I would not have litigated it; my impression certainly was when I bought the estate, that I bought it with the custom, which I could not have legally avoided.

Are you of opinion that the custom which prevails in Lincolnshire has tended to the improvement of agriculture?—Yes, I think the agreements have been very useful.

You mean the agreements under the custom?—The agreements and the custom together; the remuneration they receive has been of service generally.

Do you think it probable that the custom of Lincolnshire will extend with the improvements of the cultivation to other counties, first to those adjoining, and then to those more distant?—I conceive it must spread now rapidly. My own feeling is, that the occupiers will be unable to farm the land, except they can get liberal agreements; that the landowners will be obliged to give such agreements as will enable them to farm as well as they can, or otherwise they must let the land at a low rent, or not have it farmed at all. What I mean is this, that I ought to be able to give the tenant every advantage, by an agreement that does not injure me.

You think that the general custom of the country will so operate as to establish the custom in favour of

the tenants without legislative interference?—I think it must, as far as my opinion goes.

And now that a certain system of free trade has been adopted, this necessity will become more imperative than hitherto?—Yes, certainly.

And you base your opinion upon the fact, that the custom of Lincolnshire has grown up whilst legislative protection was extended to the agriculturists, when the necessity for it was less pressing?—I believe that with regard to what has grown up from the liberality of the landowner, they will be obliged to do from necessity what they have in many cases done from liberality and the spirit of improvement.

Where land has to be brought into cultivation, as it has been in Lincolnshire, extensively, will not the establishment of custom be tantamount to compulsion upon the landlord, to enable him to obtain something?—I think that in many cases, in the heath districts for instance, it never could have been brought to the state it is now, except liberal agreements had been given, and except there had been security; I think the agreements have had a great deal to do with it, but the feeling of security has had more; that is, the feeling of security that if a man improved his farm, he would have it a sufficient time to get reimbursed.

You are of opinion then, from what you have seen in Lincolnshire, that the necessity of the case is sufficient compulsion to establish an adequate custom throughout this kingdom, and that trusting to that necessity is preferable to enforcing customs by legislative enactments?—Yes, that is my impression.

Mr. HAYTER.] Has this custom which prevails now in Lincolnshire within your knowledge extended; that is, does it extend over a larger area now than when you were first acquainted with it?—My knowledge is very limited; excepting Lincolnshire and the adjoining county of Nottingham, I have only a general knowledge and acquaintance with the country.

You assume that the custom will extend, because such custom has been found beneficial both to the landlord and the tenant: was that the ground of your belief?—Yes.

And when you state this custom has grown up from the liberality of the landlords, it is to be presumed that you do not mean to say it is not a custom advantageous to both parties?—No.

You were understood to say that was a custom that had grown up from the liberality of the landlords?—I intended to say, that I did not consider that the landlords had been so obliged to grant liberal agreements as it was supposed they would be obliged to do under the competition of free trade; but that it is the greatest interest of the landlord to grant liberal agreements to his tenants.

Are the committee to understand the word liberal in this sense, that you mean by liberal a disadvantage to the landlord and benefit to the tenant, or a liberal agreement beneficial to both parties?—I ought to have said, instead of liberal, enlarged agreement; I did not mean liberal in respect of one party sacrificing his interest to another; I meant enlarged and free agreements.

Is it then your opinion that those agreements or those customs are agreements or are customs advantageous to both landlord and tenant?—Yes, certainly.

Both parties are benefited by them?—Yes.

And you think that because it is so beneficial both to the landlord and tenant, it is a custom that will be the more active, in all probability?—Yes.

And fill a wider area?—Yes.

Mr. T. EGERTON.] You said that you thought one of the evils that might arise from an agricultural tenant-right bill might be, that a person would find him-

self with two or three farms on his hands, he not being able to find tenants for them, and therefore having to pay, himself, a very heavy compensation?—Yes, I did.

Will you take the case of a landlord in the county of Lincoln, or in any other county; under the custom of the country the tenant would have a right to call upon the landlord to pay a compensation to him, the out-going tenant; in Lincolnshire, and in the other counties which you refer to, as in Nottinghamshire, the custom being to give certain rates of compensation to the out-going tenant, supposing you could not find a tenant for a farm in those places, who would be liable to pay the compensation?—I believe the landowner is answerable in the end.

Then in fact, under the custom of Lincolnshire, a person would be placed in no different position to what he would be under the present bill?—I consider the tendency of the present bill will be to allow more extensive improvements to be made; that then any occupier might under-drain the whole and carry on heavier improvements; and that would form an additional claim, and make it heavier than now.

Then your objection is not so much to the principle of the bill as to the extent to which it goes?—I object to the principle as far as it interferes with the free agency of the two parties.

What is the distinction you draw between compulsory arrangements between landlord and tenant under the custom of the country, and compulsory arrangements between landlord and tenant under an agricultural tenant-right bill?—As the matter stands now, I may if I choose say to the person who quits the farm, "I will satisfy your claims," but to the new tenant I would let the farm against the custom of the country without any compensation whatever; but if it were made law I could not do it; I can now alter the custom of the country by private agreement.

Is it the fact that in Lincolnshire, by private agreement, you can counteract the custom?—Yes.

Can you speak of your own knowledge to facts of that kind, because it is understood that where there are customs having the force of law you cannot by private agreement contravene the custom, which has the force of law?—As regards the occupier of a farm I am obliged to satisfy the custom of the country, but I can have any agreement I please; but if I allow him to go in without an agreement, I believe it is assumed in law that in the absence of any agreement each party is supposed to be regulated by the custom of the country, or the custom of the estate; but if I choose I could draw an agreement for a farm, in Lincolnshire say, completely opposed to the custom of the country.

Do you state that as a matter of fact?—I believe so quite certainly; but I should be obliged to satisfy the party in the farm.

Mr. HAYTER.] The custom naturally prevails where there is no agreement?—I understand so.

Then the custom becomes the law of the land?—I believe an agreement over-rides the custom entirely; the custom only comes in where there is no special agreement.

You were asked as to a landlord, under those circumstances where the custom prevails, having two or three farms thrown upon his hands, he being obliged to pay a large sum in the shape of compensation. Is not it also possible that that may happen where the custom does not prevail; supposing the same thing to happen under both those circumstances, which would be most advantageous to the landlord, he being in the situation of having three farms thrown upon his hands independent of the custom of Lincolnshire, or in the position of having three farms thrown upon his hands where the tenant-right does prevail; which state of

things would the landlord be best placed in?—That depends upon the degree of mismanagement on the farm.

In which case is there the greater probability of mismanagement; in the case of a farm where there is no tenant-right, and therefore where the tenancy is put an end to at the end of the lease, or where a tenant-right does prevail?—Where a tenant-right prevails, the farms are better cultivated, on an average.

Taking it as an average, in which case would you conceive the landlord to be placed in the better position, where he has those farms thrown upon his hands where the tenant-right prevails, or where he has three farms thrown upon his hands where no tenant-right prevails; which would be the more advantageous position for him to be placed in?—I am not arguing that the landlord would wish to let his farm without a tenant-right. But I am doing what I have stated now; I am over-riding by an agreement the custom of the country. I think the custom is bad, and I feel I can do as I wish.

CHAIRMAN.] Will you state to the committee what are the peculiar tenant-rights which you are buying off on your property at Wyston?—The following crop is the principal one.

You have informed the committee that the expense of the entry in Nottinghamshire is heavier than in Lincolnshire?—Not all over Nottinghamshire, because at Thorney it is a Lincolnshire tenant-right; at Wyston it is a heavier tenant right.

Are we to understand that the excess of the tenant-right in your neighbourhood at Wyston is in the nature of compensation for improvement, or in consequence of the right of the outgoing tenant to take the away-going crop?—I do not think it is in the light of compensation for improvement, but the principle I imagine is, that he would be induced to carry on a good crop when he is paid for it to the last.

Are the committee to understand that compensations for artificial manures, or for food, are not heavier at Wyston than in Lincolnshire?—No, I think not.

You are aware that an away-going crop is a practice that prevails in many parts of England?—Yes, I believe it is; I do not know the practice of any other counties except Nottinghamshire, Lincolnshire, and Yorkshire; I believe in Yorkshire it is the custom of the country for the tenant to have the outgoing crop.

Is the time of entry the same in Lincolnshire as in Nottinghamshire?—I believe it is the 5th of April; that is the general time; there are some farms in Lincolnshire held from the 13th of May; I believe where the landlords have altered the entry, they made them Lady-day.

What you consider especially objectionable as the charge to the incoming tenant is, that the following crop should belong to his predecessor?—I think that is an injury to the occupier of a farm, because it absorbs so much more of his capital, which is then locked up.

You have stated that you sometimes let your farms at a lower rent, with a view to the improvement that may be effected by the tenant; are those farms let out on lease, or from year to year?—From year to year. I have only had the estate at Thorney for three years; my father held it for 20 years, and his plan was to let the farms from year to year, but to let them at low rents, if the parties he thought would improve them; he saw them improve them, and if they had not he would raise the rent, or not let them stay.

What is the peculiar kind of improvement?—The cleaning of land, the getting of hedges in better order, using cake for stock, the getting of land into better heart and general cultivation; not any great outlay in draining, but in the general state of the cultivation of the farm; that would take some time to do.

Still you have thought it expedient to give compensation for cake to the outgoing tenant?—Yes, I thought it would be an inducement to use more cake, and it is; they appear now to use more than they did 20 years ago.

What is the kind of improvement which you think would be so heavy an outlay as would inconvenience you perhaps, in the event of the farm being thrown out, if that were made without your control?—Under-draining; at Thorney the land is drained, a good deal of it; I am now draining it, and it is drained under one of the Government loans, so that it might not apply at Thorney, but it would at Wyston. Many landowners, if the tenant under-drained the land at a heavy expense, and it is often under-drained at £5 or £6 an acre, would not be able to meet it; that might be largely done by several tenants, and that might cause a very heavy payment to fall on the landlord.

You would object to the tenant having an unlimited power to drain without the previous consent of the landlord?—Yes, certainly.

Are you aware how long it takes to establish compensation as a legal custom?—No, I do not know that.

Have you heard another witness state that 20 years are required to make a custom imperative; are you of opinion that only a shorter time than that would be necessary?—I did not hear that; I do not know how many years it will take.

Are you aware whether the custom of compensation has spread from the Lincolnshire wolds to the Yorkshire wolds; No, I am not certain; I am not so well-informed as to the system of compensation in Yorkshire; I have merely understood that it is a heavier entry; the away-going crop in Yorkshire is a tenant-right, and it is not in Lincolnshire.

MR. NEWDEGATE.] Are you not of opinion that in Lincolnshire the custom has increased correlatively and contemporaneously with the extensions of improvements in agriculture?—Yes, I think that is the case.

Are you not of opinion that the more rapidly agriculture improves the more rapidly will the custom extend in other counties?—I think they are sure to do so.

Do you consider that the custom has been the origin or the consequence of improvement?—They have acted and reacted on one another; I can hardly say that; it has been the means of improving certain estates, and then persons on other estates, in consequence of the good effects of our agreements, have adopted them.

Have not the improvements generally preceded the custom?—Yes, I should think they have.

That is the general manner in which custom has hitherto been established; then it grows out of the improvement, and confirms the system of improvement originally established?—I think it does.

And you think that is the most advantageous system upon which compensation could be established in any district under custom?—Or by agreement; free agreements between the parties, whether it is done by the custom of the country or by special agreement, the object is answered.

And you think it is better to leave that to the natural operation of external circumstances than to enforce it by legislation?—I think so.

Have you known any difficulties arise with respect to the valuations made under the custom of the country in Lincolnshire or Nottinghamshire?—I believe disputes often do arise; but the occupier leaving a farm chooses a valuer and the other party chooses another, and they have arbitrators who decide it; but I imagine that under any great improvements, such as under-draining, that the arbitration would not be so easily made as if an occupier underdrained only upon the authority of an act of parliament giving him the right

to be compensated; it would be difficult indeed justly to value that when he leaves a farm.

Do you think it would be possible to establish a system of valuation by act of parliament that would be applicable to the whole of England?—I feel sure it would not, because it would not do to go upon the sum laid out, because it might be badly laid out; and to know the improvement made you would require to know the state of the farm when the tenant entered, which might not be known.

Might not the same difficulty arise also as to the length of time over which the instalments of the compensation should be extended?—I think so; there are parties who have told me differently; some parties have maintained that three years was sufficient for draining, and others 10 or 12.

You are therefore generally of opinion, that the only legislation that could be adopted advantageously is that which will enable the tenant in tail to bind the estate to a reasonable amount, and the alteration of the law with respect to fixtures, so as to place the agricultural tenant in the same position as the tradesman and manufacturer?—Yes, I think so; and I think one thing beyond that might be done, that the owner of an estate entailed might be enabled to lay out money himself, and charge the estate with it, under proper restrictions; for excepting for the government loan, I could not have improved my property by any permanent outlay at all. I think it could be done either way; that the landlord should do it and charge the estate with it, or that the occupier should do it under an agreement for compensation.

And do you think that the law with respect to fixtures should be placed on a similar footing with respect to agricultural property as it exists with respect to trading property?—Yes, but I do not think an occupier should be authorized to erect any buildings against the consent of his landlord, but the general laws should be altered so that if any agreement were made, he should, by the general law, be able to take them away, except the landlord chose to take them at a valuation.

With regard, then, to those two last particulars you have enumerated, you think a legislative interference would be mischievous?—I think so.

Evidence of Mr. JOHN PARKINSON.

MR. NEWDEGATE.] You reside at Leyfields, near Newark, in Nottinghamshire?—Yes.

And have been a large occupier and owner of land, and you are now or have been a considerable agent for extensive estates in various localities?—I am owner and occupier to a considerable extent, and am agent for property, and have been so for many years.

In what counties or districts?—Nottinghamshire and Lincolnshire.

With respect to Lincolnshire, are most of the farms held on lease or by yearly tenure?—As far as I know, a great part of them by yearly tenancy.

Are leases generally desired by the tenantry?—I am not aware that there is the wish or desire to have leases.

Have they compensation clauses generally in the agreements by which the farms are held from year to year?—Yes.

Are the improving tenants of Lincolnshire practically secure in their holdings?—So far as has come to my knowledge, certainly.

Are you aware of any instances of arbitrary ejection by the landlord, and of consequent loss of capital by the tenant?—I do not know a single instance in either county.

Are you acquainted with the agricultural custom

as it prevails in Lincolnshire?—Yes, to a considerable extent.

Has that operated to secure tenants compensation for the outlay and expense in improvements?—Yes; the tenant has confidence that he shall, and he does receive the benefit, in all cases I am aware of, where there is improvement; I do not know a single instance where a tenant has not done so.

And the improvements in Lincolnshire are as extensive, if not more extensive, more permanent, and more advantageous, than in any part of England?—In some parts there have been very great improvements, and in others improvements are wanted; speaking generally, very great improvements have been made in the county of Lincoln, within my knowledge.

Yours perhaps is the county of England in which agriculture has improved more than in any other?—I have seen very great improvements made in several counties, but in Lincolnshire there are parts that were waste within my knowledge that are now yielding very great produce, extensive tracts of land.

And the custom of Lincolnshire has grown up with the improvement of the farming?—Yes, and I may add, that I think the custom of Lincolnshire is less to the tenant than in most counties; that is, that the allowances to tenants in Lincolnshire is generally less than in many other counties.

Of what other counties do you speak?—I would speak of Yorkshire, and part of Nottinghamshire and Derbyshire.

Is the agriculture of those counties generally better than the agriculture of Lincolnshire?—I think, where the tenant right in Nottinghamshire is similar to that in Lincolnshire, it may be said to be the best farmed part of the county; where the tenant right assimilates: what I would say is this, that where the following-crop system prevails, the cultivation is worse than where the tenant has not the right of the following crops, speaking generally.

Does the custom of Lincolnshire include the following crop?—I am not aware that there is a following crop in Lincolnshire; I am hardly aware of any.

The fact is, that the custom in Lincolnshire, though not so extensive, is more confirmed and ascertained than the custom in any other county you are acquainted with?—No, I do not know that; I think in Nottinghamshire it is as well defined as in Lincolnshire, and also in Yorkshire it is defined; but the custom in a great part of Yorkshire is very heavy indeed, what is called tillage and half tillage; and a year and a half manure is paid for upon entry in some parts of Yorkshire, in others the following crop without payment of rent or rates; the tenant taking the following crop without payment of rent or rates.

Do you think these heavy tenant rights tend to the improvement of agriculture?—No, I think not; I think heavy tenant right retards improvement.

Do they lead to improvidence on the part of the tenant in possession, and incumbrance upon the tenant who succeeds him?—I think it may be stated that the incoming tenant is merely the representative of the landlord; the landowner is the person to whom the outgoing tenant looks for his tenant right; and in many cases, if he treats with the incoming tenant, it is with the understanding that the landlord is responsible; the outgoing tenant in fact has nothing to do, unless he chooses, with the incoming tenant; it is upon the landlord that his claim is.

Then he practically, under the custom of the county you alluded to, can recover from the landlord?—Yes, whatever his just claims are, his only remedy is against the landlord.

Is that remedy effectual?—It is effectual in this way;

where a tenant has entered upon land and paid for any rights whatever, with the sanction of the landlord or his agent, I apprehend he is entitled at law to the amount upon the same system at quitting.

But without any agreement with his landlord, supposing he has taken the farm upon the bare understanding that he is to pay so much rent, will or will not the custom of the country secure him for improvement?—That I think would depend upon circumstances: if the former tenant had a good title to what he charged the incoming tenant for, then he has a legal claim; if he has not a good title, of course he would not have a legal claim upon the landlord, and therefore it is incumbent upon every tenant taking a farm to have the sanction of the landlord or his steward to the terms of the tenant right he is charged with; then I think he may be said to have a good title to be repaid.

Then practically the custom is this, that when the tenant undertakes improvements, take for instance on improved land, he must in the first instance have the consent of his landlord to those improvements?—I think so; but this may be said, if he took a farm, and a part of that farm was arable, and certain tenant rights were upon that arable land, and he improved the waste land or inferior land, he would have the same claim, in the absence of any agreement for the land that he had improved, that he had to the originally cultivated land.

Because it would be assumed that he improved that land with the consent of his landlord?—I think it must be stated that he held that under the same conditions that he held the other, and therefore he would have a good title.

Take an instance, by way of illustration, of a tenant taking land in the same state that the heath was of rabbit warren. Supposing that he drained it, and improved it, and brought it into cultivation; if he did that with the consent of the landlord, he would, under the custom of Lincolnshire, be entitled to compensation for all unexhausted improvements?—In that case the plan would be to have some definite understanding as to whether there was a tenant right upon it. In the absence of that he would have a good claim by the custom of the immediate neighbourhood; of course he would be authorized to claim upon the custom of the neighbourhood, and that is, if a year's rent and rates were allowed to the outgoing tenant for summer fallows in the immediate neighbourhood, that tenant would claim them, and if it went to a jury I think he would get the amount.

You have no doubt that he would recover the amount?—My impression is so; that he would have a very strong case for the jury, and would obtain a verdict, inasmuch as it would be assumed and held that he was under the same custom as the neighbourhood.

The custom of the neighbourhood in that case would be operative to his advantage?—Yes; and I would say further, that unless an agreement was made as between the landlord and tenant upon the taking of such a tract of land, the court would admit that custom, and would agree to allow it *a priori*, as if it were put in the shape of agreement; I mean such as Lincolnshire heath, or as the wolds when in a state of rabbit warren.

You are of opinion, that independent of any consent of the landlord, a jury would award compensation under the custom of the country?—According to the immediate neighbourhood; if there were a number of customs it would be a matter of doubt; if on one side a year's rent and rates were allowed, and on the other side of the land a year's rent and rates were not

allowed, it would be a doubtful matter which way it would turn; therefore an agreement seems desirable in every case.

The fact of the case then is, that as improvements extend in each district, the custom becomes thereby confirmed?—Yes.

So that the custom is the consequence of the improvement?—Yes; for instance, if the tenant had not that right he would certainly not have a sufficient inducement to improve. Take, for instance, a rabbit warren; if he were not paid according to the present Lincolnshire custom, he would not have sufficient inducement to set about the improvements.

But the fact of the case is, that in Lincolnshire, upon the heath for instance, the custom has grown up with the improvement of the cultivation, and is now fully established?—Yes, certainly; when it was in a state of rabbit warren there was no custom; but when it came into the state of other cultivated land, then the same custom has followed almost as a matter of course; and I think that the most advisable tenant right is, that the tenant should be paid a year's rent and parochial rates for all lands summer fallowed, which is the case in the greater part of Lincolnshire; if he takes a green crop, then there is not any allowance for rent or rates; that has been generally the case in Lincolnshire; but if he purchases manure for the green crop he is paid for that; generally, I believe, that is done; therefore a tenant, though he has taken the green crop, is still entitled to the full value of the manure he laid on; and with regard to that green crop, the better the green crop the better the succeeding crop of corn, and the land is in altogether a better state.

What is the custom of Lincolnshire for compensation for drainage?—I believe it is very variable; that is a custom that has risen entirely since I can remember. I do not suppose that 30 years ago a single penny was paid to the outgoing tenant for drainage, certainly not 40 years ago, and then very little was done; but to induce tenants to drain, the custom has arisen, and I believe, in many cases, where the tenant finds the tiles and all the labour, he is allowed for seven years, deducting a seventh part every year, until the whole is exhausted; in some other cases, where the tenant finds labour only, he has then an allowance of three years upon the labour. I can speak to one case particularly, on an estate I have the management of; the landlord finds the tiles and pays the expense of the man laying them down, and the tenant does everything else, and he is a tenant from year to year; that is a case I can speak particularly to; but I hold that where the landlord chooses to find tiles, the tenant has no claim; although on every adjoining estate there may be an allowance for tenant right for labour, there is no legal claim against the landlord where it is done under a verbal agreement that the landlord provides the tiles, and the tenant finds the labour.

In such a case as that, supposing recovery were sought, would not the custom of the district be pleaded, and would not compensation be recovered by a jury?—I think not, if it could be proved there was an agreement for the landlord to find the tiles and the tenant the labour.

Then the bearing of your answer would be, that where the larger part of the expense is borne by the landlord, the custom has been in all cases operative?—No; the custom of allowance to the tenant is not operative; I suppose that is the way in which I am to understand the question. Upon a large property in Nottinghamshire for a great number of years the arrangement is always that the tiles are given and the tenant pays for the labour, and there is no claim for tenant right; and a very great improvement is made at

the joint expense of the landlord and tenant, and there the tenant is as safe as if he had a lease; I do not think, literally, any of them would have a lease if it was offered them, on that estate.

Is it possible by legislative enactment to form such regulations as small adapt themselves to the varying circumstances that you have described?—I think it quite impossible, the circumstances are so variable; there are some cases in which legislative enactment would be beneficial, but as a general measure I think it could not be acted upon.

Are the tenantry of Lincolnshire and Nottinghamshire generally content with the custom as it exists and operates?—The custom which is most approved both by the landlord and the tenant is this: I have said that there is an allowance of a year's rent and rates for land fallowed, any payment for a year's manure made upon the farm, where the tenant has paid for it on his entry, but not otherwise. In some cases tenants have paid for a year's manure upon entry, and in others they have not; but I am decidedly of opinion that it is advantageous to both landlord and tenant that the tenant should be entitled to a year's manure, and for this reason: a tenant upon quitting, if he is entitled to a year's manure, would leave the manure better worth the next tenant having and paying for than having the other for nothing, because he would, if he had no interest in the manure, sell off his stock and leave the manure little better than straw; that is one of the allowances that would be beneficial to all parties.

Does that system of allowance prevail in Nottinghamshire and Lincolnshire, and is it extending?—It prevails more in Nottinghamshire than in Lincolnshire; there are estates in Lincolnshire where the tenants have not that right, and should have it; I would create that right in every case; that is, I would value the manure at the end of the current year in each case, and let the tenant have the advantage of the surplus value, if it was proved there was any, upon his quitting.

Would you do that by a law?—Yes.

Would you specify that particular allowance by law?—No, I think not, unless you make a law applicable to those who are only tenants for life, or to the estates of the clergy, who, in fact, are only holding for their lives; there I think it would be advisable perhaps to make an enactment, so that tenants for life should not suffer, and that their executors should not be subject to any payment if the tenant for life did no more than the custom of the country, that is, than what was generally done; and to that extent he should have power to bind his successor.

Do you mean that you would so far realize entailed estates as to give the custom of the country the power of operating upon them, or do you mean that you would make such payments as those you have alluded to, such as the dung, imperative and compulsory upon the holder of entailed estates?—I would make it imperative upon the holder of an entailed estate, and his successor.

Whether he had entered into an agreement with the tenant of his farm or not?—I consider there should be an agreement to have the right, if the right does not exist; I think it is expedient that it should exist, but I think that the right should come first.

You think the right should be admitted by custom, and then that the law should be so altered as to admit of its falling upon the estate?—Yes; but it is only the difference of value where the manure does not belong to the tenant at the present time; I would have the manure valued on the farm, say it amounts at the end of the current year to £100, and then at the quitting of the tenant there should be always manure of the

value of £100, and if he increased it to £150 then he should be paid the £50; and that would be beneficial, I have no doubt, in all cases.

And is that an alteration in the custom which is likely to be adopted?—I think it is.

Like other improvements, it will grow up as experience justifies it?—Yes; I think it is one great reason for it, that it would be beneficial to all parties, and there cannot be a stronger reason than that.

Have you known instances where it has proved beneficial in particular localities?—Yes.

Where?—In Nottinghamshire.

You think in that respect the custom of Nottinghamshire is better than the custom of Lincolnshire?—In Lincolnshire there are those who have the right.

And you think that the best right?—Yes; I certainly think it advisable that the tenant should be entitled to a year's manure, he paying for it on his entry, or being charged for it subsequently.

Is it necessary to have a law to ensure those improvements?—No, I think not; but it will work pretty well I think, generally, without any specific law for it; the agreements will comprise that, and I think that every farm ought to be held under an agreement, a specific agreement, between landlord and tenant, that they may know their relative situations; there is great disappointment, and very great advantage is taken sometimes, where that is not the case; the custom of the country is as variable as a sliding scale.

And you think it could not be regulated by law?—No.

Your opinion is this then, that the agreements should be made more specific and more binding?—I think they should be more definite.

Is there any necessity for an alteration of the law, in order to render those agreements binding?—In one respect I think it advisable; that is, where tenants have made an improvement by building, that they should have the power to remove it, unless they are compensated by valuation: but then it frequently happens that when new buildings are made some of the old ones are taken away; therefore the tenant should not have a claim that would reduce the buildings to less value than they were originally.

You mean that the tenant should have a right, as a tradesman has, to remove anything he puts up himself, but not anything he found upon the freehold?—It generally happens that when a tenant builds he pulls down something; I think he is not entitled to the whole value of the building when he has pulled down a third of the value of the new building: I mean, that he should be entitled to the additional value of the building in consequence of his expenditure.

Then the tenant has no right to pull down any building attached to the freehold?—No, he has not at present; but I think he might have that right, when he made improvements.

With or without the consent of the landlord?—That he should have a legal right to compensation for improvements of buildings.

To alter the buildings?—To have a compensation for money expended in buildings, or that he should remove those buildings; for instance, a tenant having expended £100 in buildings, probably on valuation, after several years it might not come to more than £50 or £60, and he might choose rather to take £50 or £60 than remove the buildings.

Are you speaking of buildings he put up himself, or buildings he found upon the land?—Of no other than what the tenant himself put up; he could not have any title to remove anything else.

Have you known any difficulties arise under the sys-

tem of arbitration in Lincolnshire?—Yes, I have frequently known difficulties arise, and in a great measure from the ambiguity with which the valuations are got up. The general custom, though some will not submit to it, is for a valuer to be appointed by each party, to make out an inventory of the tenant's claims, and put down the total sum without entering into the detail of particulars. I have had occasion, as agent, many times to open those valuations, and to insist upon knowing the particulars, and I have never done it but that I have found very great alteration necessary, so that I would guard that especially. Sometimes that may have arisen from its having been done carelessly, and at other times from its having been done wilfully: I never opened a valuation of that kind but I found more or less of very serious mistakes.

You are distinctly of opinion that the valuations should be made more specific, and that they should be submitted to some umpire or third party?—I think there should never be a valuation without a sum being attached to each particular item; I think that is the proper way, and those who know their business will never make a valuation in any other way; where that is not done it either arises from ignorance or from a wish to impose, one or the other of the two; and in nine times out of ten the valuation is made in gross.

The difficulties you have known arise under the system of arbitration have generally originated in the awards of the arbitrators not being specific in their items, and the sums not being attached to those items?—Yes; and there is another great difficulty, and that is, that most tenant-right valuers think themselves very competent to make a law upon the subject; but it is their province to put a valuation upon the different items, and to be instructed according to what is the law in the case; yet the valuer of the outgoing tenant frequently makes his claim, and insists upon it that it is law, and if he meets with one of his mind, then they perhaps create a new tenant right; that is very frequently done.

If that be the case it is submitted to a jury?—If it is submitted to a jury, there must, of course, be proofs adduced that he had the original title.

And you think it would be desirable, in order to facilitate that proof, that the items should be given separately, with the charge upon them affixed?—Yes, and that the outgoing tenant should always prove his title; if it is a recent entry; or if it has gone, as some farms have, from generation to generation, then, of course, there is no other title than what the other part of the estate or neighbourhood gives, but generally it follows as the remainder of the estate goes in that case; of course there are instances where a farm has been in the same family 100 years or more.

But still, on reference to a jury, the case is solved?—I apprehended that the award would be that the tenant should have the same rights as the remaining tenants on the estate under similar circumstances.

According to the circumstances?—Yes, according to the circumstances.

But you think it would facilitate the adjustment of those differences if the award were rendered more specific in the manner you have alluded to?—Yes, and I think it might be good if it were enforced by legislative enactment.

Your opinion is generally that, except for the purpose of specification, legislative enactment is not required, even in the case you have alluded to?—Yes.

Do you think it would be possible for the law to lay down the items, and to attach a compensation to them?—No, certainly not, not even lay down the items. I think the tenant should show a title to his claims; of course if he has himself entered, he would know how

he had entered; the difficulty is in defining when it has gone from father to son. In every case that has come before me the custom of the estate has been the one adopted in those circumstances, and it seems reasonable it should be so; there are other farms probably on the estate where there have been changes, and reference has been had to those valuations, which have been made upon the same principle.

But generally the tenantry of Lincolnshire are improving farmers, and satisfied with the system?—Yes, I believe so.

Do you think they wish for any enlarged legislative measure upon the subject?—I never heard any farmer in Lincolnshire or Nottinghamshire say he wishes for anything of the sort, or that he is desirous of legislative enactment; they may have said so, but I have never heard of it, nor have I heard that they have so said.

And you think that any stringent compulsory measure would operate injuriously as well upon the tenantry as upon the landlord, owing to its non-adaptation to the peculiar circumstances of the case?—Yes, I think it would tend to destroy that confidence which is the mainspring now of improvement; there exists a great degree of confidence between the landlord and tenant in both counties, and that has done more for improvement than anything else that I know of. The tenant holding from year to year feels his certainty of holding on, he and his family, if they act rightly, the same as if they had a lease. I perhaps have laid out as much as any tenant farmer, as a yearly tenant, not less than £10 an acre in permanent improvements, without a lease at all, over a considerable extent of land.

And you have found that outlay remunerative and secure?—Yes, I believe so; I am satisfied upon it. I can only say that the only instance I ever had of ill-usage was a farm held on lease, and when it was at liberty it was valued at two and a half times the original rent. I relinquished it, and the party who took it had a very good year the first year following; he subsequently had bad years; he took it at the same rent that I might have done, and my father having made all the improvements; and he got twice an abatement of rent; and he applied again for an abatement of rent, and the owner, I suppose, having forgotten that I had held the farm, he asked me to go and see to the farm on account of the tenant's complaining, at the same time saying that he had had his rent abated twice; and I inquired, if that abatement was due to him who had entered upon the improvements, what would have been due to me if I had continued to have held it; and the result was that the man left the farm, and it was let at a reduced rent in consequence of his bad management. That was a farm that I had held on a lease; I should never wish to hold another on a lease.

You generally disapprove of leases?—Yes.

In the case you have alluded to, did you recover any compensation when you left?—Not a farthing except the ordinary tenant right, except that tenant right which I should have had if I had held it from year to year.

And if you had done that, the rent would have been raised, and you would have secured yourself by working out the farm in the latter part of the lease?—I could hardly have made up my mind to give it up in a very bad condition, or I should not have done so much as I did.

Your opinion is that a yearly tenure is the best?—Yes; and I may state this, that the system in Scotland is 19 years' leases generally, and I have understood that at the end of the term it is not an uncommon thing to advertise for tenders. I would sooner hold from year to year than under such a lease, and be put up to auction at the end; that is the Scotch system.

And you think it a bad system?—I do.

The result of the operation of the custom and the confidence that is produced in Lincolnshire and Nottinghamshire is this, that the capital of the tenant and the landlord is worked as one, instead of being considered as a divided interest?—It is the great confidence that has been the main cause of all the improvements. I can state no more, for I think if that confidence did not exist, the tenantry could not have been expected, nor would they have expended money as they have done.

CHAIRMAN.] You have mentioned that in parts of Yorkshire the tenant right is heavier than in Lincolnshire?—Yes, very much so.

Would you state in what particulars it is heavier?—In the tillage, what is called the tillage and half tillage, and that is this; whatever they have done in their fallow year, and there is a year's rent and rates, and manure; everything, in fact, which they have done they get paid for; that is the same as in Lincolnshire. Then they go to a second year, and have half that allowed in the following year; that is a heavy tax.

The tillage is the north-country term for what is called in the south an allowance for naked summer fallows?—For working fallows.

Does not that apply chiefly to strong land, or does it apply to all land?—To all land alike.

So many ploughings and harrowings?—Yes.

In the shape of cleaning the land?—Yes.

Then you are understood to say that in the district you allude to they go further back, and allow for half that expense the following year?—Yes.

Those charges are for acts of husbandry, are they not?—Yes, and in some cases the following crops. The last witness stated that he had done away with the system in part, on re-letting the land, and I have done it lately myself for the Duke of Newcastle, and when I was his Grace's agent I did it whenever a farm was at liberty; I ascertained the difference, and so exonerated it from the following crop, that the tenant might not have his capital locked up in the farm.

You consider the system of an away-going crop is a bad system for the incoming tenant?—Yes, it is a bad system for the incoming tenant, because it takes his capital; and certainly, from what I have seen, and it is extraordinary that it should be so, that those who have the right to the following crop farm the worst; whether it may be from want of means I do not know, but they farm worse than those who have not the right.

Confining your attention to the question of tenant right for purchased manures, or purchased food, or for marling the land, in those respects the tenant right is not heavier in Yorkshire than in Lincolnshire?—Yes, I think it is; I do not know whether you have seen Baildon's Treatise upon the subject, which explained that.

You speak of the West Riding of Yorkshire?—Yes; that is the larger portion of Yorkshire, and that system extends partly into Nottinghamshire, a very small part, and also into part of Derbyshire, though I think it a very injurious system to the tenant and to the estate.

When you say the system is injurious, are you speaking of the away-going crop or of the half tillages?—Of both.

You are not to be understood to object to the compensation for purchase of manure or the purchase of oil-cake?—Where a crop of corn or grass has not been taken, the tenant has a full right to be repaid for the expense; in some cases a further claim is set up beyond that; they claim, upon the principle of half tillage, half the purchased manure in the second crop;

I do not think that is allowed in many cases, it is in some.

Is not it common in Lincolnshire to allow three years for bones?—In bone manure that is an exception; I am speaking of stable or town manure; in bone manure it is in Lincolnshire and Nottinghamshire common that the tenant shall have three crops of either corn or grass mown; that is only limited to bone manure, with the exception of labour, and I think, in some cases, cake purchased. There is an allowance for cake purchased, but not for manures, except for bone manure; one-third upon the purchase of cake the following year is all I have heard of.

Do you see any objection to the system of payment for the purchase of artificial manure, as it exists in Lincolnshire?—I should see an objection to its being imperative.

That is not the question.—I do not see any objection to the owner's making that allowance to the tenant voluntarily, but then I should say that in some parts it is advisable and in other parts it is not so; it should depend upon circumstances.

Why would you so regulate it?—For instance, if an owner had a very poor farm, and all that land that wanted a good deal of artificial manure upon it, he could not do better than offer a premium to his tenant to use linseed cake, by a third or fourth of the original cost for following years; but I should make a difference with cake consumed by sheep and cake consumed by cattle, especially if the manure belonged to the tenant; the tenant would get the value of his cake, and get an increased value in the manure; one load of manure would be worth two where cake had not been consumed, and therefore the same allowance ought not to be made for cake where consumed by cattle as by sheep.

You would not make an allowance for cake consumed by cattle and also for the improved value of the manure, because it would be paying the outgoing tenant twice over?—Yes, just so; and I say where a tenant is entitled to be paid for manure, he should not be entitled to payment for cake consumed by cattle; but in respect of sheep cake consumed in the field, that is another thing.

What allowance would you make, as a matter of private agreement, for sheep eating cake on the turnip land?—A third or fourth; it is partly on turnip land and partly on the seed land; it does much good on seeds broken up for wheat the succeeding crop; it is astonishing what the effect is where cake is used liberally. I will venture to say that if upon light land there were cake used upon half of it, and the other half not having cake upon it, it would generally happen that where cake had been consumed the succeeding crop would be doubled; and therefore there is a great inducement in such case to make an allowance.

Do you reside in a part of Nottinghamshire where compensation exists for the purchase of artificial food?—No, not at all in my neighbourhood; I know of only one instance, and that is a recent thing, where an allowance is made under an agreement for cake, but I believe generally it is not so through the county of Nottingham.

Admitting, as in the question it is proposed to do, that the Lincolnshire system of compensation requires little or no interference, what difficulty do you see practically in extending that system to other parts of the country, without entering into any detail as to the number of years of compensation in each case?—I see this, that the tenant might have a great claim, so that he might have an undue advantage upon quitting; and for this reason, he might claim to be paid for what he had expended in those improvements, notwithstanding

he might have his land still in a bad state of cultivation; for according to the system of valuing outgoing tenant right, but very little difference, if any, is made between good cultivation and bad; I have frequently seen where, although the cultivation has been very moderate indeed, the same allowance has been made as where it was well done.

Are you of opinion that the landlord ought to have a set off against the claim for improvement, supposing the land were full of couch?—Yes; where it had been badly followed I would make a deduction, and make a charge upon the outgoing tenant for dilapidations, for improper management; that ought to be the case.

Or if any cross-cropping had existed?—Yes; that again shows the necessity of an agreement; there wants nothing but an agreement between the landlord and the tenant. If in every case there were a specific agreement, each party would know how he stood and would know his relative situation; and on all estates, except those let by tenants for life, the parties are competent to make their own agreements; a tenant for life I think could not make certain allowances without the sanction of the legislature.

You have stated that the objection is to the outgoing tenant giving up his farm in bad condition; have you any other practical objection to state to the application of the Lincolnshire system to other parts of the country?—Yes; I think it is objectionable that when the owner and the occupier are both competent to make an agreement, that there should be any interference with them at all.

The committee understand you to object to the principle of interference, but they do not understand you to state any other practical difficulty but that you have already mentioned?—There is this, that if it were left to the tenant to go to what extent he pleased, the landlord might have his estate very much encumbered, and on the tenant giving up the farm he might have a very large sum to pay, because it is to the landlord and not to the succeeding tenant that the outgoing tenant looks for his compensation.

What are the points in which you think the landlord ought to have power to check such an expenditure?—I think that the tenant should not have any claim against the landlord for under-draining, unless the landlord previously consented.

Do you think the landlord's previous consent should be required for what is called in Lincolnshire marling the land, what in the south country is called chalking?—In respect to marling and chalking, if I understand rightly the allowance, it is that the tenant is paid if he does not get a crop of corn; if he has got a crop of corn I am not aware that there is any claim for allowance where marl has been used.

Are you speaking now of soft marl or of chalk?—Of chalk. I am aware that he ought to have it, but that is a matter between the landlord and tenant; that would adjust itself, I think.

Are you not aware that the period of compensation for chalking on the Lincolnshire wolds extends over several years?—I am not; I think it is not generally, but those nearer the wolds than I am can speak better to that than I can. I think it has been a very recent custom wherever it is allowed; I think it is not of a great many years' standing, but I have no doubt it may be allowed in some instances. I am not aware that it is given; at least I am not aware that the tenant is in this position, that if he chose to lay on chalk without conferring with his landlord, that he should have a legitimate claim to be paid: I believe there are instances, certainly, of tenants for life where they could not have a legal claim.

You think that in draining and chalking that the

landlord's consent should be necessary?—Yes, do.

Mr. NEWDEGATE.] Do you think that the custom of Lincolnshire, if adopted by the Legislature and enforced upon the rest of England, would suit all cases?—I think a general legislative enactment to that effect would have an injurious tendency; it would tend to destroy the present confidence between landlord and tenant, and I think it would cause very frequent change in occupation, inasmuch as there are tenants, who when they have great tenant right upon their farm, might give a landlord notice to leave, and to take another farm to create another great tenant right upon that; that would frequently occur.

CHAIRMAN.] Have you found any cases of that kind in Lincolnshire even?—I have found that when there is a heavy tenant right upon a farm, the tenant cares less about giving up than where he has not a great tenant right: I am speaking now of Nottinghamshire.

Are you speaking of a compensation for improvements, or of the away-going crop and tillages?—No, I am not speaking of the away-going crops; I am speaking of land that has been improved by bone manure, with perhaps only one year exhausted, and then there is a very heavy claim for compensation; and then a tenant, if he sees a chance of taking a farm with a light tenant right upon it, there is an inducement to him to give up his farm to receive a great tenant right, and take to the other that has less upon it; that would frequently be the case if there were a general legislative enactment.

You find that the tenant leaves a farm where he has a claim for compensation for purchased manure, and goes to another farm?—Yes, he would look out for another; that would cause the tenantry to be more unsettled, and they would have less confidence in the landlord than they have now.

Do the tenancies in Lincolnshire go on from generation to generation in many cases?—Yes, and Nottingham too; they are remarkable for it, and that is the reason why no leases are wanted or expected.

Evidence of Mr. WILLIAM SMITH.

Mr. NEWDEGATE.] You are resident at West Raisin, in Lincolnshire?—I am.

And you have occupied land extensively?—Yes.

Do you hold land at present?—Yes.

To what extent?—I hold at present about 300 acres. I a short time ago occupied about 600 acres, but having taken several agencies I gave up a part of my occupation.

Are you generally acquainted with the customs prevailing in Lincolnshire?—I am.

Do you remember the growth of the custom in Lincolnshire, and its beginning?—Yes; I have lived in Lincolnshire about 30 years.

And have you observed that the custom has grown up correlatively with the improvement of agriculture?—Yes, it has.

Do you consider that it has followed or preceded the improvements generally?—I think the improvement was first of all; it was encouraged by the confidence that existed between landlord and tenant, and in consequence of that improvement the custom has arisen.

Are you of opinion that the same results would become apparent in other districts?—I am, certainly.

With equally advantageous results?—Yes.

Do you think it necessary that the custom should be enforced by legislative enactment upon the counties where it does not at present exist?—I do not think that necessary.

You think the force of circumstances sufficient for its introduction?—Yes.

And you have seen its beneficial results in Lincolnshire?—Yes.

You must have been concerned in several valuations; do you think the principle upon which the compensation is awarded by the arbitrators in Lincolnshire is satisfactory?—No, I do not think the principle is satisfactory by any means.

Not sufficiently so to justify its enactment by law?—Certainly not.

Wherein does it fail?—Because the system between one tenant right valuer and another varies so much, according to circumstances.

Do you think it would be possible by law to regulate it?—No.

Do you think the obliging the valuers to state the different items of their valuations, with the sums annexed, would tend to render the operation of their awards more equitable?—I think it would, but the subjects of valuation vary so much in different districts. There are circumstances where those customs vary in many different districts, according to the will frequently of those valuers.

Then the best means of ascertaining whether the award is just would be to have the award in such a form that it might be easily accessible to a third party?—Certainly.

You do not think that it would be desirable to render compensation from the landlord to the outgoing tenant compulsory by law?—I think not.

What are your objections to that?—I think not more than it is at present; at present I apprehend that in the absence of agreements there is a sufficient custom that would enable a tenant always to recover for his unexhausted improvements, such as manures, or for working his land, and for under-draining or marling.

Are you speaking of Lincolnshire exclusively, or does your answer extend to other counties?—I am speaking of Lincolnshire principally; indeed I am speaking of Lincolnshire now exclusively. I have the care of several considerable estates in Lincolnshire, and all those estates under my own care are under special agreements; I have had occasion to look over large estates which are regulated only by the custom of the country.

Do you consider the special agreements preferable?—Yes, certainly.

Have you a form you could submit to the committee of the agreement you consider desirable?—Yes, I have. (*The Witness produced the same.*)

Would you object to submitting that form to the committee?—No, certainly not; I have made two or three observations here in writing, which I wish to have an opportunity of explaining.

Would you have the kindness to read them and explain them to the committee?—

Sir J. TROLLOPE.] Does it contain compensation clauses?—Yes, it contains compensation clauses.

For what articles?—For labour and for manures.

For draining?—Yes.

Anything for buildings?—No.

On the tenant quitting, is there any power to remove the buildings, or to sell them to the landlord or to the incoming tenant?—No; but on the contrary, to prevent them doing so, except by special agreement to the contrary. This agreement is to direct what the valuer shall value, and value only, and that beyond that they shall have no power.

Are the subjects of valuation contained in a single clause in that agreement?—They are contained in various clauses, but the principal subjects of allowance are contained in one clause.

Will you read that clause?—Perhaps I may be allowed to read the previous clause that relates to the quitting: “The tenant to sow wheat on all land in due and proper course to be sown with wheat, the autumn preceding the expiration of his tenancy; also to give up possession of all the arable land on the 1st day of February preceding the expiration of his tenancy, with the exception of one-half of the turnip land, two-thirds of which remaining quantity of turnip land shall be given up on the 5th day of March, and the remainder, with the buildings and the other land and premises, on the 6th day of April. To find good and sufficient stable room for cart horses, with all accommodation for the same, on the said premises, without any allowance for the same, from the said 1st day of February to the 6th day of April; and shall leave for the use of the landlord, or the incoming tenant, tons of wheat straw, properly stacked in the stack-yard, and tons of hay or seeds, on the 1st day of February, the value thereof to be fixed as after-mentioned. The tenant to be allowed the full cost price of all bones (exclusive of the expense of leading and labour), and for all lime that shall have been used the summer preceding, and the like for all other bones and lime, deducting in proportion of one-third part for each and every crop of corn or grain, clover or seeds, since the time the bones or lime were laid on the land, and also the cost price of any horse, cattle, or pig manure which shall have been purchased, laid on and spread on any part of the said land during the last year, from which no crop of corn or grass has been taken; but if a crop of corn or grass has been taken, then one-half shall be allowed; and also the cost price, with the labour of sowing all grass and clover seeds that shall have been sown the year preceding the expiration of his tenancy, if they have not been stocked after Old Michaelmas; also the value of all manure made in the fold-yard, stables, or buildings, from the last year's produce of the farm, or from any oil-cake that may have been used in the winter preceding the expiration of the tenancy, such additional value to be ascertained at one-third part of the cost price of the cake, exclusive of the carriage.” If I may be allowed to make one observation in regard to what Mr. Parkinson said about the value of the manure, that he did not approve of the outgoing tenant being paid for the value of the manure and for the cake, I think the committee will observe that in this agreement I have guarded against that, because although the manure is the property of the tenant, he is to be allowed for the value of the manure arising from the last year's produce of the farm; therefore he is entitled to the value of the manure from the last year's produce of the farm, and also for one-third of the oil-cake that has been consumed; so that he is not paid for the manure both ways, but he is paid for the manure that arises from the last year's produce, and the value also of the oil-cake used in the proportion consumed. “Also the value of all the labour done to the clay land that has been ploughed not less than five times in a good, proper, and husbandlike manner, and well and regularly summer followed the year preceding, but not otherwise, and for the seed wheat sown on the same; and for the seed and labour of once ploughing, with harrowing and sowing, of all the land sown with wheat in proper course, according to this agreement. Also the full cost of the labour of leading and putting into the ground any draining tiles that may have been properly put in during the year preceding the expiration of the tenancy, if no crop of corn or grass has been taken therefrom since such draining; and if one crop of corn or grass has been taken, then one-half of such expense as aforesaid shall be allowed; but if two crops of corn or grass have been taken since

such draining, then no allowance whatever shall be claimed or paid.” Now that is where the landlord finds the tiles, according to this agreement he binds himself to find his tenants a sufficient number of tiles; but where the landlord requires the tenant to find both tiles and labour, then the allowances are varied; they are generally about five years, or as much as seven years, upon those estates; but it may be found necessary to vary those allowances; they are not the same upon every estate; some require more and some less. The practice in Lincolnshire has been in draining clay land, for the tiles to be put in at the depth of about 18 inches; I have drained myself, I regret to say, several thousand acres that have been under my care, where I put the tiles in from 18 to 20 inches, and from that to two feet deep; and now I thought it necessary to advise my employers and tenants to take up those tiles, and of course to remove them (some of those tiles are broken by the operation of taking up), and to put them in at the depth of three to four feet; in that case the tenant is entitled to have an allowance over a greater number of years than he had before; and then I propose in that case that his labour shall extend over five years instead of three, as before.

CHAIRMAN.] Have you any allowance for chalking in that agreement?—Yes; I will go on if you please: “Also the cost of marling or claying any of the wold or carr, or sand lands, that shall have been done in a proper manner in the year preceding the expiration of the tenancy, and so on, deducting one-seventh part of the expense, and so in proportion for seven years.” By the word marling is also meant chalking. That has been altered since this agreement was printed. It was before only extended over three years. I thought it right to advise that the allowance should extend further, inasmuch as in marling and claying, the tenant frequently derives very little benefit from it immediately after it is laid on; he loses his crop partly the first year, and after that he does not derive so much benefit as at the end of three or four years, and therefore he has not had in the three years sufficient benefit, and it ought to be extended over seven years. And perhaps I may be allowed to make another observation here. I have a clause at the end of this agreement: “And it is hereby declared and agreed by and between the parties hereto, that the several matters hereinbefore particularly mentioned and specified as subjects of valuation and allowance to the out-going tenant shall be the only matters into which such valuers or arbitrators shall have power or authority to enter into, without the special agreement and direction in writing of the parties to the reference, any law, usage, or custom to the contrary notwithstanding.” And why I found it necessary to do that was, that there are many allowances that the tenant-right valuers are in the habit of making to the tenants that are not contained in those agreements; that was the reason why I proposed that clause.

MR. NEWDEGATE.] Then from the observations you have made, the committee are to understand that the custom, even in Lincolnshire, is so progressive as to have induced you to make an alteration in that agreement, even since it was printed?—Ye.

When was it printed?—The 1st of this agreement I have had in use now for the last ten years; I altered it about ten years ago.

And those alterations in writing have been made lately?—Those alterations have been made lately, within the last two years.

Then is it your opinion that any legislative rule should be laid down which should be binding and incapable of such alterations as those that you have enumerated to the committee?—I think not; for if it were left to the consideration of the arbitrators, I am quite sure that when these matters are left to arbitration of two persons,

representing the landlord and representing the tenant, I know from my own experience that great abuses are likely to be introduced, and charges brought upon estates that have no right to be.

Then your opinion is that no law and no custom can prove so advantageous to the cultivation of estates and the just interests of the tenants as a mutual agreement specifying their relative interests?—Certainly not; because special agreements adapted to particular classes of property are much more easily made, and in fact they are the only things by which property can be managed, in my opinion; it is impossible to have any general legislative enactment that could apply to a whole county, much more to the whole kingdom.

But you are of opinion that the system upon which the awards are drawn should be rendered more specific?—Yes, I think so, certainly.

And are you of opinion that tenants for life should have the power of charging estates with a moderate sum for compensation for improvement?—Yes, I think so, particularly as regards building and under-draining and for inclosing.

What may be termed permanent improvements?—Yes.

Are you of opinion that the law respecting fixtures should be rendered similar with respect to agricultural property to that which exists with respect to trading property?—Yes, I think it should.

Do you think further compulsory enactment, in relation to the matters now treated by custom and agreements, would be injurious?—I think it would.

Have you heard a general desire for any such legislative enactment expressed amongst the farmers of the district with which you are acquainted?—No, but on the contrary, the farmers generally think that it would be of no service to them.

Do you think that the law as it exists at present with respect to dilapidations would be sufficient?—I think it is better where there are special agreements than where there are not special agreements; I think it is very inoperative with respect to dilapidations.

And if any law were passed to give compensation to the tenant, would not it be requisite at the same time to define the law with respect to dilapidations and bad culture?—Certainly it would, and that should be especially specified.

But combining those two objects, are you of opinion that it is necessary or advisable to pass a general enactment for purposes other than those you have specified?—I think not.

Sir J. TROLLOPE.] With regard to dilapidations and injury done to property by tenants, does not the law as it stands render it much more difficult at the present moment for land-owners or their agents to recover than for the tenants to recover for tenant-right?—Yes.

The process is infinitely more ready for the tenant than for the landlord?—Yes, much more so.

Then the advantage of good husbandry is on the side of the tenant, and the bad husbandry not to the advantage of the landlord?—Yes; the landlord has no remedy against his tenant except by action, except he has been tied under penalties by special agreement, the same as I have in this agreement.

You are chiefly conversant with North Lincolnshire?—Yes, but I have something to do in the south as well.

The custom of tenant-right is not quite similar in both districts?—It varies in several districts, even in North Lincolnshire.

Have you ever known any difficulty in tenants in that county recovering what they were entitled to from the in-coming tenant?—The difficulty is much less

now than it was a few years ago, inasmuch as the customs were not defined then as they are now.

Have they not been recognised by courts of law?—Yes, they have, partly so; that is, that the custom in a particular district has bound the parties in a court of law by the custom of that district.

Do you see any fear that if the Legislature was to interfere in this matter there might be a bar to further improvement by being more limited and defined by an act of parliament?—I do not see how any legislative enactment could be passed, except it was defined what the subjects of allowances should be.

And the terms of them?—Yes, and the terms of them; and if those terms were defined by law, the tenant would be very shy indeed about making any improvements beyond what he was entitled to by law.

Then if such was the case, would not that constant improvement in agriculture that you have seen going on for the past 30 years in Lincolnshire meet with some discouragement?—I think it would; I think it would lessen that confidence that now exists between landlord and tenant.

You state that it is not the requirement of your part of the country generally among the tenantry?—Not those that I am in connexion with, and it is a matter that has been very much discussed at the public ordinaries.

Throughout the country?—Yes, throughout the country.

On those estates where the tenant is bound down by agreement or leases, do you think they would require that?—I think not, because I am quite persuaded that very shortly on all estates it will be found desirable to both tenant and landlord that they should farm under agreements; it would be to the interest of both parties that they should.

Any spirited improvement would be more binding and stronger than the legislature in this matter?—I think so.

CHAIRMAN.] You say that the tenants in Lincolnshire now have no difficulty in recovering compensation since the custom of the country has become defined?—Not so much so since the customs have been more defined, as certain customs are recognised in certain districts.

There was some difficulty during the progress and formation of the custom?—Yes, there was.

Was there a degree of uncertainty in the mind of a tenant whether he would obtain compensation or not?—The great difficulty was with regard to fixtures and buildings, not manures.

You were understood to say that you think some alterations are required with regard to buildings and inclosing?—Yes; I think it would be very desirable if the owner of a settled estate had power to agree with his tenant, in case it is not convenient to spend the money himself, that the tenant should do so, and that he should be entitled to be compensated, under certain provisions.

You have read to the committee a portion of the agreement for compensation under certain heads; it need scarcely be asked you whether, in your opinion, those are proper compensations?—I think they are, and they are what the tenants are perfectly satisfied with.

Are they advantageous to the tenant as well as the landlord?—I think so.

Do you find any difficulty when you have a new tenant in obtaining a man of sufficient capital to pay such compensations to the out-going tenant?—I find no difficulty in that, inasmuch as the better condition the farm is in, with the more pleasure a man enters into it, and the more readily, particularly with regard

to the manures. I have made an alteration on all the estates I have the care of, with regard to the manures. It was formerly the practice, and is now very much so upon several estates, that when a tenant has notice to quit his farm, which is at Michaelmas, in October, he immediately advertises his stock to be sold; he sells all his stock off, and he lets the catage of his hay and straw; his straw of course, without the manure belongs to him, will be worth very little if he is not entitled to be paid for oil-cake; and he frequently does not use his straw at all, and the consequence has been that he makes no manure, or scarcely any manure; as the manure belongs to his landlord he takes no care about the manure at all; he leaves it dispersed about and leaves the incoming tenant with very little manure to enter upon; whereas if the manure were made his property, it is then his interest to husband that in the same manner as he does the other part of his farm, and he leaves a quantity of good manure upon the farm, which I think it is much more to the interest of the incoming tenant to pay for than to have the straw for nothing, or being converted into manure for nothing.

If you were entering upon business again, would you rather take to a farm where you got that dung, such as it was, for nothing, and the land out of condition, or would you, as a man of business, rather pay such prices as you have stated to the committee?—I would very much rather pay such prices as I have stated to the committee.

You think it would be cheaper in the long run?—Yes, certainly.

Admitting there is very little reason to interfere in any way with the custom of Lincolnshire, what obstacles do you see in the way of rendering the custom of Lincolnshire applicable to other counties at a distance subject to the Lincolnshire custom, it so being modified by private agreement between landlord and tenant?—I see no objection to the custom of Lincolnshire being introduced into other counties, but I see this objection to the present custom of Lincolnshire being made a permanent law; I think times and circumstances may so alter that the customs must be altered, and it would be desirable for the landlord and tenant to be free.

Every practical man must admit it would not be possible to lay down specific terms applicable to all parts of England; supposing the principle of an equitable tenant-right were laid down for Hampshire, what would be the practical difficulties to be guarded against?—Not being acquainted with Hampshire, I cannot say how far the customs of Lincolnshire would be applicable; the difference of custom of one part of Lincolnshire is not quite applicable to other parts of Lincolnshire; the custom upon the wolds is not applicable to the clays, and the like with regard to the fens.

What would be the difficulty in the application of the principle of the Lincolnshire customs to other counties, subject as it is in Lincolnshire to agreements between landlord and tenant?—I do not see that there would be any objection to applying it; the same might apply to other counties as applies to Lincolnshire; where the custom of Lincolnshire works well it might work well in other counties.

You were understood to say that the farmers of Lincolnshire are content with the custom as it now exists, and they do not wish it to be altered?—I am not aware that the generality of farmers do; there may be some few that do, but it is my impression that the generality of them do not; certainly not those with whom I am connected.

It being very natural that the Lincolnshire farmers should be satisfied with a very excellent system of ten-

ant-right, will you point out to the committee what would be the practical difficulties that you would apprehend in the application of the same principle to other counties where the farmers are less fortunate?—I do not see that there would be any difficulty in applying the same principle to other counties similarly situated; but they may not be similarly situated; I mean as to the amount of allowances.

It need scarcely be asked of you whether the compensation on a high wold farm is applicable to a fen farm; of course the practice is different there?—Certainly it is.

What would be the difficulty of laying down the principle generally in other counties as in Lincolnshire, subject to agreement between landlord and tenant, subject, of course, to the variation arising from the very different nature of the soil which exists in Lincolnshire, and which would also probably exist in other counties?—I see no greater difficulty with regard to other counties than Lincolnshire; there would be no more difficulty than in Lincolnshire, but that times vary customs, inasmuch as in this agreement we formerly allowed three years for the labour of under-draining; now the system is altogether changed; it would be exceedingly hard under this agreement now if the incoming tenant were to be charged with a portion of this under-draining that is to be taken up the next year perhaps, and laid down double the depth: this would apply with other things; in farms improvements are taking place constantly, and it appears to me to be a barrier against any legislative enactment as to the various items that should be subjects of allowance.

Still you would not say that under-draining should not be a subject of allowance in Lincolnshire?—I would say it should be in every county.

You would object to any act defining the depth at which the drains should be laid, or the time for which the compensation should be taken?—Yes, the time for which the compensation should be taken, and the question is in the absence of any agreement between the landlord and tenant; I suppose it is proposed to be left to the tenant-right valuers, and I consider that they are incompetent to form any general rule; you will, have as many different opinions as different districts, from those valuers.

How do they manage in Lincolnshire?—They manage in a very contradictory way very frequently; I have known very often, cases where the tenant-right valuer has been valuing on one farm for the incoming tenant, and where he has been valuing for the outgoing tenant on another; he has made most extravagant claims for items of compensation and for the amount of that compensation, and he has gone the next week three or four miles off, and there he has quite altered his tone where he has been for the other party. The very same thing in one instance came before me, where I was the agent for both owners, and there I had to call this man to account; the party who met him the second time did not know that he had been concerned the day before, and I there had to point out the discrepancy in what he was disposed to allow and what he claimed for before; and that appears to me to be one great objection in leaving those allowances to arbitration.

How do you settle at present in Lincolnshire; what was the upshot in those two cases?—It was referred to an umpire; but that was merely a question of value.

Sir J. TROLLOPE.] If a person valued in that sort of way would he be much employed; that is, would there be much confidence in such a person?—I am sorry to say that it is very common with the incoming tenant to employ the valuer who will give him the most.

CHAIRMAN.] Then in both cases the claim was set.

ted by an umpire?—In both cases it was settled by an umpire; they were referred to the agreement; there was a written agreement which directed the subjects of allowance.

Mr. NEWDEGATE.] In the absence of a written agreement the solution of that difficulty would only have been by a jury?—It would have been by a jury, because I should have thought it my duty, if they had made an award, to have ordered the in-coming tenant not to have paid the amount of the award.

Do you conceive that any other tribunal is so competent to decide such cases of difference as a jury in a court of law?—No, certainly not.

Do you think it positively necessary to have those cases decided by a court of law, by competent legal advice and an impartial jury?—It would be necessary that there should be a power of appeal.

CHAIRMAN.] In those two cases, supposing there had been no agreement, would not the umpire have decided as to the compensation?—In all probability the landlord would have ordered the tenant not to have paid it if he found that his estate was charged with items that were not the subject of tenant-right, or that it was property belonging to his freehold, which is very often the case with regard to fixtures.

You are understood then to say, that in the case where the valuer acted in opposition to himself in two different cases, that he endeavoured to bring in matters which were not properly subject of tenant-right?—Yes.

Sir J. TROLLOPE.] You have been asked by the chairman some questions as to the introduction of tenant-right in Hampshire and other distant counties; is there any difficulty or obstruction to the landowners or their agents now introducing these customs there without legislation?—None. I apprehend they would be quite as likely to do so then as under any legislative enactment; if it were shown to them that the system of Lincolnshire was better than any other, they would be inclined to adopt it.

That depends upon whether there was the wish to encourage good husbandry?—Yes.

Have you any estate under your management on lease?—None.

Have you ever considered how this subject would act upon estates now let on lease?—I have read over the present bill, and I think it would operate very seriously indeed; I think there is one clause, that where the tenant has more than five years to run for his lease, that he should be entitled, under the provision of this act, to compensation.

Even though there may be specified agreements attached to that lease, is that compensation to be allowed?—Yes; that would introduce a new system, for this lease may have been granted in consequence of this farm being out of condition, and it may have been let at a low rate in consequence of that, the tenant having to lay out considerable sums of money in improvements upon it; besides having his farm at a low rent, he would be paid over again under this act of parliament.

Then in fact it would virtually break all leases that have more than five years to run?—I think so, from what I have read of it.

CHAIRMAN.] Are the committee to understand you to say that that clause would affect existing leases?—I certainly understand it so.

You are not aware then that it is entirely prospective, and only affects leases hereafter to be granted?—I understand that it did affect existing leases.

Mr. NEWDEGATE.] Which bill are you speaking of?—The present bill.

1st of June, 1848.

MEMBERS PRESENT.

Mr. Bouverie	Sir C. Lemon
Mr. Burroughs	Mr. Moody
Mr. Colvile	Mr. Pusey
Mr. Denison	Sir John Trollope.
Mr. Tatton Egerton	

PHILIP PUSEY, ESQ., IN THE CHAIR.

Evidence of Mr. GEORGE LEGARD.

Sir J. TROLLOPE.] You are a large occupier of land in the East Riding of Yorkshire?—I am.

To what extent do you occupy?—I hold two farms of about 1,400 acres, or rather more altogether.

All under one landlord?—Under two landlords.

Is it entirely rented land?—Yes; that is, the land that I have in my own hands is entirely rented.

You wrote an essay for a prize given by the Royal Agricultural Society, and obtained the prize?—I did.

What county did it apply to?—It was for the East Riding of Yorkshire.

In what year was that?—In this present year 1848.

Upon what terms do you hold those farms?—Upon yearly tenancy, both of them.

Do you consider that generally farms in the East Riding are let upon terms satisfactory to the tenants?—Yes, as far as I know.

Will you describe the mode of occupation?—From year to year is the usual term; and at quitting and entering there is an away-going crop.

Is the farming in a good and high state, generally speaking?—I should say it is on part of the East Riding, not the whole; the East Riding consists of three different descriptions of country.

Are your farms upon the wold?—Mine are just on the eastern edge of the wold.

Is it upon a chalk soil?—The substratum is throughout my farms upon chalk.

Do you know the wold district of Lincolnshire?—I have once seen it.

Then you do not know whether the mode of cultivation in the East Riding is similar to that of North Lincolnshire?—The part of North Lincolnshire I saw, resembled it exactly, on the four course system.

Do you consider that in your district the farming is generally good and of high character?—As far as the wolds are concerned, I should say it was; I cannot say so much for the lower parts.

Do you find generally a disposition to improve in the cultivation of the soil?—The wold farmers show it.

Can you describe the custom of entry as to tenant-right?—The usual custom is, that the out-going tenant has a certain proportion of his arable land to fallow. The growing crop consists of generally one-third of the arable part of his farm; besides that he has generally, but not always, the manure of the last year, that is, the last year's made manure; I think I may say that is the custom generally.

Only the manure?—Only the manure.

Is the tenant paid for that?—The out-going tenant is paid for that in most cases.

Is he allowed for bones?—No.

Nor cake?—Of late years there has been some compensation introduced into the agreements; it was not so formerly; it is only within the last few years it has been the custom to feed with oil-cake; since that custom has come in, the practice has been gradually introduced of allowing compensation for a small part of the oil-cake that has been used in the last two years.

Allowing the away-going crop, you consider the tenant takes one crop after the manuring?—One crop after the manuring, and he may select that part of the farm that he chooses, not exceeding one-third, for the away-going crop.

Is that paid on valuation?—Yes, and taken by the in-coming tenant.

That covers the manuring for one crop?—Yes, it would.

You still then have the power to obtain payment on leaving the farm, for the proportion of the manure and the subsequent crop?—The manure that has been made in the last year is generally the property of the tenant and valued to the in-coming tenant.

Do you think on the whole it would be advantageous in your district that the legislature should regulate the terms on which land should be let or entered upon?—I do not think it would.

You do not think a legislative enactment ought to take place to regulate tenant-right?—I do not think it is necessary.

Can you offer any reasons to the committee why such a feeling is entertained in your district?—It appears to me that improvements have gone on in farming without it, and it appears to me also that there is a very fair understanding between landlords and tenants, and therefore I think it is not wanted for improvement, and I think it would rather interfere with that good understanding between landlord and tenant if it was introduced.

Do you think it would be any check to any further improvements?—It does not seem to me that it would cause improvements to go on; whether it would check them or not I can hardly say.

Do you think on the whole the tenants do not desire any legislative security for unexhausted improvements?—No, not in my part of the country.

Are they allowed for drainage?—No, not as far as I have heard: it is not the custom of the country.

Your immediate district does not require any?—Not the wolds, but in the low country in Holderness and the parts westward of the wolds where a good deal has been done, I never heard that a tenant could claim anything on quitting.

Is it allowed?—I think not, because I believe in most cases it has been done entirely by the landlord, or partly by the landlord and partly by the tenant, and a great part of the expense has been borne by the landlord finding tiles and flats, and therefore the tenant is usually thought to have derived the advantage of his outlay of capital in the crop that follows.

In one crop?—Yes, in one crop.

Are there many farms or any within your knowledge let upon agreement?—They are mostly let upon agreement, not upon leases.

In those agreements have any compensation clauses ever been introduced to your knowledge?—In the agreements that I farm under, (and one of my farms is under a very extensive proprietor, Sir Tatton Sykes) in his agreements within a few years there has been a compensation clause been introduced with respect to oil-cake, not for anything else. I believe not in any one of his agreements has any compensation clause been introduced except as to oil-cake.

Are not bones extensively used?—Yes, bones have been extensively used on the wolds.

But they are not allowed for?—No, except in the away-going crop; the tenant has the power of taking the crop where it has been boned the year before.

Do you think the away-going crop system is capable of being adapted to progressive improvement in agriculture?—I think that improvements have gone on

very fairly under it, and therefore I should say it is capable of being adapted.

Do you mind in your district?—There has been some chalking on part of the wolds, but not very much; I may say very little perhaps, but it has been done.

It is a beneficial process on the wolds?—It seems to me to have been exceedingly beneficial, and very rapid in its effects; there is a particular sort of soil that refers to.

Can you speak as to its durability?—No, I do not think, as far as I know, that any chalking has been done on the wolds beyond the last 10 or 12 years.

Are the farm buildings entirely erected by the landlords, or any portion of them by the tenants?—On the wolds the farm buildings are pretty good; not very good; improvements ought to be made in them, and have been made in them from time to time; a good deal is done by the tenant.

Have you any objection to the tenant having the power of taking the buildings, if on quitting the landlord does not take them?—No; it would be an advantage.

He should have the power to remove them, in case the landlord refuses to take them at a valuation?—I think it would be a good thing.

Is much done by the tenant?—Not entirely; the landlord has in many cases found the materials, and the tenant the labour.

In cases where the expense has been equally borne by landlord and tenant, or rather, by the landlord finding the materials, should you think, in that case, the tenant was entitled to any compensation for buildings?—In that case, no; those are chiefly sheds, and made for the immediate advantage of the tenant, and he would, probably, by feeding cattle in them, get a sufficient compensation.

That would depend upon the number of years he had occupied?—Yes.

Upon the whole, you think it would be advisable to leave matters, as regards entry to farms, to the present system in your district, rather than interfering by substituting legislative enactment?—I should prefer that; and I think it would meet the wishes of the tenantry of that part of the county.

CHAIRMAN.] The wolds of Yorkshire are not unlike the wolds of Lincolnshire on the other side of the Humber, are they?—I think they are; they are higher.

You have high wold and low wold in Yorkshire?—Some parts are about 800 feet high.

Did the improvement of the Yorkshire wolds begin about the same time as the improvement of the Lincolnshire wolds?—I should say the improvement of the Yorkshire wolds began about the beginning of the present century, or somewhat later.

Then it was about the same time?—Yes, I should suppose so.

Not later than the Lincolnshire wolds?—Not much.

You say very little land has been chalked on the Yorkshire wolds?—Not much in proportion to the number of acres.

Is not there a good deal of deep land in the high wolds that would be much benefited by chalking?—It is that part chiefly there, I think, that would be benefited; on the north part.

Are you not subject to the disease of fingers and toes on turnips?—On that soil generally, unless it is marled.

And also a very troublesome weed, the spurry?—Yes, it is very pernicious indeed.

Is chalking a cure for that?—I have seen a remarkable instance of cure for it in one year, in the course of one crop.

And chalking completely alters the character of that soil?—I believe entirely.

You say that it is not general to make allowance for cake on the wolds?—Yes, I think it is; I know it is on Sir Tatton Sykes' estate; and I have been told that other large proprietors are including it in their agreements.

Is there not some degree of neglect in making manures on the wolds?—Yes, constantly; no doubt there is.

Do you not sometimes find large heaps of straw lying half a mile from the farm-yard, that have been threshed with the machine, and left there, instead of being taken home to be made into dung?—Yes, that is very true.

In your opinion would the increased use of cake be advantageous to the wold farmers?—I think it would, certainly.

Would you give the cake to cattle or sheep?—We give it to both.

You think it will be advantageous generally to increase the cake for cattle as well as sheep?—Yes.

Is not there in the low district on the east of the wolds a good deal of land that requires draining?—That is the Holderness side; it has been generally drained within the last 10 years.

Is there not still a great deal of land requiring drainage?—Yes, in the Holderness; that would be improved by draining, and is being improved pretty rapidly.

Still, though the advantages of draining have been known for some time, there is land to a great extent not drained?—Yes, I think so, in Holderness.

Have not increased facilities been given there by improving the outfall?—Yes, not very recently; those have been made some years.

Still there is a great deal of land undrained?—I believe so.

Now, to go to the west side of the wolds; is not there a cold, wet flat country, that requires a good deal of draining there?—It is quite a flat country.

Does not it require draining?—It does require draining; but it is rather difficult to drain from want of fall.

Still, is there any insuperable difficulty?—I think in parts of it there is; the fall must be first improved before you could drain deep enough.

The fall might be improved?—Yes, if there were some great general design; it would extend through a large district.

Is not there a good deal of land that has a sufficient outfall that might be drained?—Yes; but I always hear that they can hardly go deep enough.

They do not keep their ditches well scoured?—No; but it is a very flat district.

In a part of that district they go upon the old three-shift course, two corn crops and a fallow?—That is the common way.

Is not that a bad system?—A very bad system.

Antiquated?—Quite so.

You have also a long narrow tract of land stretching from the Humber northward, which is very barren?—It is a sand.

Is not that capable of great improvement by marling?—Yes, by marling and draining, both.

Could you state to the Committee any instance of improvement that has been made on that barren land?—I know a case where a property of about 800 acres belonging to Mr. Denison, near Pocklington, has been improved.

Will you describe the mode?—The first process was to drain; the first expense was, I believe, to get a better outfall, which he did on that part of his estate,

and then to drain deeply; and afterwards he subsoiled the sandy land, finding that beneath the surface there was a hard, impenetrable sort of matter that might be broken up by subsoil plough. After that he marled that land, putting on about 100 or 120 cart loads of manure to an acre. Having done that he has let most of it.

What was the value of that land before it was improved?—I heard Mr. Denison say it was not worth 2s. 6d. an acre before; I recollect it well before it was done, and I know it very well now; and I am told it is now let for nearly a pound, if not a pound an acre.

Is there any land of the same character capable of the same improvement?—Yes, a considerable extent of it; and in other parts of it there has been something of the same sort done; Mr. Maxwell has done a great deal, and Mr. Hudson, the member for Sunderland.

Would you state to the Committee specifically what is your objection to any legislation on the subject?—I think that, as it appears to me, it would totally alter the present understanding between landlords and tenants. I cannot but think that if this was made compulsory, the rack-rent system would be introduced, and that farms would then probably be let to the highest bidder, instead of being now let at a moderate rent, the tenant carrying out such improvements from time to time as are requisite.

Then your objection is understood to be to any compulsory legislation?—Yes, I mean any compulsory legislation.

Would you have the same objection to a Bill that laid down a principle similar to the custom of Lincolnshire, but which allowed the landlord and tenant by mutual agreement, either to modify the compensation or to take themselves out of it altogether?—If they had the power of taking themselves out of it altogether, I should not see any objection to it myself; but all I can say is, that there is a very fair understanding at present, and I should be very fearful of that understanding being interrupted.

Though there is a fair understanding, it does not appear that some very obvious improvements, such as chalking for instance, which according to your account alters the character of the soil, and other improvements, have been carried out on the wolds of Yorkshire?—No; but I believe the advantage of chalking that sort of land is so great and so quick, that the tenant from year to year might do it, and I am persuaded he would get back all that he had laid out in the first crop.

Still, though the improvement of the Yorkshire wolds commenced quite as soon as that of the Lincolnshire wolds, and the Lincolnshire wolds have been entirely chalked, it seems this sort of improvement has been neglected in Yorkshire?—Probably it was not known, and it is not a large part of the wolds that is capable of that kind of improvement; it is only a certain portion of that particular sort of soil which is subject to those diseases spoken of.

The Yorkshire wold is an extensive district?—It is a very extensive district; it is said to contain about 300,000 to 400,000 acres; but with the exception of that sort of soil, chalk has been tried and has not been thought to have had such effect as to induce farmers to apply it.

The Committee understand you to say that on the shallow parts of the wolds, which contain already a great deal of calcareous matter, it is not found necessary?—I have tried it, and I could not see the advantage of it.

Still you have no doubt that on the deep wold land, the high wold land, it is most necessary?—It is most essential indeed there.

And it has been practised almost within sight of the Yorkshire wolds, on the south of the Humber, for the last 20 years?—The portion of the wolds that contains this sort of soil is to the north entirely, many miles from the Humber, 25 or 30 miles; and that part immediately opposite the Lincolnshire wolds does not consist of that sort of soil.

Though those high wold farmers are 25 miles from the Humber, they know what is going on in Lincolnshire?—Yes, by hearing, and some by seeing, perhaps.

Mr. DENISON.] Can you tell the Committee about what time the allowance for cake arose in your district?—On Sir Tatton Sykes' estate, the one which I am most acquainted with, it has been introduced within the last six or seven years, I think.

Can you tell the Committee how those allowances arose?—It was thought that it might encourage the farmers, I presume, to use it if they had given them a compensation for it on quitting.

Are you aware at all whether the use of cake having been begun at a time when no allowance was made, that questions arose among farmers, and difficulties presented themselves, which ended at last in this sort of accommodation of the matter?—I never heard of cases of that kind; it is possible there may have been such cases; I do not think that cake has been largely used till within the last few years on the wolds.

Cake has been very largely used in the wolds of Lincolnshire and in many other parts, you are aware, for the last 30 years?—Yes.

Can you account at all for the use of cake having been so slow in getting into the wolds of Yorkshire?—No, one cannot account for that exactly; it has not been the custom undoubtedly; I cannot really say why.

Your opinion is, that it was introduced into Sir Tatton Sykes' agreements under the impression that it would encourage the consumption of cake by the tenant?—It was thought, I presume, to be fair to give him that kind of compensation when he quitted.

Do you think that it extends beyond Sir Tatton Sykes' estate, and that it has reached what could be called the custom of the country yet?—No, I do not believe it has; I do not think it has become sufficiently general in the East Riding to acquire that sort of character.

Do you think if a question should arise upon the quitting of a farm, and reference should have to be made to the custom of the country, that the custom of the country would allow compensation for the use of cake?—No, I do not think it would.

Have you any doubt that it would be an advantage generally if the custom of the country should go so far as to allow a tenant a fair compensation for his use of cake?—It might be so, but yet it has not been largely given in the East Riding, and no such custom could be introduced; a great portion of the East Riding farmers are men of small capital, and I do not think they could go to the expense of it.

The wold farmers of the East Riding are not, generally speaking, small capitalists?—No; in their case it may have been introduced into their agreements; I know it has in Sir Tatton Sykes', who has 25,000 acres on the wolds, and I think it is possible that others may have introduced it.

Speaking of the wold district beyond Sir Tatton Sykes' estate, do you think if a question arose between the outgoing and incoming tenant, where a good deal of cake had been used, that the custom of the country would allow that man any share of his outlay in cake?—I do not believe it would.

Have you any doubt that it would be a fair thing,

where it had been used in a wise manner, that the tenant should have that?—I think it would be; I think even now he would have some sort of allowance in this way, that the manure has been generally last year's manure, and that belongs to the tenant; and I rather think, as far as I have heard, that the valuers in valuing that manure would take into consideration the quantity of oil-cake he had used the last winter.

If the custom of the country without any agreement would sanction that allowance in the manure, the custom of the country would give it?—The custom of the country certainly would in that way give him an allowance, because it would be valued in the manure; they would not look at the bills for the linseed cake.

How would you estimate the value of the proportion in the manure unless you have reference to the quantity that has been consumed?—The quantity that had been consumed would be applied for in some way or other by the valuers, and therefore they would come at some knowledge of the quantity in a certain kind of way, though there would not be quite a rigid one-third or one-fourth, as I am told it is in Lincolnshire, and as it is in the parts of the wolds referred to.

Do you not think that the allowance introduced into Sir Tatton Sykes' agreements is a good thing both for the landlord and tenant?—I do.

Then do you not think that if such an allowance were to extend generally, and were to prevail through the kingdom as the custom of the country, it would be an equally good thing?—Undoubtedly; if it is good in one case, it is in the other.

Then if you think an allowance for cake to the tenant is a good thing, is not an allowance for bones upon the same principle, and done in the same way, a good thing too?—It seems now that the away-going crop gives it to the tenant sufficiently, because he takes his away-going crop upon that part of his farm where the bones have been applied; the custom of sowing wheat upon the turnip land prevailing over the East Riding in many parts.

Do you think that the plan of the away-going crop is a good system of quitting and entering both for the outgoing and incoming tenant?—We certainly think so in the East Riding, because we have never attempted to alter it; we are satisfied with it.

Then you think that the tenant gets his allowance for bones by selecting that part of the farm from which he takes his away-going crop?—Yes, I do.

In the case of a district of country that requires draining, and where the tenant should undertake to underdrain the land, do you think it would be a good thing that tenants should devote their capital, where they possess it, to the improvement of the land?—Yes.

Then do you not think it would be a reasonable thing, that the tenants should be allowed compensation for draining upon the same principle as it is for cake and bones?—I cannot but think that the draining is much better done by the landlord.

The question refers to a case where the landlord is not disposed to do it, and where the tenant occupying a farm, and finds that his landlord is not willing, or is not able to undertake the draining, is himself disposed to undertake the draining of his land; do you not think that if it is good he should have compensation for bones and for oil-cake, it would be good both for the tenant and the landlord, that he should have an interest in so great a permanent improvement as draining?—If he did make an improvement of that sort, it is fair that he should have some advantage accruing.

Then may not the same question be asked with regard to such an improvement as marling or chalking the land upon districts where it is a real benefit?—I

cannot but think that, as far as I have ever seen, the benefit is so immediate from chalking, that there would be no necessity to look for compensation afterwards.

Suppose a man lays out a great sum of money in marling his land in the year 1828, and then dies, his family ought to reap that benefit?—So they would.

How would they reap the benefit?—In the first place, the crop would be his, or the property of his executors; and then the immediate crop following this chalking would repay them for anything laid out, as far as I am able to judge.

Are you not aware that the outlay in marling very often pays nothing the first year?—I saw some chalking done upon the property of a relation of mine on those northern wolds, a crop of oats; half was done, the other half undone; and he told me that where it was not chalked he reaped two quarters of oats an acre, and where it was chalked he reaped nine; and I am sure from the appearance of the stubble that I could believe that.

Supposing that the benefit of chalking the land should extend over several years, do you see any reason why the same principle of allowance should not be extended to that, that is extended to draining?—No, I do not see any reason why it should not be.

Then is not it your opinion, that everything which encourages a judicious expenditure of capital upon land is a good thing both for the tenant and the landlord?—Yes, I do indeed think so.

Do you not think that giving a tenant an interest in any expensive improvements of the sort that have been spoken of, and such as is done in the case of cake, would induce the tenant to lay out capital more freely than where he has no security at present?—In certain cases it might; I am quite willing to go so far as that.

Have you any doubt, that if agreements to that effect could be made between landlords and tenants that it would be a mutual advantage to both?—I think an arrangement that would be of mutual advantage to both might be effected between the parties.

Then you are understood to object to the direct interference of the legislature; you would not think anything a disadvantage that would conduce to an arrangement between landlords and tenants among themselves to this effect?—No, I do not think it could be productive of evil.

Evidence of Mr. WILLIAM LOFT.

Sir J. TROLLOPE.] You reside at Trasthorpe, in Lincolnshire?—I do.

Is that upon the Marsh land near the coast?—Yes, on the marsh land on the sea coast.

How far are you from the coast?—One mile.

Do you occupy more than one farm?—Yes, I occupy two.

Are both situated on the marsh district?—No; one is on the wold, near Horneastle.

You call those the South Wolds?—No; it is the Wolds.

Not the higher range?—Yes, it is a considerable height.

What is the extent of your cultivation?—About 500 acres each.

One is your own property?—The one on the marsh.

Is the mode of entry the same both on the wolds and the marsh?—No; not exactly.

When do you enter generally in that part of Lincolnshire?—Generally Lady-day; in some few instances May-day.

What part do you speak of?—Generally in Lincolnshire.

All over your district?—Yes.

Do you enter upon the house and buildings at the same time as the land?—No; they are held to May-day; the land to Old Lady-day.

Who does the repairs generally of the buildings of rented farms?—The tenant generally.

Are they under the agreement to do so?—Generally speaking they are; in many instances the landlord finds the materials.

Are you under any agreement as to the mode of cultivation?—When I first took the Wold farm, I took it very much out of condition; I took it for 14 years; that expired last Lady-day 12 months.

Have you renewed as tenant-at-will?—Yes.

Without any agreement or covenant?—Nothing more than a verbal agreement.

What is the rule with regard to the consumption of the produce of the farm; the corn crops?—The outgoing tenant consumes his own straw in the winter in the usual course.

Is he paid for it?—No, he is not.

The manure is left for the incoming tenant, free of any charge?—Yes.

When notice is given, what is the process of husbandry that a tenant going to give up his holding usually adopts?—He ploughs and sows in regular course.

And is paid for acts of husbandry?—Yes, he ploughs and sows in the usual course of husbandry; he is bound to do it himself properly, or allow the incoming tenant to come in and do it.

And when does the incoming tenant come in to sow the wheat?—Michaelmas; the 13th of October.

How is it as to the fallows?—They generally enter upon the fallows in December, and the spring crop Lady-day.

Are they allowed to enter to sow the spring corn before Lady-day?—Candlemas, sometimes.

In regard to the draining; have you done any on rented farms?—Yes.

Have you not occupied other farms?—Yes, I have.

To a considerable extent?—Not a very considerable extent; but I have occupied other farms as well.

In cases of drainage, where the tenant finds the tiles, is any allowance made?—It is a very common practice in Lincolnshire for a landlord to find materials, tiles for instance, the tenant putting them in.

Is any allowance made to a tenant on giving up a farm under those circumstances?—Not under those circumstances; there is, if he finds all the materials.

How long for?—From three to five or six years.

It varies according to the mode in which the work is done, whether it is deep or shallow draining?—Yes.

Is marling or claying done?—Yes.

Is there any allowance for that?—Yes.

For what period?—From three to seven years, I should say.

And liming?—Yes, and liming too.

Is that allowed for?—Yes, a great deal is used in the marsh district on the clay lands.

A great deal of that land has lately been converted from pasture land to tillage?—Yes, a great deal of it.

In that case you lime?—Yes.

What allowance is there for the lime?—Generally they allow three or four crops.

It is calculated by the crops, not by the year?—Yes.

In regard to bones, what is the allowance?—They never use them on the clay land, and in the wolds the general practice is to take the last three years and divide it by three; you get then one year's bone bill allowed; taking it on the average of the last three years.

With regard to oil-cake, is there any allowance?—It is getting to be the case very generally.

What is the allowance?—I know several instances myself on wold farms; I am allowed half the last year's cake-bill, and one-third of the year's before. Some are allowed only half of the last year's.

Whom do the buildings belong to?—The landlord.

If they are upon base stones they are removable?—Yes.

Are there other things taken into account by valuers when you leave a farm, such as gardens and fruit-trees?—Yes, everything of that kind is valued.

They are allowed for?—Yes.

What is the mode of valuation?—It is precisely the same as that proposed by the new Bill; the incoming tenant appoints one valuer and the outgoing tenant appoints another, and the two appoint an umpire.

When a decision is given of the valuers and the umpire, in what form is it given?—In a gross sum.

Not item by item?—There is no bill of particulars.

Is there any appeal from that decision?—There is no appeal at all. I think it is a very great source of complaint that they should not produce a bill of particulars, and that there should be no appeal from them. I have very frequently known it happen that a very unfair valuation is made, because the two valuers having to appoint their own umpire; each one takes care to name one of his own way of thinking with regard to allowances, and if they cannot agree as to the appointment, they draw lots for him, and whose nominee soever is drawn, it is pretty well known that it will go very much in favour of that party; very often much more than it ought to do.

You think the mode of appointment is not good?—No.

Nor the mode of settling the valuations?—No, I think they ought to be compelled to produce a bill of particulars.

Would that make the matter right?—Yes, giving in a lumping sum in that way hides their blunders and mistakes, and their partialities as well.

What mode of appeal would you give, provided a bill of particulars was sent in?—That I do not know.

Could it be got at otherwise than by an action in a court of law?—It could not at present.

What is the course of cultivation of the lands in the marsh?—The cultivation used to be wheat, beans, and dead fallow.

One white crop?—One white crop in the three years; the bean crop had enough to do to pay its own expenses; since we have marled and limed the land we very seldom have a dead fallow at all.

What is your course of cropping?—Wheat, then a green crop, and wheat again, with a dead fallow to lime once in eight, nine, or ten years.

What is your green crop?—Sometimes rape, sometimes tares, sometimes clover.

You vary it?—Sometimes beans, or pulse crops.

Will your land after draining bear turnips?—It will bring turnips; but it is not adapted, for this reason; if the land is trodden when it is wet, it grows very little corn after.

It becomes sodden and too dense?—Yes.

Will you describe the objection you have to the interference of the legislature between landlord and tenant, if you have any such objection?—I do not think it is generally wished for in the county; they were anxious for it at first, but second considerations have driven away that anxiety entirely. It would destroy a great deal of confidence that exists between landlord and tenant, because now the landlords of Lincolnshire generally are a very liberal class of men, and we get

reasonable allowances; the allowances come as fast as the improvements are made.

The allowances follow the gradual introduction of improvements?—Yes.

Do you apprehend that the legislature defining the law upon the subject would put a check to further gradual improvements?—I think it might in some measure; I think it would with regard to buildings; the landlord does them at present, and if the tenant were to be allowed for them, the landlord would throw them upon the tenant's shoulders.

More than they do now?—Yes.

Do you apprehend there would be any danger, when the landlords were made answerable for all the tenants' improvements, of the landlord being inclined to take the utmost rental of his estate?—It might, but not always.

Would not it have a tendency to make them desirous to have the utmost value for their estate if they were answerable for the utmost value of every improvement?—Yes, I think so.

Would not it bring about an interruption to the good feeling you have described to have hitherto existed?—I think it would.

Has not the discussion of this subject in the county of Lincoln, where it has entered largely into the consideration of occupiers and owners of land, produced an alteration in their feeling, so that they do not now regard it necessary to have a legislative enactment?—I do not think they do.

Do you think any improvement could be made in the system of letting land; that is, agreements for compensation according to the custom of the country? The old agreements, as they fall in, almost all are altered and improved according to the present system of agriculture to meet the present state of the times.

CHAIRMAN.] You consider your present system in Lincolnshire of compensation to the tenant for different kinds of improvements a very good one?—Yes, I think so.

And a great deal of improvement has taken place under it?—Yes.

And the Lincolnshire farmers are perfectly satisfied with it; they do not wish to be interfered with by the legislature?—I do not think they do.

Supposing the legislature were to leave them undisturbed, do you see any objection to the same custom existing in other parts of England for the benefit of the tenants?—No, I do not see any objection to it.

On the wolds you have a claim for chalking the land?—Yes, we have.

The chalking does not do much good the first year?—In a great many instances it does positive injury the first two or three years.

Therefore it is absolutely necessary, if the tenant is to do it, that he should have a term of compensation?—Yes; the tenants always do it; I never have known it done by the landlord.

Though you do not require any enactment for your benefit in the wolds, do you not think that the farmers on the Berkshire wolds would be the better off for chalking or marling their lands?—Yes; I think if their system was improved as well as our system in Lincolnshire, there would be the same allowances; I think they would follow as a matter of course.

You say that the buildings at present are done by the landlords?—They are generally done by the landlords.

You have rather an opulent set of landlords in Lincolnshire?—Yes.

Are you aware that in some parts of England the landlords are not so opulent, that they have a great

extent of farm buildings almost tumbling down, and would be unable out of their income to make such fine buildings as you have in Lincolnshire?—Yes, I am aware of that.

You say that the marsh land has been much benefited by liming?—Yes, by draining and liming.

That was in grass before?—A great deal of it.

What sort of grass is it?—It is a middle description of grass for holding stock; it is not feeding land; I have never taken up any feeding land.

What quantity of lime did you put on?—Generally about four chaldrons to an acre; that is about 128 bushels.

What is the expense per acre?—It costs me about 50s. an acre.

Has this operation answered?—Yes, it has answered very well indeed.

As to your own land, have you not got some pretty good crops of wheat lately?—Yes, very good; I can produce more wheat now under this system every other year than I did once in three years before, considerably more.

You are not speaking of the grass land, but of what was wheat land?—Yes.

You find it beneficial on the arable clay land?—Yes.

What quantity of wheat have you thrashed out per acre on your land?—The greatest quantity I have had is between eight and nine quarters; I have had upwards of 12 quarters in two following years, on the same land, taking the two years together.

You say that there is some improvement required in the system which works on the whole so well, as to the mode of conducting the valuation?—Yes.

You are understood to say, that as it is a matter of chance on which side the majority lies in an arbitration, that therefore it would be desirable to get an impartial umpire?—Yes; in most cases now, I wish to say, that there is quite as much given to an outgoing tenant who is a sloven, and has left the land half ploughed, for instance, and everything of that sort done badly, as if it were done properly; he gets the same advantage exactly.

Ought the incoming tenant to be allowed some deduction from the compensation to be paid if the land is badly tilled or full of couch?—Yes; but it is not the case.

You think the arbitrator should be bound to give a bill of particulars?—Yes, I think so.

Mr. DENISON.] If you should find yourself upon a farm in a country where there was no allowance made for cake, for bones for draining, or for chalking, should you feel disposed to enter upon a spirited course of improving in such a country?—Not without a lease.

Do you think that it would be a good thing for the landlords and tenants that the sort of allowance which is made in Lincolnshire, or something of that principle suited to the country, should extend itself to other districts?—I do.

Do you think it is a good thing for landlords and tenants that capital should be expended judiciously on the improvement of land?—Yes.

Is it possible to get capital expended freely by the tenant upon land where they have not either compensation for unexhausted improvements nor leases?—I do not think it is.

Evidence of Mr. GEORGE GERMAN.

Mr. COLVILLE.] You reside in Derbyshire, and on the borders of Leicestershire and Warwickshire?—Yes.

You are a tenant farmer and a land-agent?—Yes.

Have you any custom in the part of the country you reside in?—We have very little of what is considered

tenant-right; if the tenant has made a fallow, he claims the crop that that fallow would produce.

You have no other allowances?—No.

What mode of tenure do you consider the most conducive to good farming?—I should consider that a landlord giving a liberal tenant-right would be the most likely to get his estate well farmed.

Is tenant-right gradually working its way into the district in which you live?—Yes, gradually but slowly.

The landlord of the estate with which you are connected has introduced a system of tenant-right?—Yes.

Will you inform the Committee what it is?—The compensations are "To tenants on quitting, for the following articles bought and used on their farms:—

1. All dung or night soil; first year, the whole value and carriage; second year, half the value. 2. Lime: first year, the whole; second year, half; third year, one-third value and carriage. It is presumed the tenant has no benefit the first year; but if a crop has been taken, the allowance to commence as for the second year; this explanation to apply equally to the first clause. 3. Linseed, linseed cake, or corn: first year, one third; second year, one sixth; but if given to horses, no allowance. The explanation to the two former clauses to apply to this also, if the manure (improved by the linseed, linseed cake, or corn) has been used for a crop. 4. Rape-dust: first year, one-third of the bill after a crop of corn, hay, or clover. 5. Artificial manure. No engagement; but if Mr. Moore and his agent consider there is any permanent benefit to the land, will make such allowance as they may deem necessary. This clause will be liberally construed. 6. Also for soughing and draining (with the landlord's consent); an equal proportion for seven years, if more than four feet deep for ten years: or the soughing to be done by the landlord, and six per cent. per annum on the outlay to be charged as additional rent to the tenant. 7. Also turnip fallow, to be paid for as dead or naked fallow, and in addition half the value of the crop of turnips; provided the half paid for is consumed on the land where they have been grown.

Do you think that sufficient security to encourage tenants freely to invest their capital?—I think it is under the large landowners where the tenant has a probability of permanent occupation.

You think that the tenants on large estates feel it so?—Yes.

And will have the effect of encouraging them to lay out their capital?—Yes.

Do you think that system will gradually work its way into other districts?—Yes.

Do you know whether any other landowners have carried out that system, or made inquiries upon it?—I do know of inquiries.

You know that a number of landlords are inquiring about it, and you believe with the view of introducing it on their estates?—Yes, I do.

Then you think this will be introduced without the aid of legislative interference?—Yes; but it will take a considerable time to do it.

In what respect do you think the legislature ought to interfere between landlord and tenant?—Supposing you could introduce a liberal tenant-right without the interference of the legislature I would do it, but if it cannot be done without the interference I would do it with the interference.

Do you think those persons incapacitated now by law from giving tenant-right ought to be allowed to do so?—I do.

Do you think that the tenants ought to have their farming fixtures just as much as trading tenants their trading fixtures?—Yes.

Is it your opinion that in the event of any act of Parliament passing on this subject, that the whole question of law between landlord and tenant should be reconsidered?—I think the whole should be reconsidered; of course it would be taking too wide a field to say it ought to be all altered.

Do you know any inconvenience that arises from the difficulty of ejecting bad tenants?—Yes, the landlord has a very uncertain remedy as to dilapidations.

There is one particular case occurred on the estate you manage; a case of ejectment?—Yes.

Relate to the committee what that case was?—A notice was given the tenant to quit in consequence of getting in arrear in rent.

When was that?—In 1843; and when the notice expired he disputed the tenancy as to being a new or old Lady-day holding, 25th of March, or the 6th of April; after the 6th of April an offer was made to him to take part of his fixtures (he was a wheelwright, and had erected some fixtures for his trade); an offer was made to take one part and allow him to remove the others, and to pay him for some ploughings and a little fallow upon the land; he overheld, and the case had to go on to trial.

And he held adversely till the trial, which was the 2nd of August?—Yes.

In the meantime will you inform the committee how he cultivated his land?—There were about 44½ acres, about 15 acres of arable land only, that was in four fields; two fields of about five and a half acres he set with early potatoes, and he allowed an immense quantity of weed to grow, and seed among them; one field of four and a half acres he allowed kedlock or charlock to grow to an immense crop; shortly before the ejectment was tried it was mown and sceded on the land.

What did it cost the landlord to eject him; what was the legal expense?—The action of ejectment cost £96 Gs. 10d.

How much do you think the land was injured by that overholding and cultivating in that mode?—By mowing all the turf except an acre and three quarters, and taking away the produce; it was injured at the very least to the extent of a year's rent.

Then had the landlord any remedy against this tenant for sowing his land with kedlock?—Provided the tenant had been a responsible man, the landlord would have had an action.

Did he proceed to punish him?—The man got into the bankruptcy court, and he was opposed there.

What did that cost the landlord?—That cost him £47 12s. 3d.

In addition to the £96 Gs. 10d.?—Yes.

Did you go over the farm afterwards to make any report of the cultivation?—Yes.

What was it?—The day we got possession was the 7th of August: nine acres of upland meadow mown, the hay taken away; another field of 12½, 15 perches of turf mown, and the hay taken away, in a very impoverished state; five acres and 18 perches of turf mown, and the hay taken away; five acres and three quarters and 30 perches of peas, worth nothing as corn, mown green, and taken away; nine acres, two roods, and eight perches arable, all wanting fallowing, and the little time there was between the time that this grass was mown, and the time we obtained possession, the land had been grazed with sheep by him, so as to leave no aftermath.

From those circumstances do you think it is desirable that the landlord should be allowed some power to eject tenants summarily, to secure their land from deterioration?—Yes; to obtain possession of his land.

Can you suggest to the committee any course for

that?—I believe now the magistrates have power to give orders where occupations are not above £20; the magistrates might do it in petty sessions, or the county courts might do it, on the landlord proving his title, and his legal notice; if there was a cause of action between the landlord and tenant, to go on to the assizes.

CHAIRMAN.] You say the land was injured by the hay being removed; you mean that the hay was sold off?—Yes.

Was that contrary to the covenants?—There was no written agreement, but it was contrary to the custom of the country; all the produce of the turf land ought to have been consumed on the land.

Generally speaking, you have no doubt of the advantage of the system of compensation for improvements to the tenant?—Certainly not.

How long have those allowances of Mr. Moore's been given to his tenants?—They were proposed at the Christmas rent-day 1846; the first printed forms were delivered was at Lady-day 1847; we thought a little alteration was necessary, and this is dated March 1848.

And you think this would be generally beneficial in your neighbourhood?—I do; I have an old farm here, which would show that we have lessened the allowance for cake, and added corn.

Have many other gentlemen done the same thing?—Not that I am aware of. I have heard of several inquiries, and have been asked for copies of this paper. I am not aware whether those allowances have been adopted.

Will they become universal in your neighbourhood?—I should think they would in time; but it will take a long period to get them.

Those tenants who have not those allowances, would be laid under disadvantage as compared with their neighbours?—Yes.

Do you see any objection to the introduction of them being hastened a little by legislation, provided there were no violent dictation as to the terms, and the landlords and tenants were allowed to settle those terms between them?—I should not like to see anything interfering with the good understanding between landlord and tenant that there is generally: at the same time I should like to see a fair compensation.

You are understood to say that you would not like to see any compulsory arrangement that would say every landlord must give compensation for all those improvements, and for certain terms of years; but supposing a bill were passed that should introduce the principle generally that the tenant should be entitled to compensation, which should leave to the landlord the power even of exempting himself altogether, and at all events of arranging with his tenant for what time the compensation should run, and to what articles it should apply, should you see any strong objection to that?—No; but if it left the landlord and tenant to exempt themselves from it entirely, that would be of very little use.

Though it would not be compulsory, would not it turn the landlord's attention more forcibly to the subject?—It might do good in that way.

MR. DENISON.] How do you propose to have those questions decided between tenants; it is not mentioned in the paper given in?—Mr. Moore's covenants in the agreements provide that each party shall appoint a valuer, and an umpire shall be appointed by them, whose decision shall be final.

Have you had in your country practical experience of this principle of arbitration?—A little of it, not a very great deal.

Do you think it is possible that there may be some difficulties with regard to valuers to be employed in

this matter?—There may be difficulties, but I do not think the difficulty so great as some do. I think men of business are generally employed, and they either do or ought to carry out the principle fairly.

You were in the room and heard the witness who lately gave evidence that there was a great deal of partiality sometimes in those arbitrations?—Yes, I was.

Do you think it would be necessary to take any steps to provide impartial umpires, or do you think it could be satisfactorily left to arbitration between the parties?—There is no difficulty in leaving it, but if by any bill you could make an impartial appointment, I would do so.

At present you are not able to speak from experience of the practical working of this system of valuation?—No, I have seen very little against it; it is generally acted on by the tenant's quitting, and it is very seldom an umpire has had to be called in.

Clause eight provides that "At the termination of each year, the tenant shall give an account to his landlord or his agent of all money expended by him during the previous year, for which he is entitled to claim any allowance on quitting his land;" do you think that for the purpose of facilitating these allowances, that that is a very important element?—I do.

And without some yearly account were kept, if matters were allowed to run back for several years, the difficulty about the arbitration would be much increased?—Yes, and I think a landlord making himself responsible for money has a right to know to what extent he is making himself responsible; we engage that printed forms shall be furnished to the tenants.

Evidence of Mr. ROBERT CLUTTON.

Sir J. TROLLOPE.] You live at Hartswood, near Reigate, in Surrey?—Yes.

And practise extensively as a land agent in many counties in England?—Yes.

In how many counties do you act?—I act as an agent in as many as 11 or 12, but not extensively in them all.

You have agencies in as many as that?—My engagements are principally in Surrey, Sussex, and Kent.

In the county of Surrey is not there a tenant-right existing to a very great extent?—Yes.

Has that insured good cultivation and management of the land?—It has not.

Has it even promoted it?—No.

Have you heard that it has led to any imposition attempted to be practised between the incoming and outgoing tenants?—Yes, to a very considerable extent.

Do you find that it promotes a system of fraud and falsehood among farmers, and that it has even extended to labourers?—It does; I will explain what I mean.

Do you find that tenants on entering farms have a feeling existing among them that they have been imposed upon?—No doubt of it.

That he has paid more than he ought to do for fallows, half fallows, dressings, and half dressings?—Yes.

What is the prevailing custom of compensation that exists?—I will describe to you the custom.

Do so, if you please?—Where the full custom of the county is spoken of, and where the tenant speaks of being paid a full valuation, according to the custom of the country, that means that he is paid for dressings, and half dressings, of dung, and lime, and sheep foldings, for ploughings and fallows, including the rent and taxes of the fallows, half fallows, and lays.

CHAIRMAN.] Naked fallows?—Yes, whether naked or otherwise; seed sown with the spring corn.

That is the seed of the clover or rye-grass?—Yes;

the underwoods down to the stem, hay and straw at a feeding price, the hay and straw being at a market price where the half dressings are not paid for; these valuations are settled by two valuers, or their umpire.

Sir J. TROLLOPE.] Have you stated to the Committee the whole of the articles for which compensation is generally given in Surrey?—Yes; by custom.

You have stated it promotes a system of fraud and falsehood among the farmers, and even extends to the labourers; will you state in what way it has that effect?—It takes place principally in the half dressings; by which I mean, and which is generally meant in the county, those manurings from which only one crop of corn has been taken. Where manure has been put on at a distance of time it is exceedingly difficult to check the quantity or quality of the dressings, and we find that very false returns are made of it.

Both of the quantity and of the quality?—Yes; both of the quantity and of the quality.

You find in many cases where farms are about to be given up, they scatter down an inferior and smaller quantity of manure, and claim for it as dressing?—They work up to a quitting.

They work out a false account?—They work out the farm, and put in inferior manure.

To receive payment for it as if it were of good quality?—Yes; having been so imposed upon at starting, they feel justified in playing the same tricks upon their quitting; it is frequently done.

In what way does it extend to the labourer and contaminate him?—He is called on to give testimony as to quality and quantity.

And that testimony is not to be relied upon?—Not always.

Has not the system of valuations grown up and greatly extended in Surrey?—It has been growing up for a good many years; it originated when prices were higher than they are now; but it has been a gradual growth, and there are still attempts to increase it. There has been an attempt since the Tithe Commutation Act has operated, to add to the cost of the fallows the tithe reutcharge upon the acres coming for fallow in addition to the rent and taxes; but the thing is better understood now than before, and it has been resisted.

You are an occupier of land to a large extent?—To the extent of 500 to 600 acres.

As a tenant?—It is principally my own property, partially as a tenant.

Do you find that appraisers are appointed by tenants to go over the farms and tell them how to make a high valuation?—Yes.

You have known that?—Yes.

To make the highest possible charge?—Yes; they go over to tell those tenants how they may get up their valuations.

You have found that those allowances have been so onerous on the incoming tenant that in some instances landowners have been induced to buy them up, and discharge their estates, because they were found practically to limit the choice of tenants, and to lock up the capital of those who had been induced to take their farms?—That has been done extensively.

That landowners have bought them up?—Yes, particularly the half dressings and half fallows; those being the items of valuation in which the tenant feels he is most liable to be imposed upon, and where there is the least check.

You say it has limited the choice of tenants and locked up capital; do you mean that farms are not so readily let in Surrey, owing to this heavy tenant right?—It has a tendency to lower the rents of the farms.

Do you find the rent of land in that district is

lessened as compared with other parts of England where you have been employed as an agent?—Yes.

Within your own knowledge you state that fact?—Undoubtedly.

Perhaps you can instance estates where you find those rights purchased up, and which are found so burdensome?—I have been employed in buying up those tenant rights principally in the county of Sussex and in part of the county of Surrey. I have had a recent heavy case over 700 acres of land where the half dressings and half fallows were valued by two valuers and their umpire; they came to £690.

It comes to more than the amount of acres over the whole farm?—It comes to very nearly two years' rent, and there was scarcely any acre of the land upon that farm that I should have liked to sow corn upon, it was in such a bad condition.

And was it purchased up?—It was; the half fallows and half dressings.

At its full value?—Yes.

You found this custom so embarrassing then that you could not let the farm without buying it?—Yes.

Did you get a tenant?—Yes.

Have you been able to get a tenant in consequence of purchasing up the rights?—Yes, I have.

Do you find, generally speaking, that it is the desire of the tenantry of the estates you are connected with to have a legislative enactment upon the subject?—I have made it my business, in holding my audits, to inquire whether the tenants are aware that such a measure is in contemplation; one in twenty are not aware of it, and curiously enough large occupiers, though not far from London, are not aware that such a measure is in contemplation; they appear to me to be wholly indifferent about it.

Have you ever turned your mind to the power of removal of buildings on the part of the tenant, which have been put up by himself?—I think it would be desirable that tenants should be at liberty to remove buildings erected by themselves; I have seen great inconvenience arise from the want of it, particularly estates under disability, where the landlord has been a minor, and has had no power to erect buildings, and no power to give security to the tenant.

Is that the case in lands held of corporations?—Yes.

And in those cases they cannot remove buildings?—No.

You think it would be desirable on the part of the legislature to grant permission to remove such buildings, if not taken at a valuation at the termination of the tenancy?—Yes, if the land is held only for a short term of years.

Have you heard of the use of oil-cake being introduced?—Yes to a great extent.

Without legislative interference?—Yes, the interest of the tenant has been sufficient to induce him to use it.

Where the tenants have a right of remuneration for dressings and half dressings, are they paid for the cake as well?—They are paid for the manure, the value of which is thereby increased.

The value of the cake is taken in the value of the manure?—Yes, but not as a proportion of the cost of the cake.

In consequence of the extended use of cake, has it risen in price to the consumer?—Yes.

Do you attribute it to that cause?—No doubt.

Have you done much drainage in your agencies?—Yes.

Upon what principle is the allowance given when the landlord does it; does he charge interest for his money?—Yes, or if it is inconvenient to lay out the money, to allow at the end of the holding (where the

tenant is holding by the year,) for a certain number of years a proportion of the outlay.

According to the number of years?—Yes, according to the number of years, and according to the quality of the draining. Draining some few years ago was of a very inferior quality to what it is now. We used to drain with the mole plough, and with bushes; now that draining is improved in its quality, and tile draining is carried on extensively, landlords are enlarging the number of years over which those allowances extend. And to a considerable extent I have made arrangements for landlords, that for any drainage done within 10 or 12 years, the tenant shall be allowed on quitting a valuation in tenths or twelfths, as may be agreed.

Then in fact, within your knowledge, the allowance for draining has extended and is still further extending according to circumstances?—Very much.

Do you conceive it necessary that the legislature should step in to make any fixed principle upon which those matters should be allowed?—I consider it is wholly unnecessary, and as a landlord I should think it very extraordinary.

You think it objectionable as a landlord?—Yes.

As a tenant, do you think it necessary?—I do not.

Do you conceive that an act of Parliament defining the mode and the amount of compensation might have a tendency to check further improvements in agriculture?—I cannot say that. If an act of Parliament should pass, leaving it as it is now, that landlords are at liberty to act under it or not, as they pleased, it would appear to be useless.

And inoperative?—And inoperative, except as an act of Parliament pointing out to landlords their duties, if they require that sort of hint; that would be the only use of it which I can see.

You have read the bill before Parliament?—Yes.

Do you conceive that it would be of any use whatever?—Except as regards the power to remove buildings, it would not be useful. The customs of Surrey have raised up a great number of valuers and appraisers, and the mode of arbitration is certainly very objectionable. I heard that the former witness said with regard to that, and I entirely coincide with it. Each valuer, in case of difference, which very often happens, names the umpire, most likely to side with his own view, and it is left to a mere toss up who shall be the arbitrator. If any mode could be adopted to improve the arbitration it would be a good thing. I quite agree in the opinion which I also heard expressed, that the amount of valuation does not in the least depend whether the farm is or is not properly left. Upon entering a farm very much out of order, you have, in a general way, as much to pay for it as if it was in a good state.

Upon the whole, in the county of Surrey probably the legislature interfering would legalize those customs that you now think positively would be injurious, al- luding more particularly to the mode of calculating half dressings and half fallows?—If a legislative enactment would lead to the extension over the whole country of the customs of Surrey, it would lead to very great mischief.

But would not your own customs of Surrey then become the law of the land as regards that county?—Yes.

And perpetuate the bad customs?—I think so; I can easily imagine, to a person who did not know the practice of Surrey, that an agreement to pay for unexhausted improvements in the way of half dressings, foldings, and half fallows, might appear extremely fair upon the face of it, but in practice in Surrey it is not found to work equitably or fairly.

Mr. COLVILLE.] You say, that on tenants giving up

their farms great fraud is frequently practised with regard to the manures they charge; do you think that if they year by year returned an account to the landlord of the manures which they intended to charge at the expiration of the tenancy, the evil of which you complain would not to be remedied?—It would have a tendency to remedy it, but it would have a tendency to a kind of interference that would be much disliked.

Would not it render it wholly impossible for them to commit a fraud?—I can scarcely see that.

Would not it give the landlord an opportunity of inquiring immediately, upon the spot, whether the manures had been applied, and how they had been applied?—No doubt it would.

Therefore if it were done, the evil you complain of would not exist?—It would have a tendency to lessen it.

CHAIRMAN.] It appears with regard to the tenantry of Surrey, which you have stated to the committee, it is chiefly for a claim that has been established by the Surrey tenants for acts of husbandry, and for what enters into the ordinary occupation of a farm?—Yes.

With regard to the dressing, that is dung, on the premises?—Dung made in the ordinary course of cultivation.

With regard to that, you have probably no difficulty, the dung that is actually lying in a heap?—That belongs to the tenant, and is applied; that you see.

About that you have no difficulty?—No.

And you do not probably object to that part of the custom?—No, I have no objection to the payments for dung in the yards.

Then as to the half dressings, meaning dung, applied in a former year, you stated you had great difficulty in ascertaining the quantity and quality that had been applied?—Yes.

Inasmuch as it has been made on the premises, you have no test to go to, no tradesman's or merchant's bill, as you would for bones, but you are obliged to rely upon the evidence of the tenant and his labourers?—Yes.

That you consider an objectionable custom?—No.

With regard to the payment for naked fallows, though they belong to rather an obsolete mode of farming, probably it has a fair though unavoidable claim, as long as that system exists?—Yes; naked fallows are not very much practised, but whether they are naked or bearing a green crop, they are equally paid for.

Is it not the case, that in other counties, where root crops have been substituted for the naked fallows, though the ploughings and harrowings may be allowed for, no one would think of allowing for the rent and taxes on the turnip crop?—No, I think it is peculiar to Surrey.

Therefore that is a claim arising out of an old practice of farming, which, although the motive is gone, has somehow or other been allowed to continue in Surrey?—Yes.

Then of course you consider the half fallows still more objectionable and unreasonable?—Yes, I do.

And what you chiefly object to in the custom of Surrey is the half dressings and the half fallows?—Yes, that is the principal objection.

Though it would be hardly possible for any act of Parliament to alter the custom of the country as to acts of husbandry, do you see anything in the bill in your hands which would legalize this custom in Surrey?—No; but I say, this bill appears to me to have a tendency to increase the number of valuers; it would have a tendency to increase this kind of payment.

You do not find any words in that bill that would legislate upon the principle of the custom such as you have described?—My principal objection to this bill is in the temporary improvement of the land by the purchase of artificial manure, or the purchase of food for cattle; it is so extremely difficult to say how much of this artificial food is paid for by the cattle, and how much is manure to the land; I think it is placing a great deal too much in the hands of the valuer.

You are understood to say you think it would be impossible to distinguish which went to the feeding of the cattle, and which to the improvement of the land?—Yes; what proportion of it would be remunerated by the increase of the corn crop, and what by the cattle; and all those questions would arise under that kind of clause.

You have stated that the quality of the manure is also taken into consideration by the custom of Surrey?—Yes.

In that case no valuer who understood his business would make any allowance for cake, inasmuch as it was being allowed for in the valuation of the dung; if he were to allow for it in the cake also, he would be paying for the same thing twice over?—Yes.

You have stated that you consider the present system of arbitration objectionable?—Yes.

In your opinion, is it necessary for the interests of the incoming tenant, and the landlord, that some means should be found of obtaining the appointment of an impartial umpire?—I think it would be desirable.

And do you think that it would be desirable that they should make out an account in a bill of particulars, not in a lumping sum?—Yes, it would be desirable.

You have also stated that farms are often given up in a very poor state?—In a very inferior state.

Do you think it would be desirable that the landlord or incoming tenant should receive compensation for any imperfect husbandry, or for any foulness of the land?—I have always contended that to entitle the tenant to be paid according to the custom of the country, he ought to farm according to the custom of the country; but it is so difficult to define what the custom of this country is. As the arbitration is now fixed, it is extremely difficult to get any allowance for bad farming; you are sure to have to pay for the half dressings and the half fallows; but there is no set-off for the inferior cultivation of the land.

And do you think it desirable that the arbitrator should in the same way be compelled to have an impartial umpire who should furnish the bill of particulars as to the amount of compensation, and also a bill of particulars as to any allowance they might think it right to make for breach of covenants or foul farming?—It would lead to a better system if it were practicable.

Do you think if there were arbitrators, with an impartial umpire, you would have any difficulty in estimating the counter claim of the incoming tenant, if they found the land full of couch or ploughed at an improper season, or if they found that it had been cropped contrary to the covenants?—Yes, there is very great difficulty in that.

What difficulty do you think there is in it?—It is difficult to say at what time some of the ploughings took place; it is the habit in making a clear fallow, in the county of Surrey, that the ploughing should be done four times, and they are done some of them at a season that they have no right to be done at; it is difficult for an arbitrator to say in October how they were done at the time.

They would have no difficulty in giving compensation for the foulness of the land?—No.

And if there were any serious injury arising from bad

cultivation, probably, with an impartial umpire, they would have no great difficulty in making a set-off for that?—Not with an impartial man of judgment.

Mr. E. DENTSON.] You have said that the existing tenant-rights are objectionable in your opinion in the county of which you speak?—I think so.

But you have not hesitated to extend those tenant-rights yourselves in certain particulars; for instance, in drainage?—We have done it to a considerable extent on the part of the landlord.

Then you think that a tenant-right for drainage is a good and fair thing?—I think so, and so think my employers, the landlords.

You think also that a tenant-right for cake, as far as it goes, for the improvement of the quality of the manure, is a good thing?—I think that paying for manure at all is; it should be paid for according to its quality.

Do you not think that anything that goes to the improvement of the quality of the manure, is a good thing for the incoming tenant?—No doubt of it; I think we should not feed cake in our yards if at the same time that it improved our stock it did not improve our manure.

Then you have no doubt that a judicious use of cake, if it is a good thing to the outgoing tenant, is a good thing to the incoming tenant, supposing it is fairly valued to him?—I have no doubt of it, and the country has no doubt of it; it has extended so prodigiously that cake has risen in price to such an amount that we can scarcely purchase it.

Supposing upon any district of country the application of bones should be a useful manure, do you think it would not be an equally good thing that the tenant expending a sum of money in bones should be allowed something for the unexhausted value of those bones?—He ought to be allowed for any unexhausted value in the bone dressing, and I think he gets it partly in the improved crops; principally, in fact, in those improved crops.

Then do you say that at present the tenant has compensation in his crop if he should quit before those crops should have been taken into his barn?—He does not get his value; he does to a certain extent.

Then in any part of the country where chalking land should be a great advantage, and an advantage which should extend over several years, do you see any distinction to be drawn between the system of allowing compensation for drainage upon wet land, or for chalking upon high land, where both are equally beneficial to the respective soils?—I think an allowance should be made by way of arrangement between the parties.

Then you think that the extension of tenant-right, such as you have heard described to-day as prevailing in Lincolnshire, where it was allowed as between landlord and tenant, would be a matter mutually advantageous to the landlord and the tenant?—I think it would be sufficiently advantageous to induce them to make such an arrangement for themselves.

Then if you think it would be sufficiently advantageous to induce them to make it for themselves, how do you account for such very large portions of the country remaining without those tenant rights?—It is difficult to account for it, but improvement has been going on of late years at an increased pace, and for the last three or four years at a very great pace.

The question was, whether you thought that that sort of tenant-right would be a matter generally beneficial to the landlord and tenant?—Yes, I think so. I think anything that encourages the use of chalk would be beneficial upon land requiring it.

You think that anything that would encourage a judicious application of capital upon land would be a

matter beneficial both to the occupier and the owner of the land?—I think so.

Do you think that any great fear need be entertained that too much capital would be expended upon the land if such allowances for unexhausted improvements should be?—I know the difficulty of watching what are called improvements, and ascertaining what is really going on upon the farms; I think there is a great deal in setting the agricultural wit to work to run up a bill for improvements which are extremely difficult to watch.

That is to say, you think that there would be a disposition to fraudulent demands?—I think so.

That is not an answer to the question, which was, whether there was a fear of too much capital being *bonâ fide* expended upon the land?—There is no fear whatever.

Sir J. TROLLOPE.] With regard to manures, do you find that there is any difficulty in ascertaining the value of manure when it is in the yard; it is more in the half dressings and the whole dressings that you think the difficulties and disputes occur?—There is not much difficulty in ascertaining the value of the manure while it is in the yard; there is a great deal of difficulty in ascertaining the value of the manure after it has been carried out and mixed with the soil, even that from which no crop has been taken; the difficulty is increased of course with half dressings.

Do you find a disposition among the tenantry to lessen those payments, by desiring the landlord to take the dressings and half dressings?—They are desirous of having them bought up.

Do not difficulties arise in consequence of estates being mortgaged or entailed?—Yes.

Which makes them indisposed to purchase up those rights?—Yes.

You find that a great impediment?—Yes.

Do you not find that the disadvantage of the Surrey tenant-right is, that the same money is paid for the bad farming as for the good farming?—Yes.

That is the mischief of the tenant-right in Surrey?—Yes, if the paying for the tenant-right ensured our getting what we pay for, there would be no objection to it; but we know from practice that it is not possible.

CHAIRMAN.] Your difficulty appears to be to ascertain the quantity and quality of the dung that had been put in the land in previous years?—Yes; after it is once mixed with the soil.

That dung being made on the farm, there is no voucher of any kind to be called for?—No.

Nothing but the evidence of the farm labourers?—Yes; and the goodness of the manure depends upon the structure of the yard, and so on.

The soil would be no voucher; you have nothing to refer to but the very loose kind of evidence of the labourers dependent upon the farmer?—Yes.

Sir C. LEMON.] Is any of the land you are acquainted with under lease?—It is principally from year to year.

Leases do exist?—Yes, to some extent.

Are there any covenants in those leases similar to those that exist in other parts of the country?—Yes; when a tenant entering upon a farm has found such a right existing, the lease continues it to him; the rule of the country is, that when a tenant entering pays for such things with the cognizance of the landlord, he is entitled to be paid when he quits.

So that you cannot form any judgment as to the improvements that might be introduced from the custom of the country from the regulations in the covenants of the leases; where the parties agree among themselves to introduce certain covenants in their leases, does it

lead you better to form in your own mind any opinion by which the custom of the country might be improved?—In granting fresh leases, and making fresh agreements, we are improving the covenants as between the landlord and the tenant, and encouraging good husbandry.

Speaking of the customs of Surrey, in what particulars do those covenants differ from the established custom of the country, generally speaking?—They vary very much. Indeed, in several counties with which I am acquainted, the manure belongs to the landlord, and then of course neither dressings nor half dressings are paid for.

That is done by covenant in Surrey?—That is done by covenant where leases exist.

And you consider that covenant an improvement upon the established custom?—The established custom is as I have described it; but where a lease exists, it is necessary that the tenant should be entitled to be paid for those things he paid for on entry, or that the items should be remunerated, otherwise the lease would bar the custom of the country; if the lease said nothing about payment on going out, the tenant would be entitled to nothing; the lease comes between the tenant and the custom.

The committee wish to learn from you, whether the

covenants introduced in the leases do materially vary from what the custom of the country is?—The covenants introduced into the leases provide that the tenant shall, on quitting, be paid that for which he paid on entry, and that which he pays for on entry is generally that paid for by the custom of the country; it leaves it just where it found it.

Mr. MOODY.] You stated just now that in some of the covenants you had omitted the half dressings?—Whenever the farms have fallen into the hands of the landlord I have advised not to charge for half dressings and half fallows on letting it again.

When you speak of the land being deteriorated by the outgoing tenant, do you refer to land held by lease, or held from year to year?—Both.

There you say the tenant racked out his land when about to quit?—A tenant may have made up his mind to quit some years before he gives the landlord notice.

You say that the system of arbitration has been so bad that it has generally led to much litigation?—Not very much; the landlord is very unwilling to go into court, and he stands a poor chance if he does.

The same system of arbitration being kept up by this custom, would the litigation be more or less diminished by this bill?—I do not think it would be affected one way or the other.

CHEAP MANURING.

No. III.

SIR,—It was said in our last that the combustible ingredients dissolve away in the air, from whence the plant gets them again. The farmer must then bear in mind, that plants feed both by the leaves and roots; the leaves drawing carbon from the air, whilst the roots draw water (consisting of hydrogen and oxygen) from the soil. Our business in manuring, is with the roots: but it must be here observed, that although the leaves will draw carbon from the air, enough for the natural produce; yet, to get up a cultivated crop, of 10 or 20 times more than nature could produce, we must help the carbon by the roots also, which is a main purpose of dung dressing; the dung containing much carbon, which dissolves in the sap that is taken up by the roots. Our *cheap manures* will strengthen the plant, and thus help it to draw more from the air than it could without them; but the greatest crops are to be expected when we *feed from below as well as from above*, as carbon constitutes near one-half of the solid substance of the plant. And here we may pause to remark, that green vegetables may contain, upon the average, $\frac{3}{4}$ of their weight of water; 400 lbs. leaving only 100 when thoroughly dried. And of that 100 we may average,

Carbon	48	
Oxygen	38	
Hydrogen	6	Ashes....5
Nitrogen	3	

Thus the incombustible ashes are only about one-

twentieth of the plant when dry (or one-eightieth when green and fresh); and as the four combustible elements constitute the substance and form of the plant, they are generally called its *organic* elements; whilst the ashes, thus slightly distributed through them, are commonly termed *inorganic*. This the farmer is to remember when he hears of *inorganic manures*, &c., which he will frequently find in agricultural publications and advertisements.

The (combustible or) organic elements then (carbon, oxygen, hydrogen, and nitrogen), are all found in every plant, and do not differ very widely in proportions; but the inorganic are much more variable. What their duty is, in such small quantity, is not satisfactorily ascertained; but careful experience has proved their *absolute necessity to the plants' thriving and maturing their seeds*; that for this purpose, some plants require different constituents and different proportions from others; and that where the land is deficient in, or exhausted of, those which the plant requires, the languishing plant quickly recovers its vigour when they are (properly) supplied as manure. And when we are aware that they constitute only one-twentieth of the dry, or one-eightieth of the fresh green produce; and that even of this small proportion, the soil generally contains the greater part, and that much of the remainder is of very low price, we shall begin to understand why materials of such light carriage and little cost should form the basis of

CHEAP MANURING.

Of the eleven inorganic constituents enumerated in our last, four—silica, alumina, iron, and manganese—are generally present in the soil, (except in mere sand or chalk); and lime is used as a digestive manure, in much larger quantities than the plant consumes. Soda and muriatic acid are both supplied in common salt, worth 1s. to 1s. 6d. per cwt.; but as much more of the soda is required than of the acid, the additional quantity may be supplied cheap in soda ash, at 12s. to 16s. per cwt., or still cheaper in crude sulphate of soda, at 6s., which supplies sulphuric acid at the same time. And sulphuric acid may be supplied still cheaper, in gypsum, worth about 2s. per cwt. The only inorganic constituents of serious cost, are magnesia, (of which so very little serves, that crude sulphate of magnesia, 1 cwt., at 10s. to 15s., is enough for three or four acres), and potass, and phosphoric acid, which are of the utmost importance, required in larger quantity, and of not inconsiderable price. Potass, however, exists in all vegetable matters, and phosphoric acid in all animal excrements; and both are therefore present in the dung-heap, unless it is drained and water soaked; (when that is the case there is no knowing what it contains; its character and quality are lost.) But the direct supply of pot-

ass is in vegetable ashes, or weeds, roots, hedge clippings, &c., unburnt, but composted with earth and lime (not rotted in water, which washes all the potass away.) But our green crops carry off so much potass, that with all good economy many crops and even entire estates would be the better for a further supply; and as wood-ashes are costly in the quantity required, a cheaper supply is very desirable. Such an one we have at hand and inexhaustible, though hitherto quite neglected. Our granite will probably contain 5 per cent. of potass, which may be rendered available by heating, crushing, and working with lime; for which I hope to give detailed instructions in a future letter.

For phosphoric acid, the most direct source is bones: of which great quantities are lately discovered in a fossil state. They are softened and rendered more active by acid, either sulphuric or muriatic. A cheaper supply would be in night-soil and town sewerage if properly saved, which is more and more attended to every year. Potass and phosphoric acid are then the chief subjects of care in inorganic manuring.

In our next we will see what each crop carries off, and the cheapest means of supplying them.

J. PRIDEAUX.

—Plymouth Herald.

ON THE MANAGEMENT OF BARLEY.

Junius derives the word "barley" from a Hebrew noun of the same meaning with *bere* of the northern nations, and the *hordeum* of the Romans. The plant belongs to the class and order *Triandria Diggynia* of Linnæus, and to the natural order *Gramineæ* of Jussieu.

Willdenow and other botanists reckon ten species of barley, four of which are cultivated grains, and six are barley grasses, which are rather hurtful than useful to the farmer. As many as fifteen species of *hordeum* are distinguished by Professor Kunth, and in addition there are many varieties. The species are found in a wild state in most parts of the old and new worlds. *Hordeum* is distinguished from *Triticum* by its spikelets having only one perfect flower in each, and by its glumes being somewhat unilateral and bearded.

Rye or *Secale* differs in having two florets to each spikelet, and in the same additional circumstances as *Triticum*.

Hordeum vulgare, or our common cultivated barley, is said to have been found wild in Sicily and in Russia. It is annual: the flowers and seeds are disposed indistinctly in several rows, with very long, compressed, rough awns. There is a sup-

posed variety, termed *Hordeum celeste* in which the husk or corolla does not stick to the seed; and another with black seeds, said by Willdenow to be biennial.

Hordeum hexastichum has six rows of seeds; ears cylindrical; awns very long, rough, and rigid, rather spreading away from the ear; grains adhering to the husk. The native country of this species of barley is unknown; it is the *bere* or *bigg* of farmers, and is valuable in ripening quicker than the common two-rowed barley. It is also more productive on inferior soils and in high latitudes, but the meal is inferior in quality.

Hordeum distichum or two-rowed barley, ears cylindrical; awns almost parallel with the ear; grains adhering to the husk. This is the *Hordeum vulgare* of some botanists, and is the common summer barley of England. The ears are not so large as those of the *Hordeum hexastichum*, but the grains are heavier. It is commonly said to be a native of Tartary: Colonel Chesney found it wild in Mesopotamia, on the banks of the Euphrates.

Hordeum zeocriton has the ears conical;

awns spreading away from the ear in a flabelliform manner; grains adhering to the husk. From the spreading direction of the awns, the ears of this barley acquire a much broader figure at the top than at the bottom; and on this account it has been called "battledore barley," and also "sprat barley." The native country is unknown, and it is little cultivated on account of the shortness of the straw.

The *Orge celeste* of the French is a naked six-rowed barley, very prolific, and in many parts of Europe it is reckoned to be the most productive of all. The grains are loose in the husk; ears cylindrical; awns very long, rough, and rigid, and rather spreading away from the ear. It is the *Hordeum Gymno-hexastichum* of scientific writers.

Hordeum Egiceras or Tartarian wheat, is a most curious species found in Tartary, and in the northern parts of India; ears cylindrical; florets arranged in a confused manner, not in rows; awns soft, short, hooded, and bent downwards; grains loose in the husk. It resembles wheat more than barley, and its naked grains assist the resemblance. There are many other varieties of barley, but not of sufficient importance to require a particular notice, except in works of minute detail.

Barley delights to grow in warm soils, loams, gravels, and chalks, provided the subsoil be dry and not retentive of water. Dry gravels are the most congenial habitation, where the subsoil, so far as it is exposed by cultivation, consists of a compact stratum of materials similar to the upper soil, or rounded gravel imbedded in a clayey earth, but thoroughly pervious to water. These soils are very often of a shallow depth of stratum, and sometimes weak in texture; but the barley, if not very large in quantity, is ever the best in quality, thinnest in the husk, and the finest in the farina. The next best kind of land for the growth of barley is a deep mellow loam or a bottom of earthy clay, or a concreted loamy earth. These loams vary in the depth and in the quality; but they yield the largest crops, with the straws large and flabby, and the ears lengthy and prolific. The husk is often thick, and the farina is coarser than on the thinner soils that have been mentioned. Sands will produce barley of tolerable quantity and quality, being the most suitable plant to their weak texture and hungry constitution. It is capable of being produced with less moisture than oats and wheat, and consequently it is used as the grain crop on the driest soils. It requires the least time, of any culmiferous plant that is known, between the periods of sowing and reaping; and consequently it admits of being later sown in the spring, and of being committed to the earth in a very genial period of the season.

In the present improved system of agriculture, barley is universally sown on the cultivation of root crops, after the land has been wrought, cleaned, and manured for producing potatoes and turnips. The full preparation of the land has been effected in the production of these crops, so that nothing is required but to commit the barley seed to the earth in order to derive a part of the benefits of the following preparation. The month of April is the general sowing time in the British isles: early southern latitudes will allow sowing in March, and the most northern climates will protract the season into the month of May. Early sown crops are generally the best, provided the season does not extend into the late frosts of the winter, which may injure the tender germination of the seed. But hurtful frosts will seldom occur after a sufficient heat has stimulated the earth to produce the shoots from the seed; when they do happen, the effect is slight and transient, and do not penetrate the earth to reach the bed of the seed. And it is beneficial that the seed be ready in the earth to meet the vivifying effects of the introduction of caloric, which penetrates the soil, and urges the development of life. Early sowing has the utmost possible benefit of the store of moisture from the winter's wet: the seed is in its bed, and the earth is laid with a flat surface to meet the scorching heats. Late ploughings expose the soil to evaporations, and the seed is committed to a loose bed of pulverulent particles that are wanting in the connection of reciprocal action. If the season be sufficiently dry and the temperature encouraging, no danger may be apprehended in England from sowing barley by the middle of March, always avoiding the giving barley a wet season of sowing, as it is the easiest hurt of all grains, and the land is damaged for the reception of grass seeds by being hardened and concreted. Late sowings are much hurt by the excessive heats, as the land is more recently stirred, and the more freely admits the rays of the sun, and the penetration of drought. In the case of early sowings, the earth is consolidated before the heats commence, and the seed has found a position which will not be disturbed. Consequently the drought does not reach the interior of the ploughed stratum, and the moisture remains. The land being cleared of the root crops by 1st of April, the first dry weather will render it fit to be ploughed, which must be done with the whole strength of the farm combined. At that season of the year a plough will turn over more than an acre of light lands; and on large farms the processes of ploughing, sowing, and harrowing will go on together, and begin at the same hour in the morning. Eight ploughs will seed-furrow ten acres of ground, which will employ the farm bailiff in sowing the seed on each ridge as

it is ploughed, and at the same time over-looking the whole movements of the operations. Two pairs of harrows of two-horses each will be employed in giving the land three times of harrowing, which will sufficiently cover the seed. Five or six ploughs will prepare six or seven acres, which will be sown and harrowed in the same way, employing only one pair of harrows. Thus, at the end of each day, the work is finished closely up to the ploughs. On smaller farms, that do not admit the division of labour, the seed must be sown on every two days of ploughing, and harrowed and rolled without delay. On extensive farms, where the fields are large, the land is rolled across when the field is half sown; the awkwardness of making a turning in the middle of the field being disregarded, for the very important purposes of securing the advantages of a fresh tilth, and the attendant invigorating combinations. When the fields of land are of moderate extent, the rolling of the ground *across* is performed after the sowing is finished.

The sowing of seeds in the dry periods of the year requires much quickness and dispatch in bringing the seed in contact with the newly stirred earth, that the germination may commence in the midst of the combinations that take place between the earthy and atmospheric elements. The land collects during winter a quantity of moisture for the summer's use, and it must be sparingly used and husbanded with great care. Little exposure of the land must be allowed for drought to penetrate the soil and reduce the land to a collection of dry clods, and for evaporation to carry off any quantity of the valuable moisture. In these most valuable cases the roll acts as a lock and key in keeping the the moisture in the land, and must be used in a weight of not less than one ton, and applied immediately after the harrowing of the seed.

Where the drill machine is used for sowing barley, the same directions hold good that the sowing of the seed follow quickly after the ploughing, and then the harrows and the roll.

The seeds of the hay grasses are sown on the barley tilth and on the rolled surface, and covered with a single tine of light harrows. They may be sown on the harrowed surface of the barley sowing, and covered by the rolling of the land; but on many kinds of soil heavy rains will form a cake or a flat hardened surface, which retards every kind of growth, especially the tender germination of grass plants. It is therefore preferable to leave the seeds in a loose surface that has been consolidated underneath by the roll. If the weather prove very dry the land may be rolled again, provided the stems of the barley be not so long as to be nipped and broken below the roll, and the shade of the culms will prevent the crusting of the surface by means of

the moisture which is retained. This second rolling is often attended with much benefit, but it requires some attention in judging of the proper time. Few or no tall weeds will rise on cleaned lands; but it is better that the hand weeders walk over the grounds before the crop gets too tall, in order that any noxious seeding of weeds may be prevented.

Barley must be sown in dry weather and on dried lands; it will thrive on very stiff loams of a clayey nature, provided the tilth be dry. It is very easily hurt by the wet harrowing of the ground: the least cementing of the soil damages the germination and growth of the plant. The harrowing and the rolling of the crop most imperatively require a dry performance.

It is an established fact that when culmiferous plants are cut before the seeds are *technically* "dead ripe," the farina is finer in quality, and the germinating power is quicker and more vigorous. In the case of barley it is ready to be cut when the husk is streaked with white, like the back of a paddock: or, as it is called in some places, "paddock-hued." The colour will be very finely variegated, as the universal green colour begins to turn to white, owing to the husk being completely filled with farinaceous albumen, and the supply of juices being withdrawn. When cut and dried in this state, the hardness of the meal assumes a softer consistence than when the plant is allowed to stand on the ground until the decay is completed, which has commenced from the root; the straw being cut and separated, the communication is interrupted and the last stage of retrogression is not accomplished. The flinty hardness is not imparted; the farina is whiter and more delicate; and, in the hands of the maltster, the saccharine quality is more prominent and vigorous. The straw indicates the time of cutting in being white in colour at the most slender part just below the head of grain; and the pickles being pressed by the hand will exude no milk, but show a full kernel of farina. The crop may then be cut, and the necessary hardness of the meal will be gathered during the time of drying the straw.

Barley is best cut by the scythe and laid in swarthes, for which the rolled surface of the ground will be very convenient. It may lie in the swathe for three or four days of sunny weather, and then turned over and exposed for three days more. This process will dry both sides of the swathe equally, when the crop may be tied into sheaves and set into shocks of 12 sheaves each, with one placed on the top as hood sheaves. Crops of barley are often carried and stacked loose like hay; but it is inconvenient to be handled, and also difficult to be thrashed by the machinery. Sheaves are very

much readier for the pitchfork, and also better suit the threshing machinery. The heads of the grain are more together and lie in one direction, so that the threshing scutchers have a better chance of separating the grain and the straw. The stacking of the crop, and the handling of it, in every way, is much more convenient when it is tied into sheaves than in a loose state like hay.

In high latitudes where much rain falls, and where grains are late in ripening, it is very beneficial to set the barley in single sheaves, provincially called "gaetings," with the tying rope twisted in a loose manner round the neck of the sheaf, and the bottom part very widely spread out. From standing ten or twelve days in this state, the straw dries very fast, when the sheaves may be tied and set in shocks, and generally may be carried in a week after being tied.

The threshing of barley, or the separation of the grain from the straw, is effected in two ways—by the flail and by machinery. In either way the process is more troublesome than in the case of the other corn-bearing plants: the awns are abundant, lengthy, and fasten on the straw, which being soft and spongy, admits the prickly adhesion of the bearded awns. The scutching of the machinery does not separate the awns from the pickles, which much increases the adhesion of the grains to the straw, and demands a slower process and even a repetition of the operation. Hence it is customary to put the machinery into a slow motion for the purpose of threshing barley, and even to pass the straw twice through the scutching process, that the chance may be increased of separating the straw and the grain. The shaker of the most improved threshing machinery fails in separating the awns and the culms after the scutching has been performed—the motion is not sufficiently violent, and the passage to the straw barn is too short and easy in the accomplishment. The awns are the end of the elongated husk, and adhere to the pickle of the grain. In order to detach them the grain is often passed between the scutchers of the threshing machinery, which breaks the greater part of the awns; but if the rollers be fluted, many of the pickles will be bruised and broken in the ends, which forms an objection in the hands of the maltster. Of late years an upright cylinder has been placed below the extended end of the iron gudgeon of the drum, on which a crown wheel works in another crown wheel, which is fixed on a central gudgeon standing upright in the cylinder, in which are fixed a number of sharp knives facing diagonally, and to the extent of the cylinder. The barley after being separated from the straw, is filled to the cylinder at the top, and passes downwards through the action of the knives, which being driven rapidly

round by the crown wheels from the drum, cut the awns from the pickles, and the barley comes from the bottom of the cylinder in a clean state. This adjunct forms a very valuable addition to threshing machinery.

The barley after being parted from the straw by the flail, is spread out thinly on the barn-floor, and beat heavily by flails in order to break the awns from the pickles, and also stamped upon by a square piece of iron bar with a handle; the process is laborious, and forms a great addition to the naturally cumbersome mode of threshing by flail, when put in comparison with machinery. Two passages through a fanning machine makes the grain ready for the market—once to drive away the chaff, and the second time parts the sound and the light grains. It is then put into sacks containing four bushels, and delivered to the purchaser.

The chief use of barley is in being converted into malt for the purpose of being brewed into ales, and distilled into spirits, in all countries which do not permit the growth of the vine. The best and heaviest grain is selected for this purpose; discolouration caused by heating in the rick, or by exposure to the weather in the fields, diminishes the value, and renders the barley useless for that purpose. A partial sprouting is provoked by steeping the grain in water, in order to exude the saccharine quality, which being diluted, fermented, and volatized, forms the spirituous drinks that are well known in common use. The chief recommendation of barley for the purpose of malt is a pale colour and thin husk, both which qualities are obtained by the cutting of the crop before dead ripeness takes place. This is a great point in the management of barley, and it must employ the chief attention of the cultivator who wishes the best price from a superior article.

The next use of barley is in being ground into meal for human food, and also for animals. This application is fully as valuable as for being converted into drinks. It forms a very palatable food for invalids, and the bread is yet much used in some countries where wheat is not grown. The inferior qualities of barley are very beneficially used by being ground into meal, and used as food for the animals of the farm. Mixed with milk, wheys, and warm water, it is the best provision for brood sows and for newly weaned pigs; and for feeding bacon hogs, the mixture is made of a thicker consistence, and with steamed potatoes. With water in a thick consistence it is very useful to feeding bullocks, in a moderate quantity. For poultry it is equally useful, in drinks, in balls, and in mixture with steamed potatoes. Barley when steamed forms a most excellent food for farm horses, and is given most beneficially in one feed a day, in the evening meal,

during the winter part of the year. It very much improves the digestion, and the coat of the animal.

Two very useful preparations are made of barley, into "pot" and "pearl" barley, which are the reduction of the substance into the refined quality. The first is made by removing the outer husk or skin; and the second by removing the skin and a considerable portion of the barley pickle, and leaving only a small round kernel. These preparations differ only in the degree of grinding which the grain undergoes; in both forms the barley is very wholesome and nutritious, and is much used in broths, stews, and puddings: they swell and unite with the fat and oily matters of the meat during the process of boiling. The essential oil of barley, which gives it the peculiar taste, resides chiefly in the skin and the adjacent parts of the grain: the interior is a purer farina, more nearly resembling that of wheat. This circumstance, no doubt, suggested the idea of removing the outer part, and using the interior, as approaching nearer the pure *fecula* or starch. It is to be regretted that these highly nutritive substances have not found a more extensive use among the labouring classes.

Decoctions of barley are useful in medicine—they are palatable and demulcent, but are apt to clog the stomach, and require the addition of lemon juice, or some other acid, to quicken the action. Barley-waters are very grateful in fevers, allaying thirst, without exciting the circulation.

In eastern countries barley is very extensively used as food for horses; but there seems to be some latent cause that adapts food for the body, for in our country the use of barley has never gained ground in that way, probably from the coolness of the climate requiring a more heating food in the oat.

Two varieties of barley are suitable for the British isles—the common two-rowed barley, for the climates of ripening in August; and the bere or bigg (*Hordeum hexastichum*), for the later situations. The latter grain is earlier than the common variety, but the quality and the value are inferior. In the most northern counties of Scotland, it is known to have been only ten weeks in the ground.

Barley is subject to the same diseases as other gramineous plants; but none affect it so much as to render necessary any preparation of the seed. The burnt-ear does appear sometimes, in very dry hot seasons. The greatest enemy to barley is a wet harvest, being very apt to germinate, from the ear and straw being so very retentive of moisture. When the clover grows luxuriantly, it very much helps this propensity; and when sprouting takes place the grain is fit only for feeding pigs and poultry.

The produce of barley may be stated at the average of 40 bushels per acre, and the weight at 50 lbs. per bushel.

The value of wheat, barley, and oats, in feeding cattle, may be represented by the figures 47, 32, 24, the measure being the same. This calculation is founded on the experiments made on a large scale by Von Thäer, at his establishment at Mogelin in Prussia, where the account of the results was very accurately kept.

Barley contains 65 per cent. of nutritive matter, while wheat contains 78 per cent.

Saussure, the well known French analytical chemist, has very carefully examined the ashes of barley, and of the straw. The grain reduced to ashes, with its skin, gave, from 100 parts, 18 of ashes, which contained:—

Potass	18.0
Phosphate of potass	9.2
Sulphate of potass	1.5
Muriate of potass	0.25
Earthy phosphates	32.5
Earthy carbonates	0.0
Silica	35.5
Metallic oxides	0.25
Loss	2.8
	100.00

1800 parts of the straw produced 42 of ashes, containing:—

Potass	16.0
Sulphate of potass	3.5
Muriate of potass	0.5
Earthy phosphates	7.75
Earthy carbonates	12.5
Silica	57.0
Metallic oxides	0.5
Loss	2.25
	100.00

Barley contains:—

Starch	79.
Gluten	6.

These products will, no doubt, vary on different soils; but it is very remarkable to observe the proportion of silica in the straw and in the skin of the barley.

SUBSOILING IN EAST LOTHIAN.—For several years past, the subsoiling of land has been fairly tried in East Lothian, on every variety of soils, and under every possible variation of circumstances. The result has been that the practice is now relinquished, as producing no benefit, and consequently entitled to no regard. This result agrees with my own practice, repeatedly tested on various qualities of land, drained and undrained. J. D.

MILKING CAPABILITIES OF HEREFORD CATTLE.

SIR,—The dispute between the Rev. J. Smythies and Mr. Keary as to the comparative merits of the Herefords and Shorthorns, should not be allowed to drop without some one trying to direct the attention of breeders of Herefords, and our different agricultural societies, to the absolute necessity of paying more attention to the milking capabilities of our excellent breed than has hitherto been the case. Every person who ever wrote on cattle classed the Hereford breed as inferior to the Shorthorns as regards the production of milk—most writers, on the other hand, allow them to be better for feeding. Now, the fact of Hereford cows being generally had milkers, while there are *individual cases in every herd* of well-bred cows being *excellent milkers and good breeders*, plainly proves that there is misdirected management somewhere; and feeling strongly that this is the case, I am anxious to show where the fault is.

In the first place, the different agricultural societies in this part of the kingdom are to blame in encouraging the feeding capabilities of the Herefords to the neglect of their milking properties. Observant persons can bear me out in asserting that a cow can at the same time be a good milker and breeder, and possess both qualifications in perfection. Mr. Keary in his prize essay says—“The difficulty of combining the fattening and milking qualities in the same animal is generally felt and acknowledged; but is it a law of nature that this combination cannot take place? The principles of physiology forbid us, I think, to affirm that such is the case; and the fact of a cow producing a large quantity of butter is a proof that her food is readily converted into fat; besides which, it is a matter of frequent experience for deep milking cows, when from age or other causes they are dried, to grow rapidly into fine carcasses of beef. By studying more closely the habits of our animals, and paying due attention to those qualities in the selection of the males, I cannot help thinking that the valuable combination of milking and feeding properties may be attained.”

So far, I think, Mr. Keary's observations are entitled to great weight, and claim our earnest attention. And Lord Portman, in a note to the above paragraph of Mr. Keary's, says: “On this point I have the experience of my herd of Devons, which has been carefully managed for at least fifty years. *I can show abundant proofs of this desirable combination.* The attainment of this double object is the work of years, and of constant attention. The rule is, never to rear the calves of the offspring of a cow which has proved but an indifferent milker or a bad feeder; nor to buy a bull of which you are unable to trace the true pedigree and the qualities of the *mother*. It is most difficult to ascertain these points from the breeders of bulls for sale; and it is therefore best to buy a bull whose stock has been proved, before he is introduced into a good herd, how-

ever correct he may be in form and to the touch. In purchasing cows, it is essential to try to obtain the knowledge of the observation of the herdsman, at any cost, to guide the judgment, because at some seasons the animal may be unjustly condemned or approved by the cursory observer.”

The above sensible and practical note of Lord Portman's proves the possibility of this combination of feeding and milking qualities; and I shall now add a few facts to prove the same, which have come under my own observation. Many years ago a neighbour purchased a Hereford bull out of a superior stock: the heifer produce of this bull proved to be good milkers, and the steers very prime. In due time he sold that bull and bought another, and apparently superior: the heifer produce of the last bull were abominable milkers, and the steers not so good as the other bull's by £2 or £3 a head. I will give one more instance. My father had a cow of the Hereford breed, of excellent frame and beautiful countenance, and good size, and an extraordinary milker—so good a milker, that as soon as she had calved she sunk rapidly in flesh, and would continue so all the summer, that we were almost ashamed to see her with the other cows; but her produce, when sold, were invariably equal to anything we had; and when she was dried, which we had difficulty in doing, she laid on fat faster and more evenly than any cow I ever saw. This was what I call a profitable animal; and it is such animals as these our agricultural societies should encourage. Let not the difficulty of decision deter them. Where there is a will, there is a way. The cows should be brought to a certain spot the night before, milked clean, milked at a certain hour the following morning, the quality and quantity of the milk tested, and, if necessary, the offspring shown along with them.

To prove that our present system of giving premiums for the encouragement of fat only, instead of encouraging a combination of fat and milk, is operating injuriously to the interest of Hereford breeders, I shall make an extract or two to show that this is the case. The Duke of Somerset, in the *Mark Lane Express*, says—“The writer formerly bred from the herd of Mr. Tully; better than his he has not since seen; *but he relinquished the Herefords on account of the lack of milk.*”

And lest the above should not satisfy the gentlemen who manage our agricultural societies, let them peruse the following:—“At the 5th meeting of the Harleston Farmers' Club, on the 1st of June, another important subject engaged the attention of the meeting—‘that of the best method of improving the breed of neat cattle in the district.’ The introducer of this question first showed by a comparison between the value of home-breds and other breeds of similar ages, that improvement was necessary; next, by a reference to particular cases, that

it was attainable; and concluded by giving his opinion, that as it would take a long time to improve our present breed, keeping it pure, the cheapest and most speedy plan would be to cross the Norfolk and Suffolk cows with Durham or Hereford bulls, giving a *preferenc*e to the *former*, as likely to produce the *best milkers*."

These are no prejudiced statements, but the sentiments of an intelligent body of men seeking after truth. They abundantly prove, if proof were wanting, that when premiums are given for breeding cows, the quantity and quality of the milk should be considered. To give a premium to a cow dry for months and pampered for show, injuring the offspring and deceiving the public, is the height of absurdity; and I hope that at every future meeting of our societies, a class of breeding cows, the quantity and quality of the milk to be taken into consideration, will be a prominent feature in the shows.

The lack of milk in our cows is not the characteristic of the breed, but the fault of mismanagement; and I shall now proceed to show how this defect may be remedied, and the desirable combination attained. In most instances our heifers calve the wrong time of the year, dropping their calves from the 1st of December to the 1st of February—the cows earlier—consequently, they are on dry fodder as soon as they calve. Now, if these heifers calved in May or June, on the first spring of grass, a good flow of milk would be the result. I know

one farmer whose cows calve about Christmas—his heifers are bulled to calve in May and June, when they are two years old; these calves are put on cows whose calves are weaned, and the heifers are milked that summer. They are not bulled till the following February, and get a summer's rest to make out the loss of growth by calving at two years old. By this plan he secures his cows to be good milkers, and at the same time good breeders.

Another method to secure good milkers is to rear the heifer and steer calves on a different plan. The steers cannot be kept too well; the heifers should be taken by hand. Each lot should be fed for a distinct object. By forcing the heifer calves and making them up fat, a tendency to early maturity is given at the expense of the milking qualities.

I have thus, sir, given my views on this important subject; and I trust that another meeting of our agricultural societies will not take place without a special premium being devoted to the encouragement of such cows as show a combination of milking and feeding qualities. Let them endeavour to wipe away the reproach so often brought against our unrivalled breed, and secure for us the pre-eminence so long maintained by our breeders.

J. P. C. L.

March 9th, 1849.

—Hereford Times.

PERUVIAN GUANO.

Mr. J. G. STEVENSON, of Skellingthorpe, near Lincoln, in speaking of the use of Peruvian guano, says—

"I have used it with great success for five years, and to the extent of more than 100 acres of turnips for the last three years, in the following manner:—I have it thrashed, then pass it through a common cinder-ash riddle to take out all the lumps, stones, &c.; I then measure an upheaped quarter of this powder, which weighs about 5lbs., and spread six of them over 5 bushels (of 4 pecks) of sod ashes, quarter for bushel, and two at last; then turn it away, and continue doing so till I get the quantity wanted. I drill 40 bushels of this mixture upon an acre, on all sorts of land, ridged upon the Northumberland plan: the quantity used for common turnips is 2 cwt. per acre. Swedes should be increased from 2 to 3 cwt. per acre, price from £1 to £1 10s. for the guano. It requires well mixing, and the seed must not come down the same spouts as the manure; it will destroy it. We have one-horse drills made here that deposit the manure and the seed separately, the latter spout following the former at about a foot distant, I have used it as a top dressing for grain and grass, but could perceive very little benefit."

Mr. R. BARCLAY ALLARDICE, of Ury, Stenhaven, N. B., in reference to the same subject, says—

"I have used Peruvian guano for several years to a large extent, indeed, make a rule to top dress all descriptions of grain, turnips, and clover to be mowed, with it, at the rate of two cwt. per acre, at the cost of £10 per ton, or 20s. per

acre. I sow the guano on the wheat in autumn, at the time of sowing the wheat broadcast; on oats and barley in spring, at the time of sowing, and the whole is harrowed in with the seed. For turnips I apply 10 tons of farm-yard manure, and two cwt. of guano. The dung is spread in the ridges, and the guano sown on the top of the dung, and the whole covered in—the turnips in this country are all sown in ridges, and frequently horse and hand-hoed. I am satisfied, by long experience, there is no manure that can be applied will raise such a weight of turnips per acre as 10 or 12 tons of farm-yard manure, and two cwt. of guano per acre. I am also satisfied I gain 2 qrs. per acre of wheat, oats, and barley, by the application of two cwt. per acre of guano. I consider guano beneficial for all soils, but most conspicuously beneficial for loams and gravel. Now my hand is in, I may as well remind you that Mr. Baker, of Writtle, chose to arraign, last winter, my mode of storing Swedish turnips—not on its merits, but because it differed from the mode adopted by the first-rate agriculturists in his county. I beg, therefore, to inform Mr. Baker that my swedes, stored in mounds, as described by me the first week of December, have kept perfectly sound, retaining all their feeding qualities and juices, up to this present writing, they being now all consumed. Mr. Baker's may be a very proper mode; I say nothing against it; but it is evidently attended with more trouble and labour, and not easily understood, except by ocular demonstration at least his description of it

REMARKS ON MANURES.

BY J. E. TESCHEMACHER.

[The following report of remarks made by J. E. Teschemacher, Esq., at several meetings of the Legislative Agricultural Society, New York, during the month of January last, has been furnished by that gentleman, on request made to him. The importance of the subject, and the experience of Mr. Teschemacher, with reference both to practice and theory, give a value to these remarks, which warrants their insertion in this place.]

FIRST EVENING.

The important, vast, and almost inexhaustible subject of manures had always divided itself, in his mind, into three great considerations:—

1st: On the nature of the crops required to be raised.

2nd: On the nature of the soil from which these crops were to be obtained. And

3rd, and the most important: On the nature and application of the manure itself.

It was necessary to condense into the briefest form what he had to say on all these considerations.

Every one knows that if clover was wanted, a large quantity of lime, and also sulphur, was requisite; if tobacco, potash and soda. In England, after many years' cultivation of wheat, all the barnyard manure that could be heaped on the ground would not raise any more until bone-dust was added, and with this many acres hitherto considered barren had given excellent crops. The size and quality of turnips have been found to be much benefited by the use of the soluble phosphate of lime (vitriolized bones).

One question then is, what does the crop we require abstract from the soil during its growth and progress to maturity? This question is answered by the various analyses of crops, which are to be found in every agricultural treatise. But another, and a much more important question, now arises—What part of the ingredients of these crops puts most bone and muscle in the animals which feed on them? Also, can we by particular manures increase in these crops the quantity of these ingredients? Part of the first question has been answered by Liebig's last treatise. We knew, before Liebig was born, that the bones of animals were chiefly formed of phosphate of lime; but we did not know, before the publication of this last treatise, that the phosphates of other alkalies formed essential parts of the flesh and blood of animals; this he has there completely and satisfactorily proved. In the lime districts in Switzerland the cattle are much larger than in those where lime is scarce in the soil. The great test of the quality of a crop then is, its nutritious action on the animal; this is of more importance than its appearance, or even weight. Now, it is evident that by offering as food to these crops a manure abundantly supplied with these ingredients, combined with others ensuring a luxuriant growth,

we enable them to obtain a maximum thereof. It would take too much time to enter into the detail of numerous experiments made by him on this subject; the result of them is a difference of thirty per cent. in these ingredients, dependent on the difference of the manure. Thus, if the *ashes* of wheat contain thirty-five per cent. of phosphates, the difference of manure will increase this to forty-five per cent. Hence, the consideration on the nature of the crops is of much interest.

Consideration on the nature of the soil.—All soils are composed chiefly of sand (silica), clay (alumina and silica), lime, magnesia, some organic matters, sources of carbonic acid, and a few oxides of metals; these ingredients in various proportions. The stones accompanying the soil have the same composition, and suffer annually some small disintegration; from such disintegration soils are formed.

Sand (silica), besides lightening too stiff a soil, is chiefly of use to strengthen and stiffen the stems of plants, enabling them to resist the wind; for this purpose, it must be dissolved by contact with an alkali (potash or soda). These are usually found in clay (alumina), which, as an ingredient of the soil, or of the compost heap, is invaluable, although it never enters into the organization of the plant. When the chemist analyzes a mineral containing alumina, it is almost impossible for him to wash it free from the alkaline substances which he has used in his analysis, or which were originally combined with it. It grasps and retains them with the most invincible obstinacy. Clay, in its natural, original state, is formed from the disintegration of felspar, and is therefore always combined with notable portions of potash and soda.

The president had spoken highly, but by no means too much so, of charcoal, as an absorbent of the useful part of manure—ammonia. He himself had experimented many years with this substance in various ways, and could amply confirm all the president had said. Clay appeared to him, however, more retentive than charcoal—certainly, more so as regards potash and soda—and may be had where charcoal is hardly to be procured. Clay, then, well pulverized by frost, is a most valuable addition to the compost heap; and a soil containing a fair proportion of clay may by manuring be rendered the most permanently rich of any. A light soil, besides permitting the ammonia to be drawn up into the atmosphere by the heat of the sun, also allows the valuable salts of the manure to be easily leached through by heavy rains; and a soil with too much clay does not permit them to mix freely, so that the roots of the crop can obtain easy access to their nourishment. The farmer who studies the nature of his soil will, while manuring liberally, be able to manure much more economically than one who knows no-

thing on the subject. It is probable that much of the labour and expense wasted in manuring some lands with lime and plaster, as well as many of the differences of opinion on these manures, have been owing chiefly to ignorance on this subject.

He had time only to allude to the third, yet most important consideration, the nature and application of the manure itself. In some parts of England, where much seed wheat is raised, and where seeds of vegetables and herbs are grown to a large extent, he had seen compost heaps formed as follows:—a layer of four or five inches of good loam and turf, then about eight to twelve inches seaweed carted up fresh from the beach, then an equal quantity of farm-yard manure, then loam again, and these layers repeated, until the mass was several feet high, the last layer being loam and turf. This is left eight or twelve months, to decompose; is turned over and applied to the land. The grains raised are large, plump, beautiful, and heavy. Now, here the ingredients are, clayey loam to absorb, seaweed containing soda and a good proportion of the phosphates, and the barn-yard manure, which, besides its soluble salts, contains ammonia; its solid parts are, by fermentation, converted into charcoal and humus, which absorb the ammonia, and preserve it for the use of the crops; the whole mass being well protected by an ample covering of turf and loam. Here, then, is not only nearly every ingredient the plant requires, but also the storehouses of alumina and charcoal, from which it fetches its food, as wanted. He alluded to a discussion on the subject, whether manure was better used in a green state or after it had been kept a year or more, and had become a black saponaceous mass. The question appeared to be settled in favour of this latter state, and this agreed with his own experience. If a manure heap be fermented under a good cover, it is converted into a black, carbonaceous mass, containing nearly all the ammonia, condensed in its pores, and is a most powerful manure.

SECOND EVENING.

He wished now, in the most concise manner possible, to give his ideas on the separate value to vegetation, of some of the ingredients of manures—and here, as before, he would omit all detail of the various experiments on which he had formed his judgment, merely offering these remarks as his own opinions on this subject, which, however, he could not help considering of much importance.

Ammonia he considered as the great promoter of luxuriant growth of stem and leaves; by its means a large surface of healthy dark-green vegetation is produced, which, exposed to the action of the atmosphere and light, matures the various juices, such as gum, starch, sugar, &c., contained in the plant. But all the ammonia which can be got into a crop, unless there be also abundance of the phosphates, sulphates, and other inorganic substances, will give nothing but a worthless vegetation, and no grain of value. Those who have raised crops by the application of nitrate of soda alone, unless the soil contained of itself a sufficiency of these inorganic salts, have found that, however beautiful they appeared when

green, they were comparatively of little value when dried.

So with trees: superabundance of ammoniacal manure will give beautiful looking, thick, long shoots; but they will be spongy, long-jointed, and will neither bear fruit in quantity or quality at all resembling those which are manured with abundance of inorganic salts combined with the ammonia. In these latter the shoots are hard, very short-jointed, and full of fertile blossom-buds; the fruit also has a much better flavour, although perhaps not quite so large as the other. The reverse of this is also true, that inorganic salts alone, without ammonia to give a healthy breadth of vegetable surface to the maturing influences of the light and air, will afford nothing but barrenness. This he had repeatedly proved, and preserved specimens of various growths. It seems very easy to comprehend that, if a tree or other plant has all the requisite ingredients to feed on, as soon as the light and air induce in the juices the necessary changes of ripening, a bud (blossom or otherwise) is formed, vegetation proceeds; in another short space, another bud is formed. Now, if one or other of these ingredients is insufficiently supplied, vegetation must go on, until from this niggardly supply sufficient thereof is obtained to form a bud. Ammonia increases the vegetable growth rapidly, and this continues until sufficient inorganic salts are procured thereby to form first a leaf bud, or, if more is procured, a blossom-bud; if in forming a blossom-bud these salts are exhausted, leaf-buds will next be formed, until the supply is again obtained for blossoms. He had made many experiments with flowers and their seeds, which appeared to him to confirm these views thoroughly, but still he merely offered them as his own individual opinions.

Dr. Krocke, in Giessen, had analyzed many soils, some from the western parts of this country; in all he had found large quantities of ammoniacal salts, in some as much as eight thousand pounds to the acre, twelve inches deep. From these experiments an opinion had prevailed, and was now held by many, that it was quite unnecessary to put ammoniacal manures on the soil. Now, theory alone, unless confirmed by practice, was not only useless, but injurious. Large quantities of inorganic salts were prepared in England, with exact instructions from Liebig, under the idea that they alone were necessary to produce luxuriant crops; but they had failed in every instance of application. And nearly all the artificial manures there manufactured—and it was now a large business—contained ammonia in some shape or other. It is, however, not to be doubted that large quantities of ammonia come down with the rain and snow, and, when these fall heavily, some portion of the ammoniacal salts are washed down below the influence of the heat of the sun, and thus become permanently stored in some subsoils; these, when brought to the surface by the subsoil plough, exhibit very luxuriant crops. The ammonia, however, of moderate summer rains, is either used by the crops, or is raised from the surface by evaporation, to return again in the next shower. The variations of soils and circumstances, however, had led him not to trust implicitly in

any general scientific theories, unless confirmed by very numerous and very well authenticated experiments.

THIRD EVENING.

At the period of the commencement of the application of science to agriculture, the scientific calculation was as follows:—If the farmer sells annually the produce of his farm, say hay, grain, milk, butter, cheese, calves, hogs, &c., he carries from that land more produce than he can restore to it in the shape of manure from his own farm; and the land must be soon exhausted, unless he buys manure—and the calculation appeared very fair. But practice, as well as theory, had shown it to be erroneous. He had only to refer to the lucid and interesting statement of the Hon. Mr. Brooks, to show that even with the sale of his produce he had increased his manure to superabundance. How had he done it? He had carefully saved every particle of urine and feces, and all rubbish and offal on his premises; and, to mix with and absorb this, he had carted loads of stuff from his peat-bog. Now this peat muck, called by chemists under various names, as *geine*, humus, coal of humus, vegetable mould, is, as far as regards agriculture, *charcoal*—the absorbent, the storehouse of ammonia. Mr. Brooks's next process is to pare his meadow, burn these parings, and mix them also with the urine and feces. Now here is another storehouse, both of ammonia and of inorganic salts; and nothing is lost, as it used to be—all is stored up for use. Every horticulturist who has grown plants in garden-pots, which are nothing but burnt clay, the same as Mr. Brooks's burnt parings, knows that the roots of plants leave the soil in the centre of the pot, and push for the sides of the pot itself, and why? Because the salts, dissolved by watering the plants, have been absorbed by the burnt clay, and there the plants go to find their nourishment. These store-houses also absorb the ammonia which comes down in rain and snow, as well as the inorganic salts arising from the annual disintegration of stones and rocks.

A preference has been stated for plaster, as an absorbent of ammonia, because plaster is a manure, which charcoal is not. Plaster may be, and in some cases (not the majority certainly) is, a manure; by the absorption of ammonia, it becomes sulphate of ammonia and lime. Now one hundred parts of sulphate of ammonia contain about sixty parts of sulphuric acid, not very advantageous to vegetation, about twenty-six parts of ammonia, and about fourteen parts of water. Charcoal can condense in its pores about ninety parts in bulk of ammonia. Plaster is an excellent material to strew in stables where many horses are kept, as it destroys all noxious effluvia, and it is then unquestionably a good manure, but it appears far inferior to charcoal as an absorbent; and certainly where plenty of peat muck exists, it is bad economy to purchase it for this purpose.

The notes read by Mr. Newhall, of his observations on his manure composts, are very interesting. If every agriculturist would make such notes, and place them where men of science could have access to them, they

would soon be classified, sifted out, and compared. This would unquestionably lead to generalizations of some importance to agriculture.

A desire, in which every one must cordially join, has been expressed for definite experiments in agriculture. In order to have definite experiments, however, it is necessary to work with definite compounds; and this, with the immense diversity of soils, although not absolutely impossible, is difficult. A farmer may, year after year, add sea-weed to his manure composts, and always produce excellent crops; if, to spare labour or expense for one year, he omits this ingredient, he may still have as good crops—nay, even a second year; then, from this, which he considers a *definite* experiment, he will conclude sea-weed to be of no use. The third year, another may be in possession of the farm, and having heard of seaweed, determines to try it on half the land, the other half without. From that half manured with seaweed he obtains much better crops than from the other, and he concludes from this *definite* experiment that seaweed is a valuable manure. Now, the probable truth would be, that, from the seaweed put on, there had been a superabundance of phosphates and other inorganic salts, enough to supply the crops for the two years, and that then a fresh addition of them was required. No doubt this case often occurs in the application of lime and plaster, and has caused so much diversity of opinion.

But definite experiments, though difficult, are not absolutely impossible; for instance, that stated by the president, at Sandusky, Ohio, where on a breadth of twenty or thirty acres fifty bushels charcoal were spread per acre, on land hitherto barren, with intervening spaces, where none was used. The spots with charcoal gave from twenty to twenty-five bushels wheat per acre, those without from three to five bushels per acre.

There is, however, one definite experiment of the utmost importance to be tried; it is the experiment of establishing agricultural schools and experimental farms throughout this vast and flourishing agricultural country. What is the reason why youth pant after commerce or the learned professions? It is because they require the exercise of the utmost energy of the mind, and this exercise is precisely what youth demand; the want of it drives them into all kinds of foolish excesses; for the desire for it is invincibly strong and will be gratified. Now, is it not possible to divert these energies of the mind to the successful pursuit of agriculture? The experience of other nations answers, yes; but only by the preparation of a previous suitable education of the first order. Young men generally consider a farmer as a mere machine, a plough, a cart, or a hoe, with nothing to do but what their fathers did before them. Will these ideas apply to any other industrial pursuit, or any other profession? Had they been so applied, the railroad, the steam-boat, the electric telegraph, had still been unknown—and as long as these ideas exist amongst them, so long will the best of our agricultural population flock to the cities, and many a fine mind be irretrievably lost.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover Square, on Tuesday, the 24th of April. Present—The Hon. Robert Henry Clive, M.P., Trustee, in the chair; Earl of Tyrconnel; Earl Beauchamp; Sir John V. B. Johnstone, Bart., M.P.; Sir John P. Boileau, Bart.; Mr. Almack; Mr. Raymond Barker; Bosanquet; Mr. Burke; Rev. Thomas Cator; Colonel Challoner; Mr. Cherry; Mr. Evelyn Denison, M.P.; Mr. G. Dyer; Mr. Fuller, M.P.; Mr. Gaussen; Mr. B. Hall; Mr. Fisher Hobbs; Mr. Kinder; Mr. King; Mr. Lawes; Mr. W. Miles, M.P.; Mr. C. E. Overman; Mr. Parkins; Mr. Apsley Pellatt; Professor Sewell; Professor Simonds; Mr. Slaney, M.P.; Mr. Spencer Stanhope; Mr. Stansfield, M.P.; Mr. Hampden Turner; Professor Way; and Mr. W. B. Webster.

Prize Essay.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the Essay on the Management of Barley, to which the Judges had awarded the Society's Prize of £15, and also the Essay in that class which they had "commended." The Chairman of the Council then opened the sealed motto-paper containing the name of the author of the former essay, when it was found that the Prize belonged to Mr. HALL W. KEARY, of Holkham, Norfolk. The sealed motto-paper, containing the name of the author of the commended essay, was referred unopened to the Chairman of the Journal Committee, in order that he might, at his discretion, open it or not, agreeably with the 5th Rule of Competition for Essays, and communicate accordingly with the author if he thought proper to do so: the commended essay bore the motto, "Without practice, theory is nothing."

Diseases of Cattle.—The Chairman took that opportunity of stating his conviction that the Society had it in their power to confer a great practical benefit on their members residing throughout the country, as well as on the community at large, by deputing from time to time a first-rate Veterinary Surgeon into those districts where disease of any kind prevailed to a considerable extent among the live stock of farmers, with an instruction that he should report to the Council the result of his personal examination into the circumstances of such malady, and into the local cause of its occurrence or aggravation, as well as the measures he would recommend for arresting its progress, and preventing its further outbreak in other districts. This statement led to an unanimous expression of the value of the measure proposed, and to an animated discussion on the subject, in which Col. Challoner, Mr. Fuller, Mr. Overman, Sir John Johnstone, Mr. Dyer, Mr. Parkins, and Prof. Sewell, favoured the Council with their views on the subject. The Chairman then gave notice, That as the question he had ventured to suggest had received the concurrence of the Members present on that occasion, he should move at the next Monthly Council, that it should be referred to the con-

sideration of the Veterinary Committee of the Society, with a request that they would report on the subject to the Council at their earliest convenience.

Blue Earth.—Professor Way having ventured an opinion at the last Meeting in reference to the nature of the blue substance found in the peat soil submitted by Colonel Challoner to the Council, and which, from a casual inspection, he then supposed to be Prussian blue, had been led by a communication he had received from the Rev. Professor Henslow to submit it to analysis, and had found it, as that gentleman expected to be, not Prussian blue, but another salt of iron, namely, the phosphate. Professor Henslow stated that the earthy phosphate of iron was often found in the fens of Cambridgeshire, and was frequently seen coating the empty shells of the fresh-water muscle, picked up by crows, and left on the banks of the river. He also remarked that phosphate of iron sometimes occurred in lumps; and he thought it probable that the phosphoric acid of that substance might be derived from the decomposition of animal matter, whilst the bog-iron would constitute a ready source for the oxide of that metal forming the base of the salt in question. Colonel Challoner having found, as he had remarked at the previous meeting, that the peat soil under consideration was a most sterile one, he had still been curious to ascertain its effects on the growth of plants, when mixed in small proportions with garden mould, especially in reference to the change which the salt of iron it contained would produce in the colour of the petals of the hydrangea and similar plants; and he had accordingly instructed his gardener to make these trials, and report to him the result.

Presents.—The Earl of Carlisle transmitted to the Council (through the President) a copy of the statement of Mr. Chadwick, C.B., on the application and value of liquid manure, which the Council referred to the Journal Committee. The Earl of Tyrconnel presented specimens of hollow bricks (made by the tile-machine) for the building of cottages, with a statement of their peculiar advantages, and of localities in which they were manufactured. The Agricultural Society of Paris presented their Report of proceedings, and Mr. Raynbird his work on the Agriculture of Suffolk. Thanks were ordered by the Council for the favour of these donations.

The Council then adjourned to the 1st of May.

A Special Council was held at the Society's House in Hanover-square, on Monday, the 30th of April: present, the Earl of Ducie, V.-P., in the chair; Sir John V. B. Johnstone, Bart., M.P.; Mr. Raymond Barker; Mr. Burke; Colonel Challoner; Mr. Childers, M.P.; Mr. Bennett; Mr. Brandreth; Mr. Evelyn Denison, M.P.; Mr. Brandreth Gibbs; Mr. Hillyard; Mr.

Fisher Hobbs; Mr. Hudson (Castleacre); Mr. Kinder; Mr. Lawes; Mr. W. Miles, M.P.; Mr. Milward; Mr. Pusey, M.P.; Mr. Shaw; Mr. Shaw, jun.; Mr. Shelley; Mr. Stansfield, M.P.; and Mr. Thompson.

The Report of the Chemical Committee referred, at the last Monthly Council, to the special consideration of this meeting, was fully discussed, and, with certain amendments, adopted, and ordered to be reported to the monthly meeting of the following day.

A Monthly Council was held on Tuesday, the 1st of May: present, His Grace the Duke of Richmond, K.G., Trustee, in the chair; Earl of Ducie; Lord Bridport; Hon. R. H. Clive, M.P.; Hon. Capt. Dudley Pelham, R.N.; Sir M. W. Ridley, Bart.; Sir Charles Lemon, Bart., M.P.; Sir John V. B. Johnstone, Bart., M.P.; Sir Robert Price, Bart., M.P.; Sir Thomas D. Acland, Bart., M.P.; Colonel Austen; Mr. Raymond Barker; Mr. Barnett; Mr. Blanshard; Mr. Bramston, M.P.; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. Childers, M.P.; Mr. Henry Colman; Mr. Evelyn Denison, M.P.; Mr. Garrett; Mr. Brandreth Gibbs; Mr. Grantham; Mr. Hillyard; Mr. Hippeley; Mr. Fisher Hobbs; Mr. Hudson (Castleacre); Mr. Kinder; Mr. Lawes; Mr. Miles, M.P.; Mr. Milward; Mr. Pendarves, M.P.; Mr. Pusey, M.P.; Professor Sewell; Mr. Shaw; Mr. Shaw, jun.; Mr. Stansfield, M.P.; Mr. Manners Sutton; Mr. George Turner; Mr. Thos. Turner; Mr. T. Umbers; Mr. Jonas Webb; and Mr. Henry Wilson.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly report on the accounts of the Society; from which it appeared that the current cash-balance in the hands of the bankers at that date was £1,653 (including £1,000 on the Norwich subscription account, and £653 belonging to the account of life compositions for investment). This report, and the recommendation of the committee that Messrs. Gurney and Co., of Norwich, should be requested to act as the Local Bankers of the Society on the occasion of the ensuing country meeting in that city, was adopted by the Council.

Country Meeting of 1850.—The report of Mr. Raymond Barker, Mr. Brandreth Gibbs, Mr. Shaw (London), Mr. Fisher Hobbs, and Mr. Milward, the members of the Inspection Committee, who had paid a personal visit to the various localities in the western district offered by their respective authorities, for the purposes of the Society's country meeting in 1850, having been read, the Council received the several deputations, composed of some of the most influential residents in the counties of Devon, Wilts, and Somerset, who had favoured the Society by their attendance on that occasion, in order that they might render to the Council every required information connected with their respective counties, and at the same time bear testimony, by their personal presence, to the great interest excited throughout the west of England on the subject of the Society's Country Meeting of next year to be held in that part of

the country. The Report of the Inspection Committee having informed the Council, as the result of their personal enquiries and examination, "that the general accommodation offered by each of the towns proposed for the meeting would answer the purposes of the Society, and that at each of them the greatest readiness and anxiety were manifested to meet the requirements and further the objects of the Society," the Duke of Richmond, as Chairman, proceeded to address each of the deputations as they presented themselves, in reference to the comparative advantages possessed by each locality, and to receive in reply the information required. The Council then voted their best thanks to these deputations for the favour they had done them by their attendance, and proceeded to the decision of the particular place in the Western District to be selected for the Society's Country Meeting of 1850. It was then moved by Mr. Hillyard, seconded by Mr. Brandreth, and carried unanimously, that the CITY OF EXETER should be the place of such meeting. The deputation from that city represented to the Council that to select Exeter as their place of meeting would fall in with the plans and principles of the Society, as there was no district more alive to improvement than that in which it was situate, nor any that could be more truly said to need that improvement. They dwelt on the fact, that every other part of England had participated in the advantages bestowed by the presence of the Society; and all but the farmers of the West of England, properly so termed, had benefited accordingly; that the Society's great national meetings had been held in the northern, the southern, and the eastern districts of the country; that Wiltshire had had the advantage of a proximity to the Southampton Meeting, and Taunton to the one held at Bristol; while Devonshire and Cornwall, in the far west, felt themselves neglected: they therefore thought that Exeter, the metropolitan city of those counties, had a great claim to the preference of the Council on that occasion; especially when it was considered that their celebrated breed of cattle, which had already carried off the honours of the Society at every former meeting, would be but too happy to be exhibited in their native district; when it might also be added, that the city itself, with its 40,000 inhabitants, its admirable localities adapted for the purposes of the meeting, its railway accommodation, and the 10,000 visitors along the Northern and Southern shores of the famed county of Devon, would promote, in every respect, the success of a Meeting at all times regarded as a national one, but more peculiarly so at the present important period of the agricultural interest. The Deputation concluded their statement by an assurance that every difficulty would be removed to promote the perfect arrangements of the Society, and that a hearty welcome would be given to the Members of the Society on visiting Exeter.

Country Meeting of 1853.—The Council decided, on the motion of Colonel Challoner, seconded by Mr. Milward, that the District for the Country Meeting of 1853 (after the South-Eastern District for 1851, and the

South-Wales District for 1852) should be comprised of the Counties of Leicester, Lincoln, Nottingham, and Rutland, and be designated the "East-Midland" District.

Prizes for Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the Essay to which the Judges had awarded the Society's Prize of £50, for an account of the best method of increasing the existing supply of Animal Food; and the sealed motto paper being opened, the successful author of the winning Essay in question was ascertained to be JOHN CHALMERS MORTON, of Whitfield Farm, Gloucestershire. The essays bearing the following mottoes were also reported as having been "commended" by the Judges: viz., "And the land shall yield its increase," "O.U.Y.," and "Practice." Mr. Pusey then moved the consideration of the Prizes for Essays to be awarded in 1850, when the following Schedule was agreed to, subject to such conditions of competition as should be published in the next part of the Society's Journal, and to the standing regulation that the Essays intended to compete should be sent to the Secretary of the Society, at 12, Hanover-square, London, on or before the 1st of March.

Farming of Lincolnshire	£50
Farming of Somersetshire.....	50
The causes and means for the prevention of Abortion in Cows	30
The Diseases of Live Stock occasioned by mismanagement	30
The Cultivation of Oats	20
The rearing and management of Poultry.....	20
The Climate of the British Islands in its effect upon cultivation	30
The Destruction of the Wire-worm	50
	£280

Agricultural Chemistry.—On the motion of the Earl of Ducie, seconded by Mr. George Turner, the following Report of the Chemical Committee was adopted:—

REPORT OF THE CHEMICAL COMMITTEE.

The committee recommend that in future the privilege of obtaining analyses of manures, agricultural products, and soils at the following reduced rates be made a privilege of all members of the society.

No. 1. An opinion as to the genuineness of a manure in the market.—7s. 6d.

By this is meant such an opinion as could be formed by a scientific person, by inspection, with a few simple confirmatory experiments.—[It will protect from fraud, but is not calculated to assist materially in the choice of the best specimens, where all are genuine; it will inform the applicant whether a specimen of guano, or oilcake for instance, be adulterated or not; but will not touch the question of its relative value as a pure specimen. Such an opinion will only apply to ordinary market articles, as guano, oilcake, superphosphate of lime, sulphate of ammonia, gypsum, common salt, &c.]

No. 2. Guano. A determination of the nitrogen (ammonia), or of the same and of the earthy phosphates, &c.—£1.

The following is an instance, taken at random, of such an analysis:—

Water	17 95
Organic matter, and ammoniacal salts	51 39
Sand, &c.	1 34
Earthy phosphate, principally phosphate of lime	20 98
Alkaline salts, and loss to make up the difference, often consisting of common salt, &c.	8 34
	100 000

This is all that is needed to give the agricultural value of guano, or a close approximation to it.

No. 3. Limestone. The proportion of lime.—7s. 6d.

The proportion of magnesia.—10s.

The proportion of lime and magnesia.—15s.

This analysis is sufficient for many purposes; but in most limestones sulphur, lime, phosphorus, and magnesia are present.

The next analysis is better for farmers, inasmuch as it is impossible to say how much of the effect may be due to minute ingredients.

No. 4. Limestone, or Marls, including carbonates, phosphates, sulphate of lime, and magnesia, with sand and clay.—£1.

No. 5. Partial analysis of a soil, including sand, clay, organic matter, and carbonate of lime.—£1.

No. 6. Complete analysis of soil.—£3.

No. 7. Letter asking advice, one topic.—7s. 6d. On more than one topic.—10s.

No. 8. Oilcake, or dung, or any animal products (such as cheese or butter in milk), nitrogen, and phosphoric acid.—£1. Oilcake, including nitrogen, oil, and phosphoric acid.—30s.

That a salary of £200 a-year be paid to Professor Way for this purpose, and that the Committee have further power to expend a sum not exceeding £300 a-year in such chemical inquiries for the Journal as the Council shall think expedient from time to time to direct, on consideration of the report made by the Chemical Committee.

That, in order to ensure a regular and efficient attendance, the following Members be added to the Committee:—

Lord Portman	Mr. Lawes
Mr. Hyett	Mr. Hudson (Castleacre)
Mr. Hoskyns	Mr. Sheridan, M.P.
Mr. Jonas	Dr. Daubeney
Mr. J. Manwaring Paice	Mr. Aeland.

The present Members of the Committee are—

Mr. Pusey, M.P.	The Rev. A. Huxtable
Sir John V. B. Johnstone, Bart., M.P.	Mr. Thompson; and Mr. Shaw (Strand).
Mr. W. Miles, M.P.	

Member of Council.—On the motion of Colonel Challoner, Mr. Henry Blanshard was unanimously elected a General Member of the Council, in the place of Mr. Raymond Barker, transferred to the class of Vice-Presidents.

Steward.—On the motion of Mr. Brandreth, seconded by Mr. Hillyard, Mr. Charles Stokes, of Kingston, Notts., was unanimously elected a Steward of Cattle in the place of Mr. Druce, who retires this year by rotation.

Judges.—The Council appointed the following Committees for the selection, and recommendation to the

Council (from nominations made by the members on or before the ensuing General Meeting on the 22nd instant, at 12 o'clock), of Judges for the Norwich meeting: namely—*Committee for Stock*, Lord Portman, Mr. Hudson (Castleacre), Mr. Brandreth, Mr. Druce, Mr. Shaw (London), Mr. Kinder, Mr. Stokes, Mr. Milward, Mr. Grantham, Mr. Bennett, and Mr. Hillyard. *Committee for Implements*, Lord Portman, Colonel Challoner, Mr. Miles, Mr. Shelley, Mr. Thomson, Mr. Fisher Hobbs, Mr. Brandreth, Mr. Shaw (London), Hon. Captain Pelham, and Mr. Shaw (Northampton).—Mr. Fisher Hobbs was very desirous that it should be known by the members at large of the Society, that they had the privilege of nominating parties to act as Judges at the country meetings of the Society, by transmitting their names to the Secretary, on or before the 22nd of May in each year, provided they certified, from their personal knowledge, that the parties they proposed were qualified and willing to act as Judges for the particular class for which they were respectively recommended, and who were unconnected with any exhibitor of stock, or maker of implements, and had no direct personal interest in the stock exhibited as the breeder of any of the animals upon which they might be called upon to adjudicate.

House-List.—The Council agreed by ballot to the House-List of Council required by the Bye-Laws to be recommended by them to the General Meeting at the annual elections on that occasion.

American Agriculture.—Mr. Colman, one of the Honorary Members of the Society, attended the Council, on his return from a visit he had paid to America, and reported the active progress made by the New York State, as well as by the Massachusetts Agricultural Society, especially in the application of chemical science to the immediate and practical purposes of agriculture. He was happy to find, in whatever direction he had moved in his native country, during his recent visit to the other side of the Atlantic, that while the labour, the intelligence, the enterprise, and the public spirit, of the Royal Agricultural Society of England formed the theme of general approbation, the cultivators of the soil in that part of the world were stimulated by its exertions, and following its example *pari passu*, with the same important results to the science and practice of remunerative farming. He had had the pleasure of communicating to his friend, Mr. Pusey, some interesting details connected with such results, and should be happy to find them considered by him worthy for the pages of the Journal of the Society. The New York State Society being already on the list of corresponding Societies, the Council, at the suggestion of Mr. Colman, took that opportunity of adding the Massachusetts Society to the list.

Veterinary Reports.—On the motion of the Hon. R. H. Clive, M.P., the Veterinary Committee were requested to report to the Council on the subject suggested by Mr. Clive at the previous meeting.

Lecture.—The Rev. Edwin Sidney communicated his

willingness to deliver a lecture before the Members on the occasion of the ensuing Norwich Meeting, as requested by the Council.

Miscellaneous Communications.—Colonel Challoner, Mr. Garrett, Mr. Hillyard, and Mr. Shaw (Northampton), gave notices of motion connected with the competition for the prizes of the Society. Letters were received from the Town-Clerk of Norwich, and the Superintendent of the Police of that city.

The Council then adjourned to Tuesday, May 8.

A Weekly Council was held at the Society's House, in Hanover Square, on Tuesday, the 8th of May. Present—The Earl of Chichester, President, in the chair; Duke of Richmond; Marquis of Downshire; Lord Camoys; Baron Mertens; Hon. R. H. Clive, M.P.; Hon. G. C. Agar; Mr. Almack; Mr. Raymond Barker; Mr. Burke; Colonel Challoner; Mr. E. Collingwood; Rev. J. Cooke; Mr. W. Dennison; Mr. Dyer; Mr. Fuller, M.P.; Mr. Brandreth Gibbs; Mr. E. Greenwood; Mr. F. Greenwood; Mr. Fisher Hobbs; Mr. Kinder; Mr. Neill Malcolm; Mr. C. E. Overman; Mr. Parkins; Prof. Sewell; Mr. Robert Smith; Mr. Spencer Stanhope; and Mr. Hampden Turner.

Exeter Meeting.—Mr. Charles Brutton, Secretary to the Local Committee at Exeter, having been the bearer to the Council, on the part of the authorities of that City, of their agreement with the Society, duly executed under the Great Seal of the Corporation and the signatures of the Mayor and Town Clerk, the Council directed a duplicate agreement to be sealed in their presence with the Great Seal of the Society, and signed by the President and Secretary, under the powers of the Charter of Incorporation.

Tobacco Culture.—The Duke of Richmond presented to the Council a specimen of the dried leaves of the Tobacco plant grown at Chelsea. His Grace also favoured the Council with the following statement made by the party from whom he had received the specimens then submitted to the inspection of the Members.

Every person cultivating fruits, vegetables, or flowers, especially in the forcing department, have been plagued to keep their houses and plants free from the numerous aphides to which they are subject, and to effect this without injury to the tender plants under cultivation. Tobacco is, at present, the only known safe and sufficient resource, and there are but few who have not found it more convenient and safe to make purchases of this essential article, notwithstanding its costliness, than trust to uncertain remedies. Among this number the Writer is obliged to place himself; but not until he had made many attempts to save or lessen an expenditure so unsatisfactory. Thus circumstanced, about the month of March, 1848, a gentleman, living in his immediate neighbourhood, who had been induced to attempt the cultivation of tobacco for his own consumption, the use of which he had found it expedient to discontinue, kindly offered his remaining stock to the Writer,

for the purpose of fumigating his plant-houses; and, on making a trial, it was found a most valuable article for the purpose, and far exceeding anything in efficiency he had ever before used. Information, as to the mode of its preparation and the particular variety, was fully obtained, and a determination to cultivate a sufficient quantity for all future purposes resolved upon. An inquiry was made for the sort required at the respectable Seedsmen of the Metropolis, but all to no purpose; the only tobacco procurable was the sweet or Virginian variety. This, my informant confidently affirmed, it was useless to attempt the cultivation of; but at length I succeeded, as I then supposed. A Florist and a friend, who himself had cultivated, as he stated, the particular sort I was inquiring after, gave me a small packet of his seed; and thus the first difficulty was supposed to be overcome, and its cultivation proceeded with. The number of plants prepared was 160, which were finally planted out the first week in May. As the plants grew it became manifest that the sort under cultivation was the Virginian variety of the finest description, and the most difficult to prepare. It was, however, too late to alter. The plants continued to grow despite the chilliness of our summer; and in the month of August, a first gathering of ripe leaves was made, which, when cured, yielded about 28lbs. of very fine tobacco. Early in September a second gathering, but little inferior to the first, produced about 14lbs.; and about the beginning of October, a final gathering of the young leaves was made, which, when green, weighed above 2 cwt., but only produced of cured tobacco 14lbs. The waste made at different times in the process of drying and curing, and leaves dirtied from proximity to the ground, amounted to about 14 lbs. The stalks also were found to possess a large portion of the tobacco qualities.

According to this statement, the relative produce, per acre, would be in the following proportion, allowing 6,000 plants to that space; while at Amersfort, in Holland, the average is 9,600:—

UPON A CALCULATION OF 6,000 OF

	lbs.	value at 6d.	£	s.	d.
Best Tobacco	1050	value at 6d.	26	15	0
Second	525	"	5d.	10	18
Third	525	"	4d.	8	15
Waste	525	"	2d.	4	7

£50 16 3

A money crop of fifty pounds per acre will doubtless startle at first sight, and I have endeavoured in vain to discover any mistake in the conclusions, while it should be remembered this experiment was made in 1848, and a more unpropitious season could not be selected. The only conclusion that it is possible to come to is, that a much larger sum per acre might be realized. The expenses of cultivation are small in comparison; the plants requiring principally to be kept clear from weeds, by repeated hoeing during the summer, affording an opportunity thoroughly to clean the land; and I have no hesitation in asserting that it is not an exhausting crop. One man would superintend three or four acres; additional help being only necessary at planting and gathering time. As an illustration of this part of the subject, I will give an extract from a letter, published by an Irish gentleman, in 1830, who had cultivated the plant successfully. He says:—

“The total cost of production in Ireland may be said to stand thus per English acre:—

	£	s.	d.
Two ploughings, one cross ploughing, two harrowings, rolling, hand-picking and cleaning of weeds, opening and rolling of the drills...	2	10	0
Rent	1	10	0
Labour from the planting to the curing process	11	5	0
Manure	2	8	0
Title and Assessments	0	3	6
	£17	16	6

“I find, from my farm accounts, the labour and charge upon a tobacco crop may be estimated at thirty pounds or thirty guineas per Irish acre, which is equal to eighteen pounds or eighteen guineas per English acre, where the land is prepared by horse labour. But in the county of Wexford, where the spade has been employed, the expense of plants, preparation, and labour is estimated at fifty pounds per Irish acre, or thirty pounds per English. It therefore follows that tobacco can be produced in Ireland for fourpence per lb., which is the price of tobacco of ordinary or middling quality imported from America. But, at the same time, a higher rate of remuneration is required for the Irish and British grower, to meet the casualties to which this delicate exotic is liable in our northern and variable climate.”

Miscellaneous Communications.—The Earl of Yarrowburgh transmitted, on the part of Mr. Culverhouse, the statement of a new mode of treating bones for manure by caustic alkali instead of acid.—Mr. Majendie presented a sample of Australian Wheat, on the part of Lady Franklin; and a supply of Potatoes, on the part of Lieut. Simpkinson, R.N. Mr. Majendie stated that the Potatoes were grown at Brown River, Van Diemen's Land, and were considered as the best variety in that part of the world.—Mr. Lance favoured the Society with his report on the growth of Potato seeds from Chili, and of Wheat from Australia, both of which had furnished unfavourable results, whilst his own potato seeds had succeeded perfectly; he attributed failure in the Chilian seeds to their having had their viscous pulp washed away from them, his own having been left with that natural covering attached to them.—Dr. Royle presented, on the part of the East India Company, a supply of the Deodara Pine Seed from the Himalayah Mountains.—The thanks of the Council were ordered for these communications.

The Council then adjourned to Tuesday, May 15.

A Weekly Council was held at the Society's House, on Tuesday, the 15th May; present, His Grace the Duke of Richmond, K.G., trustee, in the Chair; Earl Ducie; Lord Bridport; Baron Mertens; Hon. H. W. Wilson; Hon. R. H. Clive, M.P.; Hon. Capt. Dudley Pelham, R.N.; Hon. Colonel H. Nelson Hood; Sir John V. B. Johnstone, Bart., M.P.; Sir John P. Boileau, Bart.; Mr. Almack; Mr. Raymond Barker; Mr. W. Burroughes; Rev. Thomas Cator; Colonel Chaloner; Mr. Capel Cure; Mr. Evelyn Denison, M.P.; Mr. Druce; Mr. Dyer; Mr. Brandreth Gibbs; Mr. Foley, M.P.; Mr. Fuller, M.P.; Mr. Hawkes; Mr. Fisher Hobbs; Mr. Kinder; Mr. W. H. Little; Mr. Milward; Mr. C. E. Overman; Professor Sewell; Mr. Slaney, M.P.; Mr. Spencer Stanhope; Mr. Stansfield,

M.P.; Mr. Edward Tull; Mr. C. H. Turner; Mr. T. Turner; Mr. T. R. Tweed; Professor Way; Mr. Henry Wilson; and Mr. Geo. Wood.

Communications were received from Mr. Little, of Llanvair Grange, Monmouthshire, on the stoppage of drains under crops of mangold-wurzel, with specimens of the fibrous matter found in the drains; from Mr. G. E. Frere, of Roydon, Norfolk, on the *Lecythis Zabucajo*, of Brazil, and the *Araucaria imbricata*, of Chili, with a copy of the first number of Sir W. Hooker's *Journal of Botany*; from Mr. Greaves, of Matlock, Bath, Derbyshire, a report on his trial of various foreign seeds, transmitted to him from the Council (referred to the Journal Committee); from Mr. Slaney, M.P., on the great advantages of sewerage manure, and on garden cultivation, the industrial training of youth, and the instruction of children in workhouse unions; from Mr. Blamire, on the value of water impregnated with lime, applied on pasture lands during the night, in hot summers; from Mr. Parkes, on the system of subsoil irrigation, in conjunction with drainage, recommended by him in his lecture at the Newcastle Meeting, in 1846 (*Journal*, vii., 249-72); from Mr. Raymond Barker, a statement on the efficacious results obtained by Mr. Tower, in the administration of alcohol, in a certain state of dilution with water, to cattle affected with pleuropneumonia (referred to the Veterinary Committee); from Mr. Fuller, M.P., a report on the singular exemption of Alderney cattle, in immediate communication with disordered animals in Anglesey, from the epidemic prevailing in that part of the country, the only instance of attack among the Alderneys being that of a bull of that breed, which recovered, although confined in the same house in which the Anglesey cows were dying (referred to the Veterinary Committee); from Baron Mertens, an inquiry as to the comparative hardness of the short-horned and Hereford breeds of cattle. These communications gave rise to most interesting discussion and detail of practical experience, among the members present.

Mr. Mayhew presented a copy of his work on the Horse's Mouth; and M. le Chev. F. M. d'Orgebray, of Paris, a copy of his work on agricultural cultivation, in connection with drainage.

The Council then ordered their usual thanks for these communications, and adjourned (over the week of the General Meeting) to Tuesday, May 29.

NEW MEMBERS.

Sir Robert Jacob Buxton, Bart., of Shadwell Park, Thetford, Norfolk; John Tanqueray, Esq., of Hendon, Middlesex; and William Fisher Hobbs, Esq., of Boxted Lodge, near Colchester, were elected Governors of the Society.

The following new Members were elected:

Abel, John, Norwich
 Aldous, Robert, Burlingham, Norwich
 Andrew, George, Carne, St. Austell, Cornwall
 Armitage, George, Yattington, Newbury, Berks
 Barthropp, N. G., Cretingham, Woodbridge, Suff.
 Barwell, John, Norwich
 Batterham, John, Terrington, Norfolk
 Beare, Samuel S., Town-close, Norwich
 Benson, J., York
 Blyth, Robert John, Norwich
 Brady, Robert Watts, Kerdiston, Recpham, Norfolk
 Bridges, John Westwood, Tuxford, Notts.
 Brown, Frederick, King-street, Norwich
 Buckland, Thomas, Wraybury, Staines, Middlesex
 Burton, David, Jun., Cherry-Burton, Beverley, Yorks.
 Busk, Joseph, Little Berkhamstead, Herts
 Case, Frederick, Testerton House, Fakenham, Norf.
 Chaffey, Richard Trenchard, Perridge House, Shepton Mallett, Som.
 Chamberlain, Robert, Sheriff of Norwich
 Clarke, W. R., Wymondham, Norfolk
 Coode, George, Haylock, Newton-le Willows, Lanc.
 Fellowes, Richard, Inglefield House, Reading, Berks
 Fellowes, James, 29, Gloucester-place, Portman-square, London
 Fellows, William Manning, Ormsby, Great Yarmouth, Norfolk
 Fernandez, Edward, Hatton Parsonage, Warwick
 Gidney, Jeremiah William, East Dereham, Norfolk
 Girling, John, Earham, Norwich
 Gower, George, Dilham, Smallburgh, Norfolk
 Harris, James, Plumstead Common, Woolwich
 Hastings, John, Jun., Gressinghall, East Dereham, Norfolk
 Hill, Josiah, Briston, East Dereham, Norf.
 Hills, David, Norwich
 Holland, Dr. Charles, Rodbaston Hall, Stafford
 Holloway, Henry, Ringwood, Hampshire
 Kendall, John, Hog Hall, Burbage, Hinckley, Leicestershire
 Hotchkyye, Arundel Calmady, Cleverdon House, Bradworthy, Devon
 Ludgater, John, Stiffkey, Wells, Norf.
 Mumford, George, Cockfield, Stowmarket, Suff.
 Nicholson, Henry, Peterborough, Northamptonshire
 Patrick, Jarman, Wiggenhall, St. German's, Lynn, Norfolk
 Pike, Llewellyn Adolphus, Chute, Wilts
 Pillans, William Potts, Swaffham, Norfolk
 Platten, Robert, East Winch, Lynn, Norfolk
 Proctor, Thomas Beauchamp, Langley Park, Loddon, Norfolk
 Sallitt, Matthew, Saxlingham, Norwich
 Sharman, Peter, Elsing, East Dereham, Norfolk
 Sharman, Peter John, Scarning, East Dereham, Norfolk
 Stevens, Robert, Watton, Norwich
 Suggers, George, Hurstperpoint, Sussex
 Thompson, Robert, Norwich
 Turner, John, Trowse, Norwich
 Underwood, Joseph, Blackheath Park, Kent
 Vincent, John Francis, Frostenden, Wangford, Suff.
 Ward, Robert Maystone, Watton, Norfolk
 Webber, Samuel, Ipswich, Suffolk
 White, Richard, Norwich.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The half-yearly **AUDIT OF ACCOUNTS** was held at the Society's House in Hanover-square, on Friday, the 18th of May. Present: Colonel Challoner, Chairman of Finance; Colonel Austen, Mr. Raymond Barker, and Mr. Blanshard, Members of the Finance Committee; and Mr. C. Hampden Turner, Mr. Knight, and Mr. Beman, Auditors on the part of the Society. The accounts were examined; and being found correct, were certified accordingly by the signatures of the parties present.

The **SPECIAL COUNCIL** for taking into consideration the Report to be made by the Council to the ensuing General Meeting of the Society was also held on the same day. Present: Mr. Raymond Barker, Vice-President, in the chair. Hon. Captain Dudley Pelham, R.N.; Sir Matthew White Ridley, Bart.; Sir Charles Lemon, Bart., M.P.; Sir John V. B. Johnstone, Bart., M.P.; Colonel Austen; Mr. Barnett; Mr. Blanshard; Mr. French Burke; Colonel Challoner; Mr. Milward; Professor Sewell; Mr. Stansfield, M.P.; and Mr. C. Hampden Turner.

The half-yearly **GENERAL MEETING** was held at the Society's House in Hanover-square, on Tuesday last, the 22nd of May. The Earl of Chichester, President, in the chair. The Secretary, by direction of the President, read the following Report from the Council:—

REPORT.

The Council have to report to the Members at their present General Meeting, that during the past half year 3 Governors and 226 Members have been elected into the Society, 3 Governors and 35 Members have died, and the names of 6 Governors and 893 Members have been, on various accounts, omitted from the list of the Society, which accordingly now comprises—

- 89 Life Governors,
- 178 Annual Governors,
- 582 Life Members,
- 4643 Annual Members, and
- 20 Honorary Members.

They think it, however, right to remark that, in the list of names which have been erased from the books of the Society, are included, not only those of members who, for various reasons in the course of things, have signified their desire to withdraw; but a much larger number, who, with reference to the transactions of former years, have ceased to belong to the Society. A corrected list of the Governors and Members will be printed at the end of the Volume of the Journal for the present year.

The Council have elected Mr. Thomas Raymond Barker a Vice-President of the Society, in the place of the Earl Talbot, deceased; and Mr. Henry Blanshard, a General Member of the Council, to supply the vacancy created in that body by the transfer of Mr. Barker's name to the list of the Vice-Presidents. They have also elected Professor Simonds an Honorary Member of the Society.

By the sale of £1000 Stock out of the invested capital of the Society, and the application of a portion of the current cash balance in the hands of their Bankers, they have been enabled to pay off the loan contracted with Messrs. Drummond in the autumn of last year; and they have received from the Chairman of the Finance Committee an intimation that previously to the ensuing Country Meeting, the Committee will be fully prepared to report in detail the result of their investigations into the whole financial condition of the Society, both in reference to points in which the expenditure may be submitted to judicious control, and to measures by which the income of the Society may be relieved from the inconvenience arising from unpaid arrears of subscription.

The Council receive with the highest satisfaction the continued assurance of the increasing value of the Journal of the Society; and it is a most gratifying fact, that out of an issue by post of upwards of 5000 copies of the last part, addressed to Members residing in remote localities in the kingdom, only one instance of miscarriage has been complained of. They cannot but regard the combination of these most important circumstances, namely, the increased value of the work and the facilities for its mechanical transmission, as calculated very essentially to effect the diffusion of sound practical knowledge among their Members, and through them among the agricultural community in general. They have decided, that the price of the Journal to non-members shall henceforward be ten shillings for each part, instead of six shillings as heretofore.

The Council, feeling the essential importance of calling in the direct aid of science for the purpose of effecting a decided advancement in the great object of improved cultivation, by the development of the latent energies of the soil, and a more exact knowledge of the sustenance required by or taken up by plants, have, after mature deliberation, agreed to the following report of their Chemical Committee, in the hope that while an immediate personal privilege is conferred by it on the members of the Society, a decisive step will have been taken for the attainment of the more remote, but not less certain, advantages resulting from a well-organized system of chemical research, on questions connected with the mutual relations of the plant and soil, and from analytical investigations into the composition and value of substances produced by the farmer, or employed in his operations.

"REPORT OF THE CHEMICAL COMMITTEE.

"The Committee recommend that in future the privilege of obtaining analyses of manures, agricultural products, and soils at the following reduced rates be made a privilege of all Members of the Society.

"No. 1. An opinion as to the genuineness of a manure in the market.—7s 6d. By this is meant such an opinion as could be formed by a scientific person, by inspection, with a few simple confirmatory experiments.—[It will protect from fraud, but is not calculated to assist materially in the choice of the *best* specimens, where all are *genuine*; it will inform the applicant whether a specimen of guano, or oilcake for instance, be adulterated or not; but will not touch the question of its relative value as a pure specimen. Such an opinion will only apply to ordinary market articles, as guano, oilcake, superphosphate of lime, sulphate of am-

monia, gypsum, common salt, &c.] No. 2. Guano. A determination of the nitrogen (ammonia), or of the same and of the earthy phosphates, &c.—£1. The following is an instance, taken at random, of such an analysis:—Water, 17.95; organic matter, and ammoniacal salts, 51.39; sand, &c., 1.34; earthy phosphates, principally phosphate of lime, 20.98; alkaline salts, and loss to make up the difference, often consisting of common salt, &c., 8.34. Total, 100.00. This is all that is needed to give the agricultural value of guano, or a close approximation to it. No. 3. Limestone. The proportion of lime.—7s. 6d.; the proportion of magnesia.—10s.; the proportion of lime and magnesia.—15s. This analysis is sufficient for many purposes; but in most limestones, sulphur, lime, phosphorus, and magnesia are present. The next analysis is better for farmers, inasmuch as it is impossible to say how much of the effect may be due to minute ingredients. No. 4. Limestone, or Marls, including carbonates, phosphates, sulphate of lime, and magnesia, with sand and clay.—£1. No. 5. Partial analysis of a soil, including sand, clay, organic matter, and carbonate of lime.—£1. No. 6.—Complete analysis of soil.—£3. No. 7.—Letter, asking advice, *one* topic, 7s. 6d. On more than one topic, 10s. No. 8. Oilcake, or dung, or any animal products (such as cheese or butter in milk), nitrogen, and phosphoric acid.—£1. Oilcake, including nitrogen, oil, and phosphoric acid, 30s.

“That a salary of £200 a-year be paid to PROFESSOR WAY for this purpose, and that the Committee have further power to expend a sum not exceeding £300 a year in such chemical inquiries for the Journal as the Council shall think expedient from time to time to direct, on consideration of the report made by the Chemical Committee.”

The Council have decided that the ensuing Country Meeting of the Society, at the city of Norwich, shall be held in the week commencing Monday the 16th of July, the Thursday, as formerly, being the principal day of the Show; and they have the satisfaction of reporting that, great as was the number of implements exhibited at the York Meeting of last year over the entries on any former occasion, the number entered for exhibition and trial at the ensuing Norwich Meeting exceeds that amount by a very considerable number. They have received from the principal railway companies throughout the kingdom a grant of the same liberal concessions in favour of the Society's exhibitors as was made by them last year, namely, the free conveyance of live stock, and a reduction of one-half the usual rates of charge for implements, on proceeding to the Show, and with similar concessions on returning from it, provided the animals or implements are unsold and remain *bonâ-fide* the property of the respective exhibitors. The authorities of Norwich have granted the free use of St. Andrew's Hall, fitted up at their own expense, for the purposes of the Great Dinner of the Society, and of the Council Dinner; and Professor Simonds, and the Rev. Edwin Sidney, have kindly consented to deliver Lectures before the Members on the occasion of their meeting in that city—the former, “On the Diseases of the Organs of Respiration, with particular reference to Pleuro-Pneumonia, in the Ox;” the latter, “On the Parasitic Fungi of the British Farm.” It has been decided that the Country Meeting of the Society for the Western District shall be held next year at the city of Exeter; and that the District for the year 1853 shall be comprised of the counties of Leicester, Lincoln, Nottingham, and Rutland, and be designated the East-Midland District.

The Council have the satisfaction of receiving from their Journal Committee the most favourable report of the number and value of the Essays competing for the Society's Prizes of the present year. They believe that the spirit of inquiry thus aroused on so many important topics of practical interest will lead to that continued progress in the improvement of agricultural economy, in all its branches, which it has hitherto been the great object of the Society to promote. But while they regard the stimulus of honorary distinctions and pecuniary rewards, the collection and dissemination of important facts, and the communication of personal experience among farmers themselves at the Council Meetings in London, and at the Country Meetings held in successive districts of the kingdom, as most effective means for the extension of agricultural knowledge; they rely with the greatest confidence on the friendly co-operation of the owners and occupiers of land, for devising and carrying out, to their mutual advantage and the common good of the country, the most approved systems for the cultivation of the soil, and the best measures for promoting the comfort and welfare of those who depend upon it for their support.

In conclusion, they beg to remind the Members of the Society that the Council Meetings, on the first Tuesday in each month, are set apart for the strictly official business of the Society, in order that the Meetings on the other Tuesdays of the month may be devoted to the consideration and discussion of such communications of a practical nature as may, from time to time, be made to them; and they are desirous to make it extensively known that every Member of the Society has the privilege of attending such three Weekly Meetings of the month, and has it in his power to contribute, by his participation in their proceedings, to the common interest of the parties present, as well as to the gradual promotion of the several objects of the Society.

By Order of the Council,
London, May 18, 1849. JAMES HUDSON, Sec.

On the motion of Mr. Rowlandson, of Liverpool, seconded by Mr. Moore, of Appleby, Leicestershire, this Report was unanimously adopted.

Colonel Challoner, Chairman of the Finance Committee, presented the Balance Sheet from the Auditors of Accounts; from which it appeared that the balance in hand and the total receipts for the half-year ending December 31, 1848, had been £5,331, and the total payments during the same period £4,733; leaving a balance in hand of £598. Colonel Challoner then submitted to the Members the quarterly Statement of the Funded Property of the Society, and of income and expenditure; and reported the steps in progress by the Finance Committee for the recovery of the arrears of subscription due from Members, but remaining unpaid.

On the motion of the Rev. G. F. Holcombe, seconded by Mr. R. W. Baker, the thanks of the Meeting were voted to the Finance Committee; and on the motion of Sir John Johnstone, seconded by Mr. Hillyard, to the Auditors, for their care in inspecting and reporting upon the Accounts of the Society.

On the motion of Mr. Raymond Barker, seconded by

the Earl of Ducie, the Marquis of Downshire was unanimously elected President of the Society for the ensuing year.

On the motion of Mr. Parkins, seconded by Mr. Little, of Llanvair, the Trustees were re-elected.

On the motion of Mr. P. Pole, seconded by Mr. Dyer, the Vice-Presidents were re-elected.

The Members having delivered in their Balloting lists, the President named Scrutineers for their examination, who reported the unanimous election of the following 25 Members of Council for the ensuing two years:—Col. Austen, Mr. Barnett, Mr. Bennett, Mr. Bramston, M.P., Mr. Brandreth, Col. Challoner, Mr. Childers, M.P., Mr. E. Denison, M.P., Mr. Foley, M.P., Mr. Hamond, Mr. John Hudson, Sir John V. B. Johnstone,

Bart., M.P., Earl of Lovelace, Mr. W. Miles, M.P., Mr. Milward, Sir Robert Price, Bart., M.P., Sir M. W. Ridley, Bart., Mr. Shelley, Lord Southampton, Mr. Stansfield, M.P., Earl of Stradbroke, Mr. C. Hampden Turner, Mr. George Turner, Mr. Henry Wilson, Stowlangtoft, and the Hon. Henry W. Wilson.

On the motion of Mr. Pickin, of Whitmoor, seconded by Mr. P. Pole, Mr. Bell Crompton, of Driffeld Hall, Derbyshire, was elected an Auditor of Accounts in the place of Mr. C. Hampden Turner, then elected on the Council.

On the motion of the Earl of Ducie, seconded by Lord Feversham, the best Thanks of the Meeting were voted by acclamation to the President, who acknowledged the compliment. The Meeting then broke up.

CALENDAR OF HORTICULTURE.—JUNE.

RETROSPECT.

The ungenial weather of April terminated with the 27th day. Then a rise in the barometer with increased temperature, afforded a prospect of a change, which was realized on the 29th. One of the most severe visitations of that so-called "showery" month occurred on the 17th, when, after the close fall of snow in the afternoon, noticed at the end of May calendar, three or four degrees of biting frost fixed the snowy crystals upon the tender organs of the fruit-trees then in blossom; thus no doubt greatly decomposing their tissue. But this was not all: more snow fell in the night, and the bright morning sun of the 18th, acting upon the frozen particles, scalded the bloom, and indeed many succulent and delicate leaves. The mischief was done, and by no means remedied, on the 19th, when snow was profuse to an extent seldom witnessed. On inquiry and inspection, it should appear that nine-tenths of the unprotected peach, nectarine, and apricots have to that amount lost their fruit, that many pear and plum-trees have been severely affected, but that the apples remained unscathed, so that the blossom gives promise of abundance. The trees form beautiful garlands, and this most valuable of our culinary fruits may prove an ample compensation. A large proportion of gooseberries and currants are probably lost. Vegetables were retarded, and spring cabbage has been dear and scarce. Among ornamental plants, the delicate leaves of the rose, particularly those of the shoots from last summer's buds, which were coming forward on the 16th, suffered much by parching; but beyond that, serious injury does not appear to have been inflicted. Such casualties—not of un-frequent occurrence in April and May—warn us not to be too early confident: and now, May 17th, when the gardener has been taught by experience,

that he can safely proceed to decorate his parterres, we may retrace by-gone years, and thereby learn that the rule so established admits of some fatal exceptions. It was, if I mistake not, in the forenoon of May 17, 1837, that one of the heaviest falls of snow occurred: its duration was inconsiderable, but a frost of a few hours succeeding my vines, on a south-east wall, were so injured, that I was obliged to cut back the spring shoots, some nearly 12 inches long, in order if possible to obtain any fruit on secondary shoots from their lower eyes. Some were produced, but the crop was a mere apology.

Many dry and sunny days have tended to reinvigorate every species of plant, and the gentle rains which fell about the middle of May have already clothed nature with the richest verdure. One more remark will close this retrospect. May of late years has been hot, dry, and parching; and we believe that more injury to fruits was thus occasioned than by any winter weather of April.

OPERATIONS IN THE KITCHEN GARDEN.

1st. *Cucumbers* in the open air should again be sown, and very early, over a deep layer of warm manure, covered with several inches of light, rich earth raised in a hill or ridge. Dr. Lindley observes:—"It is a great advantage to cover the ridges with clean straw, or peas-haulm, when the plants are grown long enough to be trained upon the ridges: it will serve to keep the sun from parching the ground, in hot, dry weather, and to prevent the blossoms and young fruit from being covered with soil during rain. Covering also obviates the spotting of the fruit in autumn." Fronds of fern would answer the purpose, and these as they decay are convertible into good vegetable manure—as they contain salts of potash. Stop the *runners* at the fifth or sixth joint, and hook them down in regular order by fern or other slender pegs.

Kidney beans and "runners." Sow early; and again about the longest day. Sowing in pots or pans of light earth is the best and safest method, because the seeds may thus be protected from excess of moisture; and, when transferred to the rows (under which there should be some rich, decomposed manure—the plants grown in pots till they have produced the true leaves,) will take to the ground and make secure progress; some air-slaked lime an inch or so beyond the plants on each side, would defend them from slugs.

Peas—Sow early the last crop of Scimitars, Hotspurs, and Warwicks: and about the 18th to 24th Knight's marrows, watering the drills effectually should the weather be dry. This crop, if it succeed, will yield well, and acceptably till Michaelmas.

Celery from the nurse rows:—Transplant into trenches in the first and third week. Continue to sow *cape broccoli*, *lettuce*, *radishes*, *spinach*, and *small salad*ing.

Parsley.—To obtain this plant in perfection transfer to beds or borders some of the most double plants that can be found; or otherwise thin out the greater part of the seedlings, leaving only the double-leaved 4 to 6 inches asunder. Do the same by curled cress, and curled cheveril for seed. *Transplant* early broccoli, all the winter greens, and seedling cabbages. Hoe carefully *beet-roots*, *carrots*, *parsnips*) letting none stand closer than 8 to 10 inches apart) and *onions*. Transplant *leeks* after digging and manuring a strip of ground a yard or four feet wide; make deep holes when the ground has settled, and toward the end of June drop some sifted manure into the holes; take up a strong seedling leek for each hole, trim away a few of the straggling roots, hold the plant upright, and so place it in a hole centrally, resting on the manure; pour soft water very gently into the cavity till it reaches half way up the leek; this will carry down mould sufficient to fix it upright, and the plant will swell and adapt itself to the hole as in a case or mould; water is to be given again if the weather prove dry.

Endive:—Defer the main crop, but transplant at the middle of June some of the first sown May seedlings to an open spot of ground.

At the same time *turnips* for the autumnal supply; hoe the plants already growing, and with leaves an inch or more broad, and thin them out to stand at regular distances.

Asparagus:—Continue to cut till midsummer; then desist. If seed be required, retain one or two of the early and best stalks. When the cutting is over, clean the beds thoroughly. Keep seeding beds hand-weeded.

Sweet herbs can still be raised from slips and cuttings. Those intended for winter use should

be cut and carefully dried in an airy out-house; if for distilling they should be collected when the blossoms became apparent, as they then abound with the essential oils.

HARDY FRUIT DEPARTMENT.

Finish the disbudding of the stone fruit trees, the object of which is to remove, while in a tender state, all those supernumerary shoots that cannot be trained in proper order: and it is far more prudent to do this in the spring by pinching, than to leave them to the knife when hardened by maturity. If fruit abound (a rare case I expect), thin out to one on a shoot; but do this work by degrees till stoning be advanced, when the fruit usually becomes secure.

Apple and pear trees:—It is customary to fore-shorten for spurs twice; that is, about midsummer, and again after the second shooting. I have always thought, that one effectual regulation after the midsummer shoots, would accomplish all that can be desired: but more on this subject in July.

Train in such new branches of the *wall-trees* as are required to fill up blank spaces, so soon as the firmness and flexibility of the wood will safely permit the operation.

Wall vines must be so regulated as to secure an ample supply of fruit in single bunches; stopping back to the second eye above the cluster. Train new wood where required, and remember, that henceforward the trees will require attention every week or ten days.

Strawberries:—The fruit promises to be most abundant, and these fine rains of May will secure the bloom now rapidly expanding. Straw, fern, grass-mowings, or whatever covering is used to keep the fruit clean, ought to be applied (where it is not yet so) thickly to prevent evaporation, a precaution far more profitable than artificial waterings can be. Cut off every runner as it develops itself, unless in cases where a fresh set of plants is required, when any string that starts from a very prolific parent should be pegged down close to the first plantlet, or into a small pot of mould let into the ground under it. Destroy snails and insects: use dusty lime freely.

EXCITED FRUITS.

Melons are now in full bearing, and attention is required to stop the secondary shoots above a fruit, and to train the leaders on a trellis, so that each melon can be supported and turned to the sun. Air and water must be given at proper times. *Cucumbers* do extremely well in pots, as experience has amply proved. The best soil is thoroughly decayed couch-grass roots, which are collected from a field of soft crumbly loam mixed with some very fine manure. It is late to mention this prac-

tice, but I found it proved in the pine-stove of a gentleman who required a fruit every day of the year; and very lately I saw in an orchid-house one plant which had produced five or six fine cucumbers: it was then cut back for a second crop and scarcely occupied a yard of the roof. The vaporous atmosphere of the place just suits the plant, and so would that of a low double-span propagation house.

ORNAMENTAL DEPARTMENTS.

In the retrospect, allusion was made to planting and bedding out. These, in the north of England, may be more safely effected at the beginning of June than earlier, as frost is apt to linger; but whatever period may be chosen, the gardener should be assured that to produce luxuriant and rich coloured leaves and flowers, fresh and appropriate soils ought to replace those of all the plots, after digging out the old earth and carrying it away to the depth of 12 to 18 inches: the alkalies, silicates, and humus of the several soils will then be in perfection, and produce their effects, as wanted, for lawn figure beds. Select individual groupings are to be preferred, but a miscellaneous selection, the "colours and sizes so arranged as to produce harmony" ought to occupy flower borders, otherwise

how should we be able to introduce the old favourite herbaceous plants?

FLOWERS UNDER GLASS.

Give air and sufficient water to the plants in the conservatory and greenhouse.

Roses in pits will demand minute attention to guard against aphid and that ruinous "miner" the caterpillar, which encloses itself in the tender leaves about the bloom. *Orchidaceous plants* are now rapidly advancing to flower. In the first week of May I saw Messrs. Rollisson's great double-span house, the heat at 80°, vaporous to saturation, and the floor at noon-day floating. The dark spring had retarded the blossoming of many of the more than 2,000 species, but still there were striking beauties visible; among many others a magnificent *Denæobium frimbriatum*. Every day now will develop lovely varieties of these most wonderful tribes which to the ardent botanist are so justly interesting.

Floods of rain have visited this locality; we want sun now, for nature is clothed, nay, burdened with luxuriant verdure, and with it the process of maturation will proceed with corresponding activity.

Croydon, May 21.

J. TOWERS.

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR MAY.

The weather in the early part of the month being cold for the time of year, vegetation in general made very little progress, and complaints of the shortness of grass, even in the most forward districts, came to hand. Since the 20th the temperature has continued mild; hence, the crops, aided by warm genial rains, have grown rapidly, and appear to have nearly, or quite, recovered from the effects of the cold winds experienced in the preceding month. The accounts from nearly all quarters, relative to the growing wheats, are very satisfactory, almost without an exception; and we may observe that we never recollect a season during which so few complaints have reached us. Barley, oats, beans, and peas, which at the date of our last report were exhibiting a somewhat unfavourable complexion, are represented as promising a good yield. The rye plant is now in full ear in several parts of England.

Notwithstanding the continuous large arrivals of grain and flour from abroad, very little change has taken place in the value of any kind of wheat. The blockade of the German ports by the Danes gave hopes at one period that prices, owing to the difficulties in the way of transit from the Baltic, would

improve; but, with a free-trade in corn with all the world, and abundant stocks in France, Holland, Belgium, as well as in the United States, combined with low currencies abroad, any permanent advance in the quotations appears very doubtful. From the commencement of the present year up to this time, we have been consuming foreign "bread-stuffs" at the rate of upwards of twelve million quarters per annum; and, so far as our experience carries us, there is, we conceive, every prospect of an increase rather than a decrease in the arrivals, even though speculative investments on this side are smaller than for many years past. To some extent our markets will be regulated by the state of the weather and the future prospects of the growing crops; but, as it is admitted on all hands that the stocks of home-grown corn on hand are very small, and quite inadequate to meet the wants of the consumers, it is evident that very large importations will be required to keep prices down to their present level. We make these observations not for the purpose of lulling our farmers into a state of false security — in other words, of inducing a belief that enhanced rates will be realised during the coming season; yet we cannot conceal from them the all-important fact that consumption

is considerably in advance of our producing powers. In some parts of England scarcely any old wheat is to be met with; and a large portion of that grown last year has already passed into the hands of the millers. That our deficiencies will be made good does not admit of a doubt; and, though the Baltic may be closed against us during the whole of the present year—which, by the way, is scarcely probable—it is evident that almost unlimited quantities may be drawn from the United States, without enhancing prices there more than from 1s. to 2s. per quarter.

The stocks of potatoes have now become nearly exhausted; but our markets have been largely supplied from France, Holland, and Belgium, from whence we have received during the month nearly 10,000 tons. The best English qualities have sold in the metropolitan markets at from 200s. to 220s., and the best foreign 110s. per ton, inferior kinds having gone as low as 80s.

Potato planting is over, even in the north; and the sets are looking extremely well.

Depastured beasts and sheep have not fared quite so well as in the ordinary run of years, owing to the want of grass; hence, large quantities of dry food have been consumed upon most stock farms. The extensive supplies of hay produced last season have materially checked the sale for artificial food, which is selling at lower rates than we have known them during the last ten years. The epidemic has again made its appearance in some parts of Norfolk, Suffolk, and Lincolnshire; its ravages, however, have not been of an alarming character. The sheep are now tolerably free from disease.

On the whole, the show for fruit in Kent and elsewhere is good. On the Continent the blossoms have set remarkably well, and, consequently, we may expect heavy importations from France and Holland.

The provision markets have continued in a very inactive state. There has been a slight rally in the value of live stock; yet it is evident that high prices are wholly out of the question. In our own grazing counties there are large numbers of both beasts and sheep ready for slaughtering; while, on the Continent, they continue large. A favourable turn in our markets would speedily produce heavy arrivals and importations. The condition of the supplies is unquestionably good.

Notwithstanding that the imports of foreign grain into Ireland have been large, direct as well as from Liverpool, the corn trade has ruled tolerably firm, and prices have been fairly supported. The consumption of Indian Corn in the above country appears to be greatly on the increase; indeed, it appears likely to become the staple article of food amongst the lower classes. The stocks of grain on

hand have been reduced to a low ebb, although the shipments during the whole of the present year have been unusually small, the growers finding it impossible to compete with the foreigner in our markets.

Letters from Scotland speak in favourable terms of the prospects of the fields. As large supplies of foreign and colonial produce are expected to arrive during the ensuing month, and as the accounts from the south have induced caution in getting into stock, the corn trade has ruled heavy, and, in some instances, the quotations have had a downward tendency. The late shipments of oats to London have yielded no profit to the farmers.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

The heaviness in the demand and the miserably low prices in Smithfield, alluded to in our last *Review*, have been followed by a slight reaction for the better. Still, however, the sudden changes in the trade have failed to produce any positive benefit to the graziers. In the early part of this month the value of live stock in the above market was lower than ever remembered; but about the second week, from the comparatively limited arrivals, the trade became tolerably steady, at an advance in the quotations of from 4d. to, in some instances, 6d. per slbs. The supplies having improved to some extent, the demand again fell off, and, with it, prices receded quite 2d. per slb. Thus, it will be perceived that, though the value of stock has slightly advanced, it is still beneath a paying point. An impression appears to have gained ground that improving markets may be reasonably looked forward to. We ourselves are not prepared to reason thus, as it cannot be doubted for a moment that, at the present time, the numbers of both beasts and sheep at this time in the country are very large, and, further, that the available supplies in Holland and Germany are in excess of those at many previous corresponding periods of the year, notwithstanding the heavy shipments to England during the years 1847 and 1848. The imports into London, since our last, have been as under:—

Beasts	1,427 Head.
Sheep	3,047
Lambs	5
Calves	977
Pigs	9
Total	5,465
Same month last year	7,904
Same month in 1847	6,275

The continuance of the Danish war has prevented any shipments of consequence from the German ports to Hull, &c.; hence, to some extent, the falling

off observed in the arrivals, as shown in the above statement. The arrivals at the outports have been confined to about 800 head.

The supplies brought forward in Smithfield have been as follows:—

Beasts	16,320	Head.
Cows	450	
Sheep and Lambs	115,340	
Calves	1,555	
Pigs	2,193	

CORRESPONDING PERIODS.

	May, 1847.	May, 1848.
Beasts	17,175	16,541
Cows	601	491
Sheep and Lambs	109,670	102,230
Calves	1,727	2,087
Pigs	2,816	2,581

From the Isle of Wight 1,264 sheep and lambs have reached us. The supply, by sea, from Ireland, has amounted to 227 beasts, 200 sheep, and 200 pigs.

Several arrivals of preserved meat have taken place from Sydney, as well as from South America.

The bullock supplies have been chiefly drawn from the undermentioned counties:—

	Head.
Eastern counties	6,300
Western and midland counties	2,400
Other parts of England	2,450
Scotland	1,040

COMPARISON OF PRICES.
Per 8 lbs. to sink the offal.

	May, 1847.		May, 1848.	
	s.	d.	s.	d.
Beef, from	2	0to3	8	3
Mutton	2	4	3	10
Lamb	4	8	6	0
Veal	3	0	4	0
Pork	3	2	4	2

Full average time of year supplies of slaughtered meat have been received up to Newgate and Leadenhall markets, which have continued in a very inactive state, at a trifling improvement in the general quotations.

DURHAM.

During the whole of the past month and up to the 13th inst., the weather was exceedingly cold and winter-like, with heavy falls of snow and hard frosts; and vegetation that was so forward in March has been much checked, and the young grasses began to assume a brown and unhealthy appearance. Turnips were quite exhausted, and keep for stock of every description was scarce, and hay advanced in price; since then we have experienced weather of a mild and genial character; a sufficiency of fine mild rains has fallen, and the injury done to the growing crops has, in a great degree, been repaired. The wheat is late, but promising, except on wet stiff clayey soils, that was sown in a wet state; the plants appear sickly and thin on the ground. In consequence of the unprecedented fineness of the months of February and March, an unusual large breadth of wheat

was sown under very favourable auspices; and should we have a bountiful harvest here and on the continent, the prices will be ruinous in this country; but what does cheap bread avail, if you reduce the means of purchasing it? It is very clear and obvious that this country, like Ireland, is visibly getting worse every day; and this is not to be wondered at, when we see such prodigious efforts have been made by a set of men, not only to depress but to entirely ruin agriculture; but how frequently do we see the deep-laid schemes of designing men frustrated and overthrown by the power of an overruling Providence! We are sorry to observe that in too many instances the greatest distress is apparent amongst the agricultural community; they are placed in most serious difficulties by foreign competition, their own produce being entirely neglected. We fear, notwithstanding their utmost exertion, they will be unable to maintain that position and uphold that independence for which the farmers in this country have been so long distinguished. The May-day rent audits have been thinly attended. We are well aware that tenants are paying their rents out of their capital. The quantity of potatoes planted in this country is without a parallel; they have been consigned to the ground under very favourable circumstances; the early kinds of seed have been preferred, having escaped the disease last year more generally than the later descriptions; early planting is much recommended. The month of March was remarkably favourable for the lambing season; their increase has been very satisfactory to the breeder; the weather proving so fine, very few deaths have been experienced; the price of couples have greatly fallen since last year. The price of fat stock has this year proved a most ruinous business, the whole of the winter keep being entirely given away; extensive losses have been sustained by grazing. Store cattle comes to market in miserable condition; it is very difficult to effect sales, and prices are still receding. At our hirings for farm servants great dulness prevailed, many excellent servants having attended all the hirings in the county without being asked what they went for; good labourers cannot obtain employment, and many are working for their meat. We think it is time for Peel and Co. to admit they have been in error with their free-trade measures, and leave it to more competent hands to legislate. Peel has always betrayed every cause he has undertaken to serve. Every farmer can employ double the number of hands on his farm, but the clever and talented Co. are desirous of enriching the foreigners, and ruining our farmers, and starving our labourers, the best of whom are fast emigrating to America. Burke said it was a perilous thing to try experiments with the farmers, whose capital is more feeble in its nature, whose trade is more subject to risk and losses, whose capital only turns once in a year—in some branches it is three years before the money is repaid. The price of wool has receded, and manufacturers are awaiting the next clip. The severity of the weather up to the 13th inst. has been very injurious to clover—on the poor wet soils it has lost plant considerably. The old meadows and pastures are well set, and assume a very healthy vigorous appearance; but the farmer is afraid to expend his capital in the purchase of stock, as he has entirely lost all confidence in the present government.—May 22.

METEOROLOGICAL DIARY—1849.

BAROMETER.			THERMOMETER.			WIND AND STATE.		ATMOSPHERE.				WEATHER
Day.	s a. m.	10 p.m.	Min.	Max.	10 p.m.	Direction.	Force.	s a. m.	2 p.m.	10 p.m.		
Apr. 21	in. ets.	in. ets.	29	44	39	N. Westerly	airy	fine	sun	fine	dry	
22	29.82	29.90	38	44	42	S. Westerly	gentle	cloudy	cloudy	cloudy	dry	
23	29.60	29.60	39	46	44	S.W., N.	gentle	cloudy	cloudy	cloudy	small rain	
24	29.60	29.76	39	51	47	N., S. by W.	variabl	cloudy	cloudy	cloudy	dry	
25	29.76	29.72	42	58	51	Northerly, S.	gentle	cloudy	sun	cloudy	dry	
26	29.72	29.80	44	55	51	Westerly	gentle	cloudy	cloudy	fine	dry	
27	29.80	29.66	40	60	50	S. West	gentle	haze	sun	cloudy	rain	
28	29.66	29.95	44	56	54	S. Westerly	lively	fine	cloudy	fine	showers	
29	30.14	30.24	42	65	55	W.S.W.	gentle	fine	sun	cloudy	dry	
30	30.27	30.23	52	62	53	Easterly	gentle	fine	sun	fine	dry	
May 1	30.17	30.04	46	59	51	East	brisk	fine	cloudy	cloudy	dry	
2	30.00	29.88	46	63	49	N. Easterly	gentle	cloudy	cloudy	cloudy	drizzle	
3	29.83	29.80	50	71	58	E. by North	gentle	cloudy	sun	fine	dry day	
4	29.81	29.83	49	76	63	Easterly	lively	fine	sun	fine	sunny	
5	29.83	29.80	51	76	57	Easterly	brisk	fine	sun	fine	sunny	
6	29.80	29.81	44	66	52	N. East	brisk	cloudy	cloudy	cloudy	dry	
7	29.88	29.97	45	53	44	N. East	lively	cloudy	cloudy	fine	dry	
8	29.97	29.93	40	53	45	N. East	lively	fine	cloudy	cloudy	dry	
9	29.99	29.99	41	49	42	N. East	lively	fine	cloudy	cloudy	rain	
10	29.90	29.88	40	50	46	N. by East	lively	cloudy	cloudy	cloudy	a shower	
11	29.85	30.03	42	50	45	N.W., N.Ely.	gentle	cloudy	cloudy	fine	rain	
12	30.16	30.19	40	56	51	S.E., W.S.W.	gentle	cloudy	cloudy	cloudy	dry	
13	30.07	29.86	47	59	52	S. Westerly	gentle	fine	fine	fine	dry	
14	29.69	29.55	49	66	53	S. Westerly	lively	cloudy	sun	cloudy	rain	
15	29.56	29.56	47	65	56	S. Westerly	gentle	fine	sun	cloudy	fine	
16	29.46	29.40	53	63	56	S. West	gentle	cloudy	fine	cloudy	rain	
17	29.30	29.40	50	58	51	S. West	strong	cloudy	cloudy	cloudy	rain	
18	29.44	29.75	50	60	53	W. by N., W.	lively	cloudy	cloudy	cloudy	showers	
19	29.95	29.98	53	63	55	W. by N. by S.	gentle	cloudy	sun	cloudy	dry	
20	29.85	29.75	52	55	52	S. West	gentle	cloudy	cloudy	cloudy	prof. rain	
21	29.77	29.36	52	67	57	N. by E., S.	gentle	cloudy	cloudy	cloudy	showers	

ESTIMATED AVERAGES OF MAY.

Barometer.		Thermometer.		
High.	Low.	High.	Low.	Mean.
30.46	29.60	90	37	58.7

REAL AVERAGE TEMPERATURE OF THE PERIOD.

Highest.	Lowest.	Mean.
58.7	45.0	51.5

WEATHER AND PHENOMENA.

April 21.—Pretty fine and drying. 22.—Changeable; some sun. 23.—Rainy afternoon. 24.—Fine; changeable; three or four solar spots. 25.—Fine spring day. 26.—Gloomy and moist; rain overnight. 27.—Hazy, but fine day. 28.—Solar spots; thunder and several showers; sunny morning. 29.—Fine. 30.—A superb day, and the warmest. May 1.—Fine early; doubtful. 2.—Cloudy, with haze. 3.—A little rain overnight, then fine. 4, 5.—Summer spots observed these three days. 6.—Biting wind; a few gleams towards evening. 7.—Much the same. 8.—Chilly,

with gloom; sunset as a crimson globe. 9, 10.—Overcast and chilly. 11.—Masses of gloomy clouds, as if composed of dingy yellow smoke. 12, 13.—Pretty fine; little sun. 14.—Fine after rain. 15.—Fine spring day; rich evening; cloudy. 16.—Cloudy, with gleams. 17.—Double strata of clouds, the under rapid. 18.—Fine growing weather. 19.—Changeable. 20.—Rain night and day. 21.—Much finer, with a heavy shower.

LUNATIONS.—April: New moon, 22nd, near midnight; first quarter, 29th, 2 h. 17 m. afternoon. May: Full, 7th, 7 h. 7 m. morning; last quarter, 15th, 10 h. 30 m. morning.

REMARKS REFERRING TO AGRICULTURE.—Verdure rich to the last degree, with every prospect of plenty; in grass-fodder crop and corn sun is wanting, as the gloom is prevailing. Solar spots were discerned on all the bright days generally, with two or three exceptions.

J. TOWERS.

Croydon.

REVIEW OF THE CORN TRADE DURING THE MONTH OF MAY.

The weather, though very variable, has, on the whole, been of rather a favourable character during the month. The first eight or ten days we had hot sunshine, with little rain, and the wind mostly from the eastward. Subsequently there was a material fall in the temperature, but about the 12th the wind veered from north-east to south-west, causing increased warmth, and bringing a welcome supply of rain. Since then vegetation has progressed rapidly, and though the reports respecting the appearance of the grain crops are (as is not unusually the case at this period of the year) contradictory, the general tenor of the accounts from the agricultural districts is certainly not discouraging. On cold clay lands the young wheat has not improved much; in many localities it is wanting in colour, and is besides rather thin on the ground; but still there is sufficient plant to produce a good crop, should the summer prove moderately auspicious. On well-drained and well-cultivated lands there is no fault to be found with the present aspect of either wheat or spring-sown corn, and the late rains have caused an astonishing growth of grass and green food of all descriptions, holding out promise of abundance for both man and beast. Little dependence can, however, be placed on appearances at this early period; and the future range of prices must be so entirely regulated by the weather, that it would be vain to venture on anything like a positive opinion on the subject. It may, however, not be amiss to advert to matters which after the probable result of the next harvest, have the most important bearing on the markets, viz., stocks and supplies. Each day's experience furnishes fresh materials to prove that the deficiency of the grain crops of Great Britain in 1848 was not exaggerated. During the month of May, farmers usually bring supplies forward freely, as there is then comparatively little out-door work to be attended to. So far, however, from the deliveries from the growers having increased, they have fallen off from week to week. This fact is, we think, indicative of the smallness of the stocks remaining in the hands of the producers, for there is certainly nothing in the present position of affairs to encourage them to hold. We have consequently come to the conclusion that the quantity of British-grown corn in the country is decidedly less than is usually the case in the month of May; and this opinion is confirmed by the best-informed

authorities on matters connected with the grain trade.

We must now speak of the stocks of foreign; and what we are about to say will go far to prove that the deficiency of our own growth last year must have been very great. Of wheat and flour the average importation of the last three months has amounted to 500,000 qrs. *One million and a half qrs. of Foreign* have been received, and have paid duty, in three months, without causing any increase in the stocks in granary; indeed, within the last month the quantity in warehouse has visibly diminished, and it is consequently clear that further supplies, on a large scale, will be required from abroad. Are these likely to reach us, if prices remain as low as they now are? is therefore the question. On this point considerable difference of opinion exists; we have, however, very little doubt on the subject. Should the weather unfortunately become threatening, and the prospects for the crops become unfavourable, the foreign merchant would certainly take advantage of the position this country is placed in with regard to stocks, to make us pay higher rates for the supplies we might require; but should no cause for uneasiness arise, holders on the other side will be too eager to clear off their old stocks previous to our harvest being secured, to allow us to feel want in the interval, and we must therefore come back to the point with which we started, viz., that the range of quotations during the summer will be wholly dependent on the character of the season. Some parties pretend to doubt the ability of foreign countries continuing to furnish supplies on so extensive a scale as we have lately been receiving; to which we certainly do not assent. From America, comparatively little has hitherto reached us, and, considering the large yield of the corn crops over the whole of the United States, we may fairly reckon on extensive shipments of bread-stuffs from the other side of the Atlantic to this country. The difficulties which the war between the Germans and Danes has lately interposed to consignments from the northern continental ports, appear likely to be removed; and, so far from France, Holland, and Belgium showing symptoms of requiring supplies from the Baltic, these countries continue to ship wheat and flour to Great Britain, notwithstanding the depreciated value in our markets.

The present position of affairs affords an instruc-

tive lesson in regard to the probable ultimate effects of free trade on prices of agricultural produce in this country. With so decidedly short and so ill-harvested a crop in Great Britain as the last, with only a moderate produce in many of the principal corn-growing countries of Europe, with serious interruptions to the regular course of business by wars, revolutions, &c., over nearly the whole of the continent, we have nevertheless been inundated with foreign supplies to such an extent as to cause the prices here to be reduced to a point at which it would not pay to grow wheat, even with a good yield to the acre; and with such a miserable return as the last, the loss to our farmers must have been almost ruinous. What may prices, therefore, be expected to fall to, if free trade be continued after one or two good harvests? We will not affirm that these islands are capable of producing *all* the food required for the consumption of the population, though, with proper encouragement and protection, the produce might unquestionably be greatly increased. In the years 1834, 35, and 36 the home growth was fully sufficient for our wants, without importing from abroad; and taking the average of seasons, the assistance we may require will certainly be much less than we have needed this year. Meanwhile the growth of corn is likely to be greatly extended on the continent of Europe, and in America, and unless something is done to put our farmers on a fair footing to compete with the foreign grower, agricultural pursuits must become too unremunerative to be continued, and our lands will cease to be cultivated. All employment of capital is based on a prospective view of profit; and it would be arguing against probabilities to suppose that, situated as this country is, agriculture can ever flourish if an unrestricted importation of foreign grain is to continue to be permitted.

The price of wheat has not undergone any material change since our last. In some of the markets in the agricultural districts the tendency has been rather upwards, owing to the extreme insignificance of the supplies from the growers, and the belief that the stocks in farmers' hands are almost exhausted. At most of the large consuming towns the arrivals (principally foreign) have more than kept pace with the demand, and quotations have undergone no improvement. The receipts of home grown wheat into the port of London have been quite trifling, the shipments from Lincolnshire, &c., having been mostly directed to the north, where prices have been higher than with us. In those counties which in ordinary seasons furnish the bulk of our supply—Essex, Kent, Suffolk, &c.—the yield was much worse than further to the North, which accounts for the great falling off shown in the receipts into London. The want of home sup-

plies of importance has, however, been but little felt, in consequence of the extensive choice of foreign which our market has afforded, and business has been dull throughout the month. The few parcels exhibited at Mark Lane on Monday, the 7th inst., by land carriage from the home counties, were taken very cautiously by the millers. The very best qualities were not quoted lower, but before the general runs could be placed, a decline of 1s. per qr. on the rates of that day se'nnight had to be submitted to. No portion of this reduction was recovered on the subsequent Monday, indeed much difficulty was then experienced in effecting sales without conceding further. Matters remained in this state for another week, when a slight increase in the arrivals from Essex, together with a continuance of auspicious weather for the growing crops, caused a further decline of 1s. per qr., and at the period we are writing there are no indications of the downward movement being checked. Fine runs of white wheat are now not worth more than 50s. per qr. at Mark Lane, and good parcels of red may be bought at 44s. to 45s., whilst inferior rough samples barely command 40s. per qr.

Notwithstanding the blockade of the Baltic, the rivers Elbe, Weser, and Jahde, the arrivals of foreign wheat have been very liberal. Into London alone no less than 96,000 qrs. have been entered since the end of April, and at outports the supplies have been on a corresponding scale. The importers have shown more firmness than might, under all circumstances, have been expected; and a large portion of the arrivals into London has been landed with a view, probably, of profiting by the chapter of accidents, should the summer prove wet. In the early part of the month Mark Lane was rather numerously attended by buyers from different parts of the kingdom, but they appeared to expect to purchase at lower rates than holders were disposed to accept, and the transactions were consequently not very extensive. A good many purchases were nevertheless made on the 7th, and again on the 14th, partly for Irish account; and we are inclined to think that the stocks in granary have not increased much, notwithstanding the abundance of the supplies. The fall in prices since the close of last month has amounted to about 2s. per qr. This reduction has been reluctantly submitted to, and if holders had been disposed to give way somewhat further, the operations would, we are inclined to think, have been on a much more important scale. Polish Odessa wheat has realized 38s. to 40s., and French, Belgium, and Baltic from 42s. to 48s. per qr., according to quality. Superior foreign white wheat has, in consequence of its scarcity, commanded relatively higher terms.

The sale of home manufactured flour has been

much interfered with by large arrivals of foreign, principally from France. The town millers have, however, made no alteration in the nominal top price, which has remained 44s. per sack. When we state that the finest French has been freely offered at 35s. to 36s., and good second qualities at 32s. to 33s. per sack, it will be readily understood that the quotation named for the best London marks must be regarded as *perfectly nominal*. Hitherto the arrivals from America have been of comparatively little importance, and barrelled has maintained its value better than sack flour, good brands of Western Canal being yet held at 24s., and fine at 25s. per barrel.

Barley of home growth has come forward very sparingly, not only at Mark Lane, but in all parts of the kingdom. The arrivals of this grain from abroad have at the same time been less plentiful than have those of wheat. Most of the principal maltsters left off work early in the month; still small parcels have been taken for that purpose from time to time, and choice lots have, up to the present period, supported the value they bore at the close of April. Distilling and grinding sorts have met a fair share of attention, and though we have still a considerable stock of the latter in granary at this port, composed wholly of foreign, holders are generally firm. The best heavy Danish, weighing 53 to 54lbs. per bushel, may be quoted 23s. to 24s., and lighter descriptions from 20s. up to 22s. per qr.

Prices of malt have undergone no change requiring notice, and the transactions in the article have been on a strictly retail scale throughout the month.

The arrivals of oats coastwise have been small, from Scotland good supplies have come to hand. From Ireland the total quantity received has barely amounted to 1,000 qrs. We have consequently had to depend mainly on supplies from abroad, but the latter have been sufficiently extensive to prevent anything like scarcity being felt. The actual change in prices has been very slight since our last. At one period a slight advance was partially established, but this was subsequently lost, and quotations are now much the same as when we last addressed our readers. It is, however, tolerably certain that stocks have in the interval been reduced, and we are disposed to think that there exists more probability of a slight rally occurring in the value of oats than in prices of other articles. From Ireland it is plain that no supplies of moment can be looked for, purchases of the coarser kinds of food having for some time been made on Irish account in the English markets. Stocks in the hands of our own farmers are all but exhausted, and though some further shipments will probably be made from Scotland, we shall unques-

tionably continue to require extensive assistance from foreign countries.

Home-grown beans have slightly recovered from the extreme depression of April, owing to a falling off in the supplies; handsome hard pigeon beans have lately commanded 35s. to 37s. per qr., and other sorts corresponding rates. Of Egyptian we have still an abundance on the market; and these have therefore not participated in the advance, 21s. to 23s. per qr. continuing to be the range of quotations for parcels in granary. A great many cargoes have lately arrived off Falmouth, but most of these will probably be directed to go round to Bristol and that neighbourhood.

English peas have now become very scarce, and the quantity of foreign at this port has also been considerably reduced; the low rates at which the latter have for some time been selling having induced an extra consumption for cattle-feeding, &c. Prices have consequently crept up 1s. to 2s. per qr. for all descriptions of peas since our last, and the advance appears likely to be maintained.

In Indian corn on the spot nothing of the slightest interest has transpired, but floating cargoes off the coast or near at hand have been a good deal inquired for on Irish account; owing, however, to the generally high pretensions of sellers, the bargains closed have not been very important, 32s. to 33s. per qr. has been asked for good heavy qualities cost and freight, the buyer taking the risk as to the condition the cargo may arrive in, besides paying the insurance premium.

In concluding our remarks with a slight notice of the foreign grain markets we shall have less change to notice than usually occurs in the space of a month. In the north of Europe business has been almost wholly suspended since the 30th of April, when the blockade by the Danish fleet was first enforced. The reports from most of the principal corn-growing countries speak well of the growing crops, but it is the prevailing opinion that the stocks of bread-stuffs are small over the greater part of the continent. That such may be the case we are disposed to admit, still we feel satisfied that, with what America is likely to furnish, the importations into Great Britain will continue on a sufficiently liberal scale to keep down prices below the point at which it will pay to grow wheat in this country.

At Danzig the arrivals down the Vistula (which had previously been very small) had increased about the middle of the month, and, as no export demand had been experienced, the receivers of these supplies had been compelled to warehouse. The quality of the Polish wheat is not very highly spoken of, and really fine high-mixed parcels being scarce, had been held at high rates. Some good

high-mixed of 61 lbs. to 62lbs. weight had been sold at equal to 41s. 6d. per qr., and fine mixed weighing 61 lbs. per bushel at 40s. 6d. per qr. free on board. The blockade of Danzig does not appear to have been very strictly enforced, several British and Dutch vessels having arrived there, some with cargoes and some in ballast, without having met with any interruption.

At Stettin, Rostock, &c., Danish men-of-war had from time to time made their appearance, but there had been no efficient blockade. The operations in wheat at the ports last named appear to have been of very little consequence; but the supplies brought forward by the growers having been comparatively small, and stocks being by no means heavy, prices had been pretty firmly maintained, and it would have been difficult to have contracted for the shipment of good heavy qualities below 35s. to 36s. per qr. free on board.

At Lubeck and Wismar, ports not blockaded, a lively demand had, we are informed, been experienced for wheat, at prices equal to 38s. to 40s. per qr. free on board.

From Hamburg we learn that little or nothing had for nearly a fortnight been done in wheat, and that prices had remained perfectly stationary; good Upland red was then worth 39s. 6d. per. qr. free on board.

Though there has been very little margin for profit on shipments of wheat from Holland or Belgium to this country, still we have received supplies from thence throughout the month; and by the latest accounts from Rotterdam, Amsterdam, and Antwerp it would appear that purchases were still being made there on English account.

From France we have also had, and seem likely to continue to receive, supplies of wheat and flour, though there is at present very little encouragement to consign to our markets. The accounts from the more southern parts of France, Italy, Spain, &c., describe the grain crops as very forward and promising; and the probability of a good and early harvest had had a depressing influence on the corn trade in those countries.

The tenor of the most recent advices from the United States is of a character to lead us to expect rather important supplies of bread-stuffs from the other side of the Atlantic; at the same time we may remark that the chances of any profit accruing to the parties interested are, as far as wheat and flour are concerned, very slight. Indian corn, however, is likely to pay tolerably well, owing to the necessities of Ireland.

CURRENCY PER IMPERIAL MEASURE.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, Essex and Kent, white	42 to 50	44 to 52
Ditto, fine selected runs	— —	46 54
Ditto, red	40 44	38 44
Ditto, extra	41 48	44 47
Ditto, Talavera	— —	— —
Norfolk, Lincolnshire and Yorkshire	— —	40 45
Ditto, white	— —	43 47
BARLEY, English, malting and distilling	— —	26 28
Ditto, Chevalier	— —	29 31
Ditto, grinding	— —	23 25
MALT	— —	58 59
Essex, Norfolk and Suffolk	— —	58 62
Kingston, Ware, and town made	— —	16 19
OATS, Essex and Suffolk	— —	16 20
Lincolnshire and Yorkshire (Polands)	— —	15 18
Ditto, feed	— —	14 16
Devon & West Country, feed or sack	— —	18 21
Northumberland and Scotch, feed	— —	18 22
Dundalk, Newry, and Belfast, potato	— —	17 21
Limerick, Sligo, and Westport, potato	— —	16 19
Ditto, feed	— —	14 19
Cork, Waterford, Dublin, Youghal, and Clonmel, black	— —	16 19
Ditto, white	— —	12 15
Galway	— —	22 25
RYE	— —	39 44
FLOUR, best marks (per sack of 280 lbs.)	— —	32 35
Norfolk and Suffolk, ex-ship	— —	29 31
BEANS, Mazagan	— —	28 31
Tick	— —	31 36
Harrow	— —	34 37
Pigeon, Heligland	— —	30 40
Windsor	— —	28 30
Long pod	— —	26 27
PEAS, non-boilers	— —	28 30
White, Essex, and Kent, boilers	— —	32 34
Ditto, fine Suffolk	— —	34 35
Maple	— —	30 32
Hog and grey	— —	— —

FOREIGN GRAIN.

	Shillings per Quarter.	
	OLD.	NEW.
WHEAT, American	43 to 47	— —
Canada	39 45	— —
Dantzic and Konigsberg	45 49	— —
Dantzic, fine white, extra quality	49 53	— —
Stettin and Hamburg	42 45	— —
Danish	39 43	— —
Rostock, Pomeranian and Rhine	43 47	— —
French and Belgium	43 47	— —
Mediterranean, Odessa, and St. Petersburg	37 41	— —
Black Sea (nominal) hard to soft	37 41	— —
Spanish	45 51	— —
Buck or Brank	24 32	— —
BARLEY, malting	26 27	— —
Grinding and distilling	20 25	— —
Hamburg, Dantzic, Konigsburgh, and Riga	21 25	— —
Danish, Mecklenberg, and Pomeranian	20 25	— —
OATS, Dutch, brew, Poland, Friesland, and Groningen	17 21	— —
Danish and Swedish	15 19	— —
Russian	16 19	— —
BEANS	— —	— —
Small	30 33	— —
Egyptian	21 23	— —
PEAS, white boilers	28 32	— —
Yellow ditto	29 32	— —
Non-boilers	25 28	— —
MAIZE, white	29 33	— —
Ditto, yellow	30 33	— —
FLOUR, American, sweet	23 24	— —
Ditto, sour	22 24	— —
Canadian, sweet	21 23	— —
Ditto, sour	21 22	— —
Dantzic and Silesia, extra superfine	23 24	— —

IMPERIAL AVERAGES.

FOR THE LAST SIX WEEKS.

WEEK ENDING:	Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Apr. 14, 1849..	44	3	28	6	17	0	23	1	28	5	30	11
Apr. 21, 1849..	44	5	28	8	16	8	22	4	28	11	28	9
Apr. 28, 1849..	46	0	28	10	17	2	27	5	29	3	29	9
May 5, 1849..	46	9	28	11	17	6	25	4	29	8	30	1
May 12, 1849..	45	3	29	0	17	5	24	2	29	5	30	10
May 19, 1849..	44	9	28	0	17	8	25	9	30	7	29	11
Aggregate average of last six weeks	45	3	28	8	17	3	24	8	29	4	30	1
DUTIES.....	1	0	1	0	1	0	1	0	1	0	1	0

ACCOUNT SHEWING THE QUANTITIES OF GRAIN AND FLOUR IMPORTED INTO THE UNITED KINGDOM DURING THE MONTH ENDED 5TH MAY, 1849, THE QUANTITIES ADMITTED FOR HOME CONSUMPTION DURING THE SAME MONTH, AND THE QUANTITIES REMAINING IN WAREHOUSE AT THE CLOSE THEREOF.

Species of Grain.	Quantity imported.		Quantity entered for consumption.		Quantity remaining in warehouse.	
	qrs.	bush.	qrs.	bush.	qrs.	bush.
Wheat, from British Possessions	405	3	614	0	1178	4
Barley, do.	—	—	—	—	—	—
Oats, do.	—	—	—	—	—	—
Peas, do.	—	—	—	—	—	—
Beans, do.	—	—	—	—	—	—
Maize or Indian Corn, do.	—	—	—	—	—	—
Wheat, foreign	361410	3	382751	4	169553	2
Barley, do.	101013	5	115809	3	21261	4
Oats, do.	90102	4	92574	6	14317	3
Rye.	16821	4	18496	7	4327	1
Peas, do.	8864	6	14179	4	14373	0
Beans, do.	41238	0	35582	0	17273	4
Maize or Indian Corn, do.	177149	1	179031	4	8259	6
Buckwheat	30	7	30	7	—	—
Beer or Bigg	43	0	43	0	—	—
Flour from British Possessions.....	732	0	14884	0	7133	3
Flour, foreign	149889	3	228270	2	235760	0

STOCK OF GRAIN IN BOND IN LONDON MAY 5.

Wheat.	Barley.	Oats.	Beans.	Peas.	Maize.	Flour.
qrs.	qrs.	qrs.	qrs.	qrs.	qrs.	cwt.
105,899	13,886	6,779	9,0215	480	—	82,799

IN THE UNITED KINGDOM.

Wheat.	Barley.	Oats.	Beans.	Peas.	Rye.	Flour.
170,931	21,261	14,317	17,273	14,973	—	242,893

PRICES OF SEEDS.

There was some slight enquiry for Cloverseed at low prices, without, however, leading to business.

The high rates asked for Canaryseed checked sales. In other articles no change occurred.

BRITISH SEEDS.

Cloverseed, red 35s. to 40s.; fine, 45s. to 63s.; white, 34s. to 48s. Cow Grass (nominal)..... —s. to —s. Linseed (per qr.).. sowing 54s. to 60s.; crushing 42s. to 48s. Linseed Cakes (per 1,000 of 3lbs. each) £8 10s. to £10 0s. Trefoil (per cwt.) .. 14s. to 21s. Rapeseed, new (per last) .. £32 to £36 Ditto Cake (per ton) .. £4 15s. to £5 Mustard (per bushel) white .. 5s. to 10s.; brown, (nominal.) Coriander (per cwt.)..... 16s. to 25s. Canary (per qr.)..... 128s. to 132s.; fine, 148s. to 168s. Turnip, white (per bush) —s. to —s.; do. Swedish, —s. to —s. Tares, Winter, per bush..... Os. 0d. to Os. 0d. Caraway (per cwt.)..... 28s. to 29s.; new, 30s. to 31s. Rye Grass (per qr.) .. 17s. to 46s.

FOREIGN SEEDS, &c.

Clover, red (duty 5s. per cwt.) per cwt..... 30s. to 40s. Ditto, white (duty 5s. per cwt.) per cwt..... 24s. to 42s. Linseed (per qr.).. Baltic 38s. to 46s.; Odessa, 40s. to 46s. Linseed Cake (per ton)..... £6 0s. to £8 0s. Rapeseed..... £4 15s. to £5 Rape Cake (per ton)..... £4 15s. 5d. Coriander (per cwt) .. 16s. to 20s. Hempseed, small, (per qr.) 32s. to 35s., Do. Dutch, 35s. to 36s. Tares, (per qr.)..... small 24s. to 26s., large 28s. to 33s.

HOP MARKET.

BOROUGH, MONDAY, May 28.

Accounts from the plantations report the fly to have made its appearance to a trifling extent in some districts. Our market remains firm, without much activity, at the currency of this day week. HORTON AND HART.

POTATO MARKET.

SOUTHWARK WATERSIDE, May 28.

Our market continues to be well supplied with foreign Potatoes, which is quite equal to the demand; and with most samples less prices have been submitted to. The following is this day's quotation:—

	PER TON.
York Regents	180s. to 220s.
Scotch Whites.....	80s. to 90s.
Foreign	60s. to 90s.

WOOL MARKETS.

BRITISH WOOL.

LEEDS, May 25.—This market remains without alteration; but much business is done, and the prices offered are low.

LIVERPOOL, May 26.

SCOTCH.—There is no alteration to notice in our demand for laid wool; the trade only take for their immediate wants, and with light stocks prices are well supported. In white Highland crossed and Cheviot the same remarks will apply.

	s.	d.
Laid Highland Wool, per 24lbs....	6	9
White Highland do.....	9	6
Laid Crossed do..... unwashed....	8	10
Do. do..... washed.....	9	12
Do. Cheviot do..... unwashed....	9	12
Do. do..... washed.....	13	6
White Cheviot do..... do.....	20	2

FOREIGN.—The public sales are still progressing satisfactorily in London; they came to a close this evening. There will be some public sales here on Tuesday, the 29th, at which will be sold about 300 Australian, 800 Buenos Ayres, 300 East Indian, 1,000 ballots Peruvian, 150 Portugal, 100 Oporto, 500 Egyptian, Turkey, Russian, and other low wools.

FOREIGN WOOL.

The public sales of wool have been in daily progress since our last, and have now been brought to a close. The sales have not gone quite so high as the last series, though as well as could be expected. The order and result of the several auctions held have been as follows:—

On Monday last Messrs. Marsh and Edenborough put up 1,244 bales. There were 460 bales South Australian, partly belonging to the South Australian Company; and this sold at from 11d. to 1s. 4d. for clean sheep's, and at 11½d. to 1s. 4½d. for lambs'. Australian, 311 bales, realised 11d. to 1s. 5½d. for low to super, and lambs' 1s. 3d. to 1s. 3½d. Cape, 573 bales, went at 6d. to 1s. 1½d. for clean sheep's, and at 10½d. to 1s. 1½d. for lambs'.

Messrs. Daniel Hazard and Son on the same day put up 857 bales. Cape, 478 bales, sold at 5d. for greasy, up to 1s. 2½d. for lambs'. South Australian went at 1s. 1d. to 1s. 2d., Sydney at 10½d. to 1s. 5d., Port Phillip at 1s. 3d. to 1s. 5d., and Paget Sound at 7d. to 10½d. per lb.

On Tuesday, Mr. Henry P. Hughes offered 1314 bales. Australian sold at 1s. 1½d. to 1s. 6½d. for clean sheep's, and up to 1s. 8d. for super clothing, and hand-washed at 1s. 1d. to 1s. 3½d. per lb.; Port Phillip, scoured 1s. 4½d. to 1s. 5d.; Van Dieman's Land, sheep's 1s. 0½d. to 1s. 3d., and lambs' 1s. 2½d. to 1s. 5½d.; South Australian, sheep's 7d. to 9½d. for greasy, 10½d. to 1s. 3d. for low to electoral, and 1s. to 1s. 3d. for lambs'; Cape, 9d. to 1s. 1d., and for superfine 1s. 3d. per lb.

On Wednesday, Messrs. J. T. Simes and Co. offered 1563 bales. Australian, 640 bales, realized 1s. 0½d. to 1s. 9d., and 1s. 11d.; Port Phillip, 9½d. to 1s. 4d. for sheep's, and 1s. 1½d. to 1s. 5d. for lambs'; and Cape, 456 bales, 6½d. to 1s. 1d. for handwashed, and 11d. for lambs'.

On Thursday, Messrs. Southey and Son put up 1,210 bales. Australian, 764 bales, realized 10d. for black and locks up to 1s. 5d. for clean sheep's, and 1s. 10½d. to 1s. 11d. for two or three lots of "prime:" lambs' went at 1s. 2½d. to 1s. 3½d. per lb. Port Phillip brought 1s. 1d. to 1s. 4d. for clean sheep's, and 1s. 3½d. for lambs'. South Australian, 254 bales, sold at 11d. to 1s. 0½d. for clean sheep's, and at 1s. 1d. to 1s. 1½d. for lambs'.

Mr. William Hall followed with 301 bales of Spanish, which chiefly found buyers at 8½d. to 1s. 3½d. per lb.

On Friday, Messrs. J. T. Simes and Co. put up 1,312 bales. South Australian, 735 bales, sold at from 5d. for locks to 1s. 4d. for lambs'. Van Dieman's Land ranged from 6d. to 1s. 2d., and Cape (503 bales) from 7½d. to 1s. 2½d. per lb.

On Saturday the closing sales were by Messrs. Jacomb, and Messrs. Marsh and Edenborough, comprising about 1,300 bales, which realized about previous rates.

The result of the series is now held to be that prices have ruled about the same as at the February sales, though considered by some to have been slightly in favour of buyers.

The following is a statement of the prices realized during the whole series:—Sydney, superior flocks, 1s. 7d. to 1s. 11d.; average to good, 1s. 3d. to 1s. 5d.; inferior and bad condition, 1s. to 1s. 2½d.; scoured and handwashed, good, 1s. 4d. to 1s. 10½d.; inferior, 1s. to 1s. 2d.; lambs' average, 1s. 3d. to 1s. 5½d.; inferior, 1s. to 1s. 2d.; scoured, 1s. 3d. to 1s. 7½d.; Skin and brech, 1s. to 1s. 2d.; pieces and locks, 8d. to 1s. 3½d.; grease 6d. to 9d.; Van Diemen's Land, good flocks, 1s. 3d. to 1s. 7d.; average, 1s. 2d. to 1s. 5d.; inferior and bad condition, 1s. to 1s. 1d.; handwashed and scoured, 1s. 2d. to 1s. 8d.; lambs' superior to good, 1s. 6½d. to 2s. 1½d.; inferior, 1s. to 1s. 4d.; skin, 1s. to 1s. 2½d.; pieces and locks, 9d. to 1s. 1½d.; grease, 6d. to 10d.; Port Phillip superior, 1s. 5d. to 1s. 10d.; average, 1s. 2d. to 1s. 4d.; inferior and bad condition, 11d. to 1s. 1d.; handwashed and scoured, 1s. 3d. to 1s. 8d.; lambs', good, 1s. 5d. to 1s. 9d.; inferior, 1s. 1½d. to 1s. 4d.; skin, 11d. to 1s. 2d.; pieces and locks 9½d. to 1s. 2d.; grease, 8d. to

10d.; South Australian, average to good, 1s. to 1s. 4 d.; inferior and bad conditioned 10d. to 11½d.; lambs', 1s. 1d. to 1s. 4½d.; skin, 9d. to 1s. 1½d.; pieces and locks, 7d. to 1s.; grease, 6d. to 9d.; Cape, fair, 1s. to 1s. 3d.; inferior and bad conditioned 8½d. to 11d.; handwashed, 11d. to 1s. 2d.; grease, 5½d. to 9d.; East India, good white, 7½d. to 8½d.; fair, 6½d. to 7d.; yellow, 5d. to 6d.; grey and low, 2½d. to 4d.

BRESLAU, May 16.—We have had but a very limited business since the beginning of the present month. The revolutionary movements in Southern Germany, and some riots in our own country, caused manufacturers and speculators to operate with great reserve, and to purchase only trifles for immediate wants. Prices till the present moment have undergone no considerable alteration, but will no doubt recede, should the present disturbances in Germany continue till the fair. Some flocks of fresh wool have been already brought in, which look very beautiful. The commencement of our fair, is fixed to the 7th of June, but will take place some days earlier.—GÜNSBURG.

HIDE AND SKIN MARKETS.

		s.	d.	s.	d.
Market Hides, 56 to 64lbs.....	0	1½	to	0	1½
Do. 64 72lbs.....	0	1½	to	0	1½
Do. 72 80lbs.....	0	1½	to	0	2
Do. 80 88lbs.....	0	2½	to	0	2½
Do. 88 96lbs.....	0	2½	to	0	3
Do. 96 104lbs.....	0	3	to	0	3½
Do. 104 112lbs.....	0	0	to	0	4
Calf Skins	4	6		5	0
Lamb Skins	1	3		2	5
Horse Hides	7	6		0	0
Polled Sheep	0	0		0	0
Kents and Half-breds	0	0		0	0
Downs	0	0		0	0
Shearings ..	0	6		0	8

BARK.

Per load of 45 ewt.

English, Tree.....	£14	0	0	to	£16	0	0
Coppice	15	0	0	to	17	0	0

LIVERPOOL (DUTY FREE)—Quercitron, 8l. 6s. to 9l. 6s.; Dutch Oak, per ton, 4l. to 5l.; German, 3l. 10s. to 6l.

TIMBER.

	£	s.	d.	£	s.	d.
Baltic Timber, per load of 50 cubic feet..	3	0	0	to	4	0
Yw. Deals, per standard hundred ..	12	0	0	to	16	0
Deck Deals, per 40 feet 3 in.	0	18	0	to	1	4
Pine Staves, per mille	115	0	0	to	130	0
Lathwood, per 100 ft. of 4 feet.....	5	10	0	to	6	10
Petersburgh, Riga, and Archangel ..	18	0	0	to	15	0
Yw. Deals, per stand. hundred... }	11	0	0	to	12	0
White	11	0	0	to	12	0
Yw. Battens	13	0	0	to	15	0
Riga Logs, for 18 feet cube	3	15	0	to	4	5
Stettin Staves, per mille of pipe	75	0	0	to	130	0
Swedish Timber, per load	2	10	0	to	2	15
Go. an b. Yw. Deals, per 100 12ft. 3in. 9in..	18	10	0	to	23	0
White ditto	16	0	0	to	20	0
Yw. Battens, per hd. 12 ft. 3 in. 7 in.	11	0	0	to	14	0
Christiania Yw. Deals, per hd. 12ft. 3in. 9in.	25	0	0	to	26	0
White ditto	22	0	0	to	23	0
Quebec and St. John's Spruce Deals.. }	14	0	0	to	17	0
per 100, 12 ft. 3 in. 9in.	14	0	0	to	17	0
1st qual. Yw. Pine Deals, per st. hd.	13	0	0	to	16	0
Second do. do.	10	0	0	to	11	0
Third do. do.	7	10	0	to	8	0
Red Pine Deals, per hd. 12ft. 3in. 9in.	17	0	0	to	21	0
Red Pine Timber, per load	2	17	6	to	3	12
Yw. ditto	2	15	0	to	3	15
Birch ditto	3	0	0	to	3	5
Rim ditto	3	10	0	to	3	15
Oak ditto	5	0	0	to	5	10
Standard Staves per mille standard	65	0	0	to	75	0
Puncheon Staves, per mille ..	17	0	0	to	19	0

END OF VOLUME XXX.







