

MR PLUCKNETT'S HORSE & HAND DRILL MACHINES.

Agricultural Mag. N^o 6 new series.

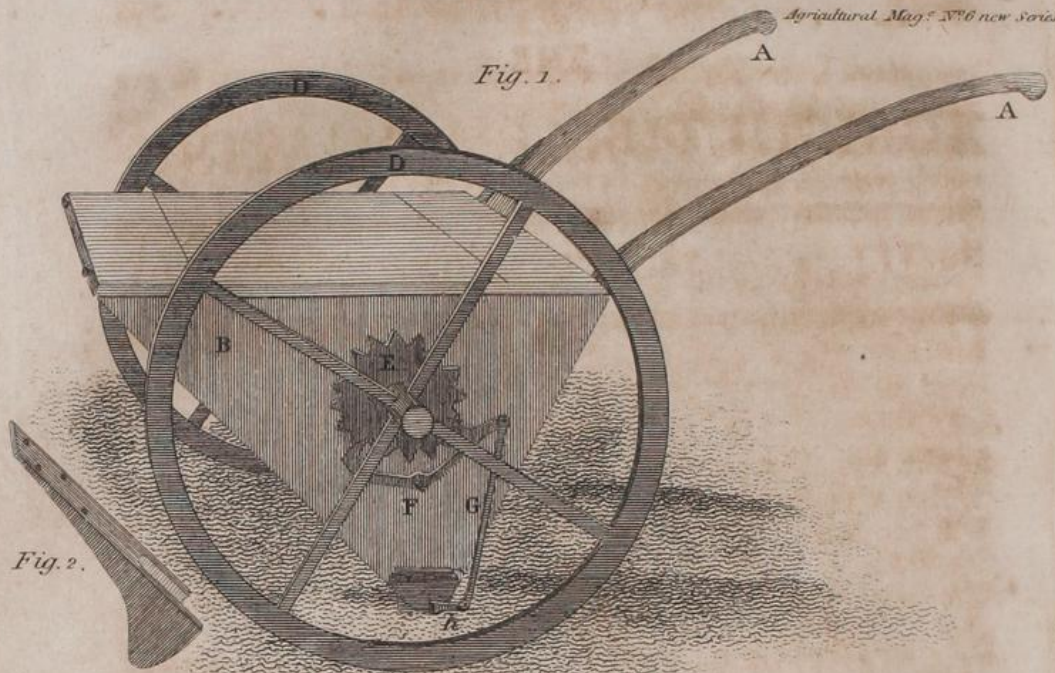
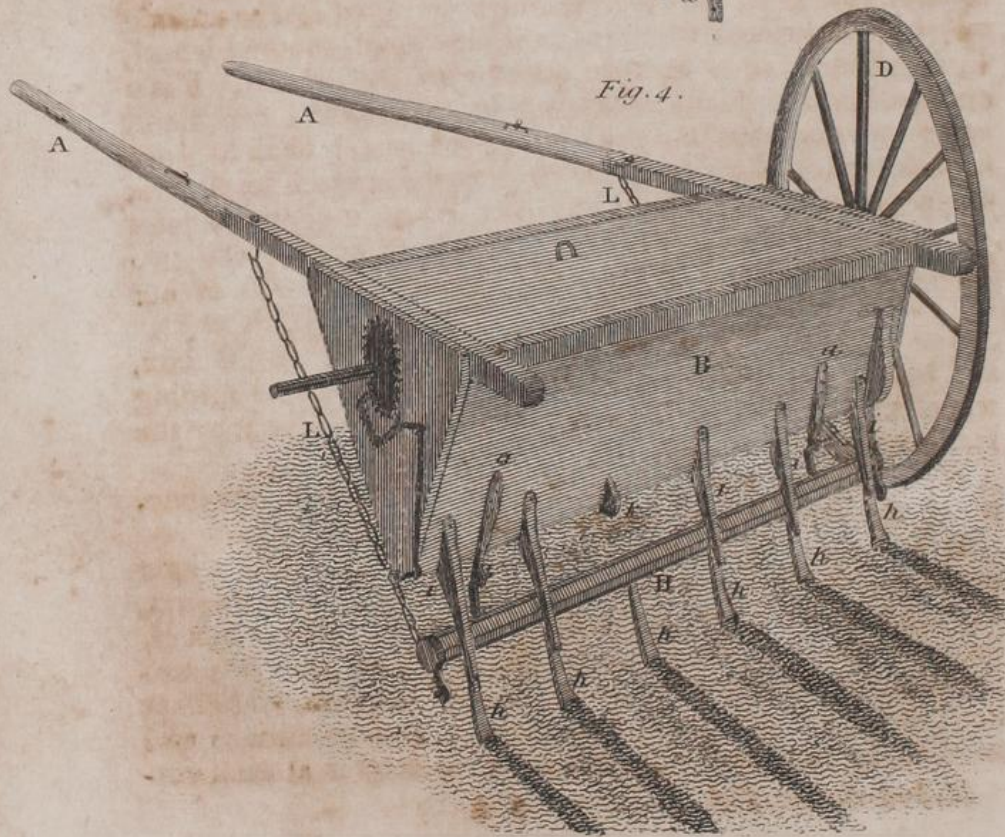


Fig. 3.



Fig. 4.



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THE
AGRICULTURAL MAGAZINE.

No. VI.]

SECOND SERIES.

[VOL. I.

FOR DECEMBER, 1806.

PLUCKNETT'S HAND AND HORSE DRILL MACHINES, AND
THE METHOD OF FIXING HIS UNDER-FURROW DRILL TO
A PLOUGH.

[*With a Plate annexed.*]

In the last Number of our Magazine, we gave a description of a "Patent hand single-row Dibbling Machine," invented by Mr. Plucknett, and we have now the pleasure of introducing to the reader, two Drilling Machines, constructed by the same ingenious mechanic.

A, Fig. 1, are two handles, by which a man wheels it along; these are fastened to a box **B**, containing the seed to be sown. **DD**, the wheels; these are fixed fast to an axle which goes through the box, and has a small-toothed wheel, **E**, fixed to it, so as to turn round with the wheels. **F** is a crooked iron, similar to the anchor of a clock escapement, whose two ends take into the teeth of the wheel, so as to move it backwards and forwards on its centre; it has a small rod, **G**, jointed to the end of it, by which means it communicates its motion to the short lever **k**, on whose spindle the two feeding rolls (similar to those described at page 290 of our last) are fixed.

The coulter, Fig. 2, are nailed to the front of the box, and have a hollow behind, in which the edge of the feeding wheel works, so as to throw the seed into the drill cut by the fore edge of the coulter.

Mr. Plucknett also makes an under-furrow drill machine, nearly similar to the above, to be affixed to a plough.

It is smaller, has no handles, but one wheel, and a single feeding roll, it is connected with the plough, by an iron, Fig 3, the end *a* of which is nailed to the side of the box **B**, the other end is screwed to the beam. This iron has two joints in it, by which it can swivel in any direction, and adapt itself to the inequalities of the ground. The machine is also steadied by two small chains, hooked to staples at each cor-

ner of the box, the other ends of which are hooked to staples, one at the fore end of the beam, and the other between the coulter and the share of the plough. This machine has no coulter, as it is not intended to make drills, but simply drops the seed into the last furrow made by the plough, which, as it advances, turns the soil over it.

Fig. 4, is a drill machine, by the same mechanic, which makes six drills, and is drawn by a horse. A A, are the shafts which support a box B, containing the seed; D, one of the wheels, (the other is represented as removed, to shew the toothed wheel and lever, similar to the hand machine.) To the hinder part of the box, two iron hinges, *a a*, are screwed, the other parts of which are made fast to a bar H, to which the coulters *h h h h h h* are fixed; the coulters are made hollow at the back, to let the seed run down into the drill cut by them; the seed is conveyed to the coulter, through the tubes *e e e e e e*, which are hung upon hooks in the seed-box B, and enclose the lower half of the feeding rollers, which come through the bottom, (as shewn at *k*, where the tube is removed) so as to catch the seed which they throw out when they are moved by the toothed wheel, as described in the hand machine.

When the machine is in use, the two chains, L L, are hooked to the shafts, and the other ends to the irons put through the bar H, so as to keep the coulters in the ground; as the horse goes along the wheels turn round, and move the feeding rollers, which distribute the seed through the tin tubes into the drills cut by the coulters.

When weeds, &c. have accumulated before the coulter, the chains L L are unhooked so as to let it loose, and when the machine is going out to the field, the coulters are turned up, and the chains L L, put round the hinder end of the shafts to keep them up.

The following are Mr. Plucknett's terms.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Reaping Machine	42	0	0
Horse Drill Machine, complete	26	10	0
Hand ditto	6	6	0
Dibble ditto, described with a plate in Number 5	6	6	0
Under-furrow Drill to fix to a Plough	5	5	0

The manufactory, is in Commerce Row, Blackfriar's Road, London.

ON THE COMPARATIVE QUANTITY OF SEED WHEAT FOR
DIFFERENT SOILS, AND THE MOST ADVANTAGEOUS DIS-
TANCES OF DRILLING IT.

To the Editor of the Agricultural Magazine.

SIR,

I HAD already taken up my pen, to give our friend Farmer Sandy, the communication which he requested, of my sentiments upon *the comparative quantity of seed-wheat*, necessary on light and strong, rich and poor soils, when your last Number arrived, in which I found a letter from a gentleman, who signs himself a Mercantile Farmer, commenting upon one of mine which was upon a subject very nearly connected with the other, viz. *the most advantageous distances at which wheat ought to be drilled*.

To both these gentlemen, therefore, I beg leave to address myself, lamenting only, that I am unable to do full justice to so important a question, or to write more satisfactorily; having, I confess, like too many practical cultivators, either from indolence or want of opportunity, neglected to make those close and accurate experiments, by actual weights and measures, necessary to determine these interesting points.

I think there can be no doubt, that on such close-textured fertile spots, as are best suited to the culture of wheat, a plant of this grain will require a greater space to itself, than the same plant would demand on weaker land. The reason I assign, is this: The number and size of fibres, is always found to be in proportion to the number and size of the stems which it throws out above ground. If there be not room for these fibres, (which a good soil encourages each plant to throw out in the months of April and May in great numbers) to extend themselves one way or other to their utmost length in search of vegetable food, the tillering shoots engrafted on the mother plant, not only suffer from want themselves, but rob the parent, and both produce imperfect fruit. Hence, therefore, that soil, which from its natural strength and fertility, is disposed to send forth the most numerous and vigorous off-sets, requires to be stocked with the fewest plants—and vice versa—and for the very same reasons, whether on light or strong soils, that field which is in the richest state, will always require the smallest number of plants to an acre.

It is from these axioms, which I believe will hardly be disputed, that knowing the present state of my field pretty nearly from its prior treatment, I venture to pronounce at any time, what will be the proper distance at which I ought

to drill it. And if I had no other difficulties to encounter, than those of judging on these two points, the nature and condition of my soil, I should, probably, seldom err or fail of a crop. But, Sir, of late years, we have had to cope with an adversary whose attacks no skill seems able to parry, and which appears determined to render all attention to fixed rules as to propriety of distance, totally nugatory. I mean, what is here usually termed the *mildew*.

The experience of the three or four last years has fully convinced me, that, be the condition of our mixed soils (or more properly, perhaps, sandy loams) what it may, the *thinnest plants are universally the most subject to this disorder*. And here was my error: confiding in the rich state of my land, I was sparing of seed—for quite contrary to the supposition of the Mercantile Farmer, the fact was, that instead of being *thicker* planted than my neighbours, my wheat was *very thin on the ground*; and to that circumstance, I do, without hesitation, attribute its failure. I drilled barely *six pecks* per acre, and that at *nine-inch* intervals, while the inclosure I mentioned as having been untouched by mildew, had *eight pecks* per acre, planted at *seven-inch* distances. The consequence was, that my wheat, forced by manure, branched out in the spring at an astonishing rate, as if resolved to fill up every vacant spot of surface, assuming a green colour of the deepest hue, and continued tillering, particularly after hoeing, till very late in June. Now whether this violent effort, which the weak staple of the soil might not be able to maintain till harvest, or that disposition of the air at a particular time, to which we attribute a mildew or blight, produced the fatal consequence to my crop, I cannot tell. Perhaps both operated. It is probable that I received injury when my neighbours escaped: for if the blight happens when the wheat is in flower, mine certainly stood a chance of mildew when others were out of danger, as its long tillering in the spring checked its progress, and kept it green when some fields near it were almost ripe.

With respect to the objections, which the Mercantile Farmer has advanced against the narrow intervals, which I have this year adopted in my wheat-field, I can only say, that I have hitherto met with no difficulty whatever in hoeing them. I am a strenuous advocate for the hoe—it is part of my creed, Sir, that no man can farm without an hand or horse hoe. I am not quite sure, whether I would not submit to the inconvenience which seems to persecute me with wide intervals, if the use of narrower ones should ever compel me to forego that most excellent of tools, the hoe. Such, however, is not likely to be the case. All my peas were last year drilled

at *six-inch* intervals, and I will venture to say were as effectually hoed as any drills could be, unless perhaps where, as on the stony clays of Kent and Essex, grain is planted at such extraordinary great distances as will admit the plough-share, or the still wider cultivators which I have seen used among beans in those counties.

I intended, Mr. Editor, to have closed my letter here; but I feel strongly inclined to propose to your scientific and practical correspondents, a doubt which I have entertained, (and alas, Sir, how does our occupation abound in doubts and difficulties! Will they never end?) whether, for reaping the greatest produce and guarding against mildews, as much does not depend upon the *depth*, as on the *distance* of our drills. On tough clover swards, not ploughed perhaps quite so deep as is requisite,* the drill coulter, certainly will not cut so deep as on a tender flag or on tilled land. Besides it is well known that mould shrinks after ploughing, in some cases very considerably. May not, therefore, the seed lie too near the surface, and its tender roots be injured by exposure to frosts and cold winds? I have often seen my land after a sharp frost full of little fissures, and many plants laid quite bare, just as if the earth had fled from them: some appeared as if half pulled up. In a short time these have become weak and yellow, and I suspect have either totally perished, or at best have produced a few lean kernels, which injure the general produce very much. These instances I am confident, are not so frequently found in the *ploughed in*, or *dibbled* crops, as in the *drilled*.

How are we to account for these facts?

If the origin of this evil rest with the drill, I am of P. J.'s opinion, that hammered iron coulters, made very sharp and narrow, are far preferable to those made of cast-iron; and under this persuasion, I have for the first time used such this season.

Having played the truant, Mr. Editor, much of late myself, I felt much gratified at seeing your last Number so ably filled, both by your old and new correspondents. Wishing you much success with your present Series,

I am, Sir,

Your hearty friend, and humble servant,

AGRICOLA NORFOLCIENSIS.

Fakenham, Dec. 8, 1806.

* On thin-skinned lands like the greater part of this county, deep ploughing is impracticable. The sand or gravel is generally too near the surface, to admit of more than a five-inch furrow upon an average. This is, however, very far from being always the case.

A NEW ROLLER FOR BREAKING CLOUDS, PULVERIZING OLD TURF FALLOWS, PREPARING GROUND PREVIOUS TO SOWING BARLEY, &c.

To the Editor of the Agricultural Magazine.

SIR,

You may depend upon the correctness of the following statement, if you think proper to insert it in your publication.

I am, Sir, your most obedient servant,

FRA. BLITHE HARRIES.

THIS roller, consists of twenty-one cast-iron wheels, twenty-one inches and a half diameter, the edges three inches asunder; or another pattern, of fourteen wheels, twenty-three inches diameter, the edges four inches and a half asunder, fastened upon an iron axle-tree, with a large wheel at each end to carry it to the field.

It is a great improvement upon the spike roller, on account of the danger of horses being hurt by the spikes in turning; and it proves to be admirably adapted to strong lands, and for the purposes above mentioned. The invention is Mr. Gittin's, of the Isle, Shropshire, an ingenious farmer, who had one made at Mr. Onions's foundry, Broseley; and I now make them at my iron works, and use them upon strong land with very great success.

FRA. BLITHE HARRIES.

*Benthall House, near
Shiffnall, Dec. 9, 1806.*

We should be much obliged to Mr. Harries, for a drawing of this Roller.

ON THE EFFECTS OF PULVERIZATION.

To the Editor of the Agricultural Magazine.

SIR,

IT has long been the case with practical farmers, in the cultivation of arable lands, to place much confidence in good tillage, or what has lately been understood, by the term pulverization. And in this they are unquestionably right, but the advantages that are derived in this way, have not probably been yet fully explained. It is well known that by this means, besides the ground being kept clean from weeds, the roots of plants are enabled to penetrate the soil more readily, and in a much more extensive manner, and that the moisture, whether from dews or rains, is admitted and diffused

through it in a more regular and uniform way, by which the fibrous roots of the crops, are more perfectly and abundantly provided with nourishment for their increase and support. It has likewise the effect of producing a more equal and regular mixture, of the different materials of which the soils are constituted or composed, by which vegetable food is more copiously afforded. The fineness of the particles of soils, also, permits the manures or other ameliorating substances being blended or incorporated with them in a more intimate and perfect manner, by which the supply of nutritious matter for the support of the plants that are grown upon them, must be more abundant and durable. And from the same circumstance, the influence of the atmosphere is more fully and effectually exerted, or the æration of the mould more perfectly effected. These are some of the more evident effects of this general process of tillage; but from the very great and sudden influence which it frequently has in the growth of most sorts of crops, it seems not improbable, but that it may be beneficial in other views, which some of your numerous readers can probably point out, and by which they will much oblige,

Yours,

X. Z.

EXPERIMENTS ON DIFFERENT BREEDS OF SHEEP.

To the Editor of the Agricultural Magazine.

SIR,

AS the comparative Experiments of different breeds of Sheep, when made with due accuracy by experienced farmers in this line, are of much consequence to the public, I send you the results of two experiments made in Norfolk, and stated in the Agricultural Survey of that district, lately published.

The first is by Mr. Overman, who on the 27th of March, 1799, took from turnips twenty-four two years old Norfolk wethers, and ten South Downs of the same age, which had always lived together from the time of being lambed, and after two hours weighed them. The result was as below.

	st.	lb.		st.	lb.	oz.
24 Norfolks, from the field	264	7½	average	11	1	15
Ditto, after fasting 28 hours	257	13		10	10	7

Difference

0 5 8

	st.	lb.	average	st.	lb.	oz.
10 South-downs, from the field	109	4		10	13	0
Ditto, after fasting 28 hours	106	2		10	8	9
Difference					<u>0</u>	<u>4 7</u>

One of each lot slaughtered.

		NORFOLK.			
	st.	lb.		L.	s. d.
Mutton	6	10	at 6d.	2	7 0
Tallow	1	2½	at 5d.	0	6 10½
Head and pluck	0	10½		0	0 9
Skin	0	9½		0	1 0
Wool	0	3¼	at 17d.	0	5 4
				<u>3</u>	<u>0 11½</u>
Blood	0	6½			
Entrails	0	11			
Loss	0	0½			
Live weight	10	12½			

		SOUTH DOWN.			
	st.	lb.		L.	s. d.
Mutton	6	8½	at 6d.	2	6 3
Tallow	0	13½	at 5d.	0	5 7½
Head and pluck	0	10		0	0 9
Skin	0	10		0	1 0
Wool	0	7½	at 18d.	0	11 3
				<u>3</u>	<u>4 10½</u>
Blood	0	7			
Entrails	0	11			
Loss	0	0½			
Live weight	10	12			

Norfolk 3 0 11½

Downs superior by 0 3 11

Besides the Downs are capable of being run much thicker on the land than the Norfolks.

The second experiment is by Mr. Crow, who about Michaelmas, is stated to have "put ten Norfolk, ten Leicestershire, and ten South Down wether hoggit lambs, to turnips,

that they might learn to eat them readily," and "to have let them remain together till the sixth of November, when the ten Leicestershire, the ten South Down, and nine of the Norfolk, (one having died), were numbered, weighed, and put each sort by themselves, into three pieces of wheat stubble, of one acre each, separated by hurdles; and at the same time, three other pieces of the same size were provided and separated in the same manner to shift them into. They were fed upon turnips, topped and tailed, measured to them in bushel skeps, with great exactness, from that time till the 14th of March, and then weighed again.

LEICESTERSHIRE.

<i>Weight of each sheep 6th of November.</i>				<i>Weight of each sheep 14th of March.</i>			
	sts.	lbs.	ozs.		sts.	lbs.	ozs.
No. 1,	4	13	4	No. 1,	7	0	8
2,	5	4	4	2,	6	9	6
3,	5	5	0	3,	7	7	8
4,	5	7	3	4,	6	12	8
5,	5	8	0	5,	6	12	0
6,	5	9	0	6,	7	6	0
7,	5	10	4	7,	7	2	8
8,	6	0	0	8,	7	9	0
9,	6	2	8	9,	7	8	8
10,	6	4	0	10,	8	1	0

Average weight 6th of November, about 5 st. 9 lb. 3 oz. each.

Average weight 14th of March, about 7 st. 4 lb. 1 oz. each.

Average increase of weight^t in eighteen weeks, two days, about 1 st. 8 lb. 14 oz. each.

SOUTH DOWN.

<i>Weight of each sheep 6th of November.</i>				<i>Weight of each sheep 14th of March.</i>			
	sts.	lbs.	ozs.		sts.	lbs.	ozs.
No. 1,	4	13	0	No. 1,	6	13	12
2,	5	0	0	2,	6	11	8
3,	5	1	8	3,	6	13	8
4,	5	2	12	4,	7	2	0
5,	5	4	12	5,	6	9	4
6,	5	5	12	6,	6	12	0
7,	5	7	0	7,	7	2	0
8,	5	7	2	8,	6	10	8
9,	5	7	4	9,	7	3	8
10,	5	8	8	10,	7	3	8

Average weight 6th of November, about 5 st. 4 lb. 5 oz. each.

Average weight 14th of March, about 6 st. 12 lb. 7 oz. each.

Average increase of weight in eighteen weeks, two days, about 1 st. 8 lb. 5½ oz.

NORFOLK.

Weight of each sheep 6th of November. | *Weight of each sheep 14th of March.*

<i>Weight of each sheep 6th of November.</i>				<i>Weight of each sheep 14th of March.</i>			
No.	sts.	lbs.	ozs.	No.	sts.	lbs.	ozs.
1.	6	4	8	1,	8	2	0
2,	6	6	0	2,	7	10	8
3,	6	6	4	3,	7	4	0
4,	6	6	8	4,	7	5	8
5,	6	7	0	5,	7	11	8
6,	6	8	12	6,	7	9	0
7,	6	11	8	7,	8	2	0
8,	6	12	8	8,	8	0	0
9,	7	2	0	9,	8	9	8

Average weight 6th of November, about 6 st. 8 lb. 9 oz. each.

Average weight 14th of March, about 7 st. 12 lb. 4 oz. each.

Average increase of weight in eighteen weeks two days, about 1 st. 3 lb. 11 oz.

The quantity of turnips eaten in eighteen weeks, two days:

The ten Leicesters, ate five hundred and eighty-eight bushels of turnips.

The ten South Downs, ate five hundred and eighty-nine bushels of turnips.

The nine Norfolk, ate six hundred and seven bushels of turnips.

It is stated that the offal turnips were at different times collected, measured, and deducted from the account of the quantities given to them; and that if the nine Norfolks consumed six hundred and seven bushels, ten would, in the same proportion, have consumed above six hundred and seventy four bushels, or eighty-five bushels more than the South Downs, and eighty-six bushels more than the Leicesters. The Norfolk and South Down were about the same age, but the Leicestershire about six weeks younger. The weighings were performed after the sheep had stood some time in pens to empty themselves. They were all prime stock, being picked out for the purpose.

I am, Sir, yours,

D. W. R.

ON THE RESP OR RED-WATER, AND THE REMOVAL OF LICE AND TICKS, IN SHEEP.

To the Editor of the Agricultural Magazine.

SIR,

SOME of your correspondents requested information on the subject of the *Resp or Red-water*, a disease to which sheep, in particular circumstances and situations, are much exposed. It has been ascribed to many different causes, as the too great use of such food as is of the more succulent kind, their being kept too late in the autumn in low damp pastures, &c. In the Northern parts of the island, it has been found to be the most prevalent and fatal, in situations within "the region of the hoar frosts;" being scarcely known in such districts as are more elevated, and at greater distances from the lines of rivers, marshes, or plains, where large collections of fresh water abound. Where the practice of confining the sheep in covered folds during the night is had recourse to, it is said to be seldom or never met with. It is asserted not to have been known in the highlands of Scotland, until the introduction of new breeds of sheep induced them to change the management of them, and leave them at all seasons in the fields.

Now, Sir, with respect to the prevention of its attacks, for I believe it seldom admits of being removed when actually present, different methods have been proposed; but the best is, probably, those of changing the pastures towards the latter part of the autumn, for such as are more dry and higher in their situations, and the free use of dry food during the nights, when they are feeding upon succulent roots or plants of any kind. Common salt has also been said to have been found beneficial, in the prevention of this destructive disorder.

While on the diseases of sheep, Mr. Editor, I must beg to trespass upon the attention of your readers, to mention two methods of dressing, which have been found successful in Norfolk, by two extensive stock farmers, previous to the winter season, against *lice* and *ticks*. The first is in use at Holkham, and consists of two pounds of tobacco, two pounds and a half of soft soap, one pound of the white calx of mercury, well reduced into powder; the whole being boiled in eight gallons of water, for an hour. This is sufficient for dressing about sixty sheep, and is applied, by parting the wool down the shoulders and breast, and twice on each of the sides of the sheep, and then pouring it in very carefully.

The other is by that excellent farmer, Mr. Overman, who boils a pound of arsenick, and an equal quantity of soft soap, in six gallons of water for some time, afterwards adding about twenty-six gallons more, and in this liquor he dips the lambs at the time the flock is clipped, finding it perfectly destructive of such vermin, and preventing their being communicated a-new from them to the ewes, which would otherwise quickly be the case.

I am yours,

D. W. R.

SOME DEFENCE OF MR. CURTIS'S PRACTICE OF
CROPPING, BURNING STUBBLE, &c. &c.

To the Editor of the Agricultural Magazine.

SIR,

RURICOLA, I think, is a little too severe upon Mr. Curtis's communication to the Board of Agriculture. He obliquely charges him with not adhering so strongly to matters of fact as he ought to do. I do not intend to take upon me the defence of Mr. Curtis's practice, as the best possible; I shall only recur to the paragraph at page 298 in your last number, where Ruricola says, in direct contradiction to the assertion of Mr. Curtis,—“*Deteriorated* the land must indisputably have been, after three exhausting crops, without receiving any manure, except the trifling supply from the ashes of the stubble. Here I boldly take my stand,” &c. &c.

I do not exactly know the situation of Mr. Curtis's farm, but I have understood that he occupied a tract of lands in the Fens. Now, if his farm, or that part at least of it, of which he speaks, was of the same nature with some thousands of acres which have been gained from the sea on that side of this county by embankments, I feel at no loss to believe that three successive corn crops have *not* injured it; but shall rather suppose that twice three would not have apparently *deteriorated* it, even without the aid of burnt stubble. As a strong proof that this may truly be the case with some land in Norfolk, I shall take the liberty of repeating what, to the best of my recollection, a gentleman who was present at the last Holkham meeting publicly declared. (He farmed a considerable number of acres in Marshland, of the nature I have above described.) He said, that he had at that time full an *acre* of ground, occupied with good farm-yard dung, to the depth of six or eight feet, that had been accumulating for some years, which he would thank any one to cart away, as it was of no use whatever to himself; for had he employed

it upon his land, his crops would all have been lodged, and probably destroyed. I confess I heard this assertion with some degree of surprise, considering it quite a phenomenon in agriculture: but I can the more readily admit the truth of its existence *in part*, since it is an undoubted fact that three successive crops of oats, produced on land of a similar kind, have averaged *fifteen quarters per acre* each year, and the field not considered at all the *worse for wear*; nor is this, I believe, a solitary instance.

To those who have been accustomed to consider the soil of this county merely as a mass of blowing sands, which may at any time be tilled with a ram's horn, these instances will, I dare say, appear to savour a little of the exaggerated. Although my neighbourhood can boast nothing like this, yet, unless my memory much deceives me, I can vouch for the truth of this fact, that in the Fen lands of Norfolk, manure is an article of second-rate value only.

Some time since, I mentioned to you, Sir, that twenty-five shillings, and even more, have been not unfrequently given for reaping an acre of wheat in Marshland. A proof of the luxuriance of vegetation on this ouzy kind of land, when not injured by high floods and breaches of the sea.

This will serve to corroborate what I have just said in defence of Mr. Curtis, for whose correctness, nevertheless, I do not intend to step forth a champion. His plan of burning the stubble, I cannot think ill-judged, as the intention was to return the land to grass again. Fire is undoubtedly more efficacious in destroying the seeds of weeds, and insects, than many ploughings.

I can hardly suppose your friend the Essex Farmer was serious when he wrote his strictures upon the custom of growing turnips at page 319 in your last number. Indeed there is a vein of jocularity and irony running through his whole performance, which bespeaks him to have sat down after his fortunate sale of pigs, in a merry cue. I doubt not but Agricola Northumbriensis, and Farmer Sandy, will take this into consideration, and pass off the jokes upon their labours with similar good humour. Turnips are no favourites with this gentleman;—I believe it, for the soil of Essex is certainly not the best adapted either to the culture or consumption of this root. Probably potatoes are the best substitute, and, at a short distance from the metropolis, may pay the grower best; but here they neither give a satisfactory return after all expences are deducted, nor are they that excellent preparative for wheat, which I should suppose they are on strong clays. On the contrary, so much is our land (too light and weak already) pulverized and lightened up by the culture of this root, that its

state becomes wholly unfit for wheat; and from actual trials I can pronounce, that, while turnips improve, potatoes exhaust the soil in no inconsiderable degree.* I know there are those who are of a different opinion, but if the question be confined to *sandy* soils only, I am confident I am correct.

I had not read the Essex Farmer's letter throughout when I wrote my last, or I might have been deterred by his criticisms, from prosecuting a subject on which I was able to say so little, viz. the quantity of seed. He says, (page 315) "This question is merely an old subject new revived, it is another of those things ill understood and worse acted upon. It shews how little people attend to what has formerly been said, or rather written and done," &c. &c.

All this may be very true—what then? Astronomy, before Newton's time, was an old subject; he revived it and made new discoveries. Was he censured for the attempt? No—nor ought that speculative farmer to be held up to ridicule, who attempts, though it may be unsuccessfully, to determine the agricultural question now under consideration. It does not follow, that because he writes what was written before, he was ignorant that it had been already before the public. Besides that *public* is always changing, and the present generation may stand a better chance of seeing the question agitated in your pages, Sir, than in the musty, antiquated volumes, of the foregoing centuries; not to mention the probability, that from a fresh body of experiments new lights may have been extracted. In truth, were we confined to the discussion of difficulties hitherto untouched, I believe your Magazine would soon dwindle down to little more than the blue cover.

I am, Sir, your, &c.

AGRICOLA NORFOLCIENSIS.

P. S. Since writing the above, I have been informed that Mr. Curtis did not probably occupy any such land *under the plough*, as I have described. If the experiment, therefore, of three exhausting crops, was not made upon the above *very fertile* kind of soil, I must beg leave to unite in condemning his plan as injurious to the field, and ill-according with the general ideas of a Norfolk Farmer.

* I am not disposed to contend that land cannot be thoroughly cleaned without turnips, but I will maintain, that the culture of that root is the most profitable method of doing it on such soils as mine. When such assertions as those of the Essex Farmer are made, it should be with modesty and some limitation. That general sweeping kind of asseveration, will, I foresee, bring an host of combatants about him.

I see no reason to add to or amend the report of our crops, in your last, except that wheat is estimated at something more than an average crop; it certainly yields beyond our expectation. The pease are very deficient; white pease particularly; the barleys were light in bulk, but do not yield so badly as was expected.

Price of Grain at Norwich, Dec. 6, 1806.

Wheat	64s. to 72s. per quarter.
Barley	38s. to 40s.
Grey pease	46s. to 48s.
White ditto	66s. to 74s.
Oats	24s. to 32s.

A. N.

ON MOWING WHEAT IN ANSWER TO MR. BRIGHTLEY, AND ON SHEEP DESTROYED BY DOGS.

To the Editor of the Agricultural Magazine.

SIR,

Pickworth, Dec. 16, 1806.

I CANNOT agree with Mr. Brightley in recommending mowing of wheat, except in two cases. The first is in any situation where the straw is particularly valuable. The second is when the wheat is getting too ripe from a scarcity of reapers, and danger is apprehended of its shedding: the same man may then certainly cut down a much greater quantity in a day, though ultimately there will be no economy.

The harvest before last, I agreed with my labourers to mow and bind into sheaves only, and not rake the ground, all my oats, and barley, at four shillings and sixpence per acre: my wheat was then let for reaping at nine shillings. Now what I mean to prove is, that if I had mowed and gathered my wheat at four shillings and sixpence; (a price I know they would not have done it at, as they left the oats and barley before they had finished half,) I had been no gainer: perhaps a very considerable loser. First, in mowing wheat, all manner of weeds, and rubbish are bound in at the tail end of the sheaf; which are all avoided if reaped. This wheat therefore will not be fit to cart to a barn so soon, by four or five days, or to a hovel by two or three days, as if reaped, a delay that may ruin the crop. Secondly forty acres, or at least thirty-five if reaped wheat, may be carted while twenty acres of mown are: consequently another delay prevented, which is always dangerous. Thirdly, a barn that will hold a hundred quarters of reaped wheat, will not hold more than fifty or sixty, of mowed; if a hovel, the same occurs, and additional thatching, another delay.

Fourthly, the ground must be raked. Fifthly, melilot, crow-needle, and other noxious seeds, may spoil the sample.— And sixthly, the thrashers will want at least one shilling per quarter more for thrashing it.

But in order to give the other side of the question all the fair play we can, we will suppose the ground perfectly clean from weeds, consequently as soon fit to cart, we will charge nothing for the additional quantity of straw to cart, but set that against the stubble, though that might certainly be carted at a less expensive time. For the additional thatching, we will charge one shilling per acre. For the ground raking one shilling; for thrashing, supposing three quarters per acre, three shillings; first cost mowing and binding, four shillings and sixpence; total, nine shillings and sixpence: loss, sixpence per acre, under the most favourable circumstances that can happen.

If the law respecting sheep being destroyed by dogs stand as mentioned by a Mercantile Farmer, in Number 5, page 303, it appears to be a most unreasonable one indeed, and ought to be immediately altered.

I once had between twenty and thirty sheep worried one night, but did not discover the dog, nor should I have been benefited it appears if I had, except in not running the risk of having more destroyed by the same dog. Indeed it is not possible any damages can lay against the keeper of the dog! as he, on the first complaint will undoubtedly destroy him.

The only possible excuse of the least plausibility the owner of a dog can make, is, that his dog may do forty or fifty pounds damage in one night, before he knows his faults; which he thinks it hard he must account for. But is it not more hard, his innocent neighbour should suffer, who kept not the dog? Certainly it is.

But the mischief does not end here, if the law in question pays no damages till the second offence. An illnatured, envious, or bad hearted man, who keeps no sheep, may keep a worthless dog, sharp set with hunger for the purpose, he knows that his dog may destroy a great number of sheep, before he is completely detected in the fact, as it is astonishing with what sagacity they commit these depredations; and when brought home to him, he can but destroy his worthless dog, and provide another as bad.

A short time back, Sir R. Salisbury, observed in the House of Commons "that fifteen thousand sheep are annually destroyed by our dogs." Mr. Dent says "fifty thousand, and that in the infirmary of Manchester alone, thirty-three persons, had in one month died of canine madness." And yet any number of dogs may be kept by labourers and paupers free of tax. Heaven be praised for wise legislators.

I am, Sir, your very humble servant,

JOHN WRIGHT.

AN ACCOUNT OF MR. RIX'S UNDER-DRAINED MEADOW,
WITH AN ENGRAVED PLAN OF THE IMPROVEMENT.

To the Editor of the Agricultural Magazine.

SIR, Fakenham, Dec. 22, 1806.

I BEG leave to recall the attention of your readers, to a paper which I forwarded to you in an early month this year, written by a Mr. Salter, of Whinborough, in this county, and published by the Secretary of the Norfolk Agricultural Society, with a view of making more publickly known and recommending an entirely new method of improving old rough and boggy meadow land.

This paper, contained a concise account of the methods which had been pursued, and the success which had attended Mr. Salter's trials for one or more seasons. I herewith send you a plan of another meadow, situate at Clipstone, near Fakenham, in the occupation of Mr. Wm. Rix, and the property of T. W. Coke, Esq. which was undertaken last year, under the direction of the original projector himself, together with an accurate estimate of the total expence of improvement, and actual balance of debtor and creditor accounts, for the year ending at Michaelmas 1806.

This meadow, from the neglect of former tenants, and want of judgment in cutting what few open drains or ditches were attempted, had become so very rotten in many places, and at least three parts of the four so over-run with sedge and rushes, that its utmost annual value could scarcely be estimated at more than *eight* shillings per acre. The lands contiguous to it are of a light friable nature, inclining to a sand by spots, and fall with a gentle declivity towards it from each side, the meadow being the bason and receiver of the numerous springs which rise in the upper fields, and which in a course of time, had rendered some parts of it utterly impassable for an horse, and scarcely safe for a man, at certain seasons.

The first step the present occupier took, was, as soon after Michaelmas as he could, to cut the drains as is shewn in the plan, all of which are covered, except the main drain marked A, in the sketch, and the two ditches B and C. These latter are cut both wide and deep, and are the chief operating checks to the springs above.

As soon as the weather permitted, he next set the teams to work (which were enabled to enter even upon the most unsound parts very shortly after the first process was concluded) to level the hills, fill up the hollows, and to cart all the su-

perfluous mould he could collect within the boundary of the meadow (such as came out of the new-cut ditches and main drain principally) to the amount of a thousand loads, over the surface of the whole.

In the last week of March he drill-rolled, and where the roller could not work from little inequalities of ground, he dibbled the seeds mentioned in the annexed statement, harrowing the small seeds in afterwards, and in July last, he cut and stacked the produce, which I have seen, and can witness to be excellent hay.

The present appearance of the meadow, after being fed down very close by more than fifteen score sheep, exhibits, notwithstanding the very wet season we experience, one uniformly *dry, firm,* and smooth surface, completely covered with a short turf, consisting of ray-grass, Dutch clover, and good natural grasses. There are certainly some rushes as yet, but far less numerous and stony than heretofore, and which, it may justly be expected, a few sweepings with the scythe, and hard-stocking with sheep, will in time wholly destroy.

Although there may not be much novelty in the scheme of draining, I am of opinion that very great merit is due to Mr. Salter, for the introduction of *vetches*, which, I apprehend, was never before tried on pasture ground, or indeed any ground whatever *unbroken by the plough*. It certainly answers several admirable purposes—one is, that it gives a prospect *that very year*, of a bulky crop of hay, which otherwise must have been very scanty. And, being sown with oats, the vetches afford that hovering kind of shade and protection to the young grasses in which they most delight. The eddish is of course of more worth also.

I am not quite sure, Mr. Editor, whether Mr. Salter's experiment gave rise to the following practice, which I am informed daily gains ground. Where the clover plants fail partially or by spots upon a new layer, spring vetches are often drill-rolled upon the surface *not ploughed*. The few clover plants are thus left to grow with the vetches, and both together in due season, form nearly as good a swarth as if the clover had not died away.

Yours,

AGRICOLA NORFOLCIENSIS.

P. S. Mr. Rix, is so thoroughly convinced of the utility and advantage of the method he has pursued, that he is now preparing a second meadow, lying at the foot of the one just improved, for a similar process.

Where pasture land can be spared for mowing, Mr. Salter seems to be of opinion, that vetches may be profitably em-

ployed, even a *second year*, upon new improved meadows He has had some experience of such a repeated trial, and I believe he thinks favourably of it. He dibbles the seed upon the unbroken surface, after feeding it down as close as he can with sheep.

I should be happy to hear that any of your readers have given Mr. Salter's plan a fair trial; I feel confident they would not repent having made it. The above meadow of Mr. Rix's cannot, I think, be over-rated, if I say that it is at this moment more worth thirty shillings per acre to a tenant, than in its former state it was eight shillings.

Debtor and Creditor Accounts of Mr. Rix's Meadow, ending at Michaelmas 1806.

	L.	s.	d.
363 of open drains, at 9 ¹ / ₂ d	14	6	3
173 under drains, at 6d	9	6	6
700 alder faggots laid in drains	5	12	0
Filling and spreading 1000 loads of mould, at 25s. per hundred	10	0	0
SEED.			
6 co. sp. tares	6	6	0
6 bushels of grey pease	1	2	6
6 bushels of oats	0	16	9
2 ditto, of ray-grass	1	10	0
100 pounds of Dutch clover	3	15	0
Dibbling	1	8	0
HORSES' TIME.			
5 horses, 14 days setting about mould	7	0	0
4 ditto, drill-rolling, 3 days	1	4	0
2 ditto, bushing and rolling-in seeds 3 days	0	12	0
MEN'S TIME.			
1 man driving team, 14 days	1	8	0
2 men, drill rolling, 3 days	0	12	0
1 man, bushing, 2 days	0	4	0
1 ditto, gathering stones, 2 days	0	4	0
Total expense	65	6	0
PRODUCE.			
18 loads of good hay, at 4l.	72	0	0
Feed	13	0	0
Produce	85	0	0

A. N.

ON DESTROYING COUCH GRASS, AND PRESERVING TURNIPS.

To the Editor of the Agricultural Magazine.

SIR,
A FRIEND of mine has recently favoured me with the perusal of the latest number of your magazine; and I am so highly pleased with its contents, that I have already given directions to have each future Number regularly forwarded to me; but considering it rather unfair, that I should take the benefit of the very instructive communications of your numerous and intelligent correspondents, without endeavouring, as far as my humble abilities will admit, to furnish you the following particulars; and should you think such sufficiently important to merit a place in the next number of your truly interesting and respectable publication, I shall feel extremely proud of the honour you will thereby confer on me, and be encouraged to address you further.

At Michaelmas 1805, among other land, a piece of about four acres, composed of a stiff loamy earth, came into my possession: it was then a wheat stubble; more completely choked with Couch-grass, than any land I had previously beheld, and as I am one of those who prefer the culture of more useful plants, I determined to exert the utmost of my skill to effectually exterminate this exhausting weed; but conceiving it would not be good generalship to attack so formidable an enemy at so late a season of the year,* I used this piece as rough pasture, all last winter; nor did I commence hostilities till the beginning of May† last; when having finish-

* I well knew that if I had then plowed it and had been prevented by the wet, from clearing the piece effectually in the autumn, I should have found it nearly impossible to have accomplished my purpose in the spring; for the greatest art in clearing this weed is in cauling its roots to hold together, while the roller pounds each clod to powder, in order that the harrow may by taking hold of any branch of what I shall call a family, either drag the whole of such family up to the surface, or that such branch may lose its hold of the harrow, since we know that if the smaller branch be torn off, it will soon create a new family, and the roller can only have this effect in dry weather. If I had merely ploughed it in the autumn, without breaking the families into small branches, there would then have remained this objection, viz. by giving the air free excess to the bottom of the furrows, this weed would have pushed its roots much deeper into the understratum, for so sharp are its roots, I have more than once known them enter a potatoe while growing.

† I certainly should have ploughed the piece a month sooner, but knowing I should not have been able to attend to the after operations during barley-sowing, I was induced to defer it to this late period, and I am now more than ever convinced that when couchy land is once ploughed, it should have but little rest till the couch is cleared, if the weather permit.

ed barley sowing, I ordered four ploughs into the said piece, with instructions to plow a deep and wide furrow;* which was accordingly executed. I suffered it to remain thus ploughed about ten days, when I had it rolled twice in each place† with a very heavily weighted roller, and the following day it was cross ploughed the same depth as before: in a very few days after this, on a Monday, (I believe the first week in May) I again applied the roller twice in each place as before; and immediately after it followed a coarse and long tined harrow‡ on which rode a man, whose business it was to lift the same at certain distances to clean it from the couch, which was immediately raked up and carried off: this harrow also went twice in each place. On Tuesday the same operation was performed with the roller and harrow, across Monday's work, only that the weight was taken off the roller, when to my great satisfaction, nearly the whole of the couch and all other weeds were brought to the surface: however, I did not stop here; for being determined to effect my purpose, I ordered a finer harrow to be used on the Wednesday and Thursday, in like manner as the coarse one had been on the preceding days; and on Friday hand-rakes were employed to gather what little of the weeds the harrows had left; immediately after which a light roller was used to lay the surface in the state in which I thought it would be most likely to cause all small seeds to vegetate, and in which state I suffered it to remain till Midsummer; about which time I caused about seventy load of very good compost to be brought on and immediately ploughed in, as shallow as possible; after which it was again harrowed and rolled down. About the middle of July, this piece was again ploughed, a little deeper than at Midsummer; and directly afterwards it was drilled with turnip-seed, by

* I must here remark that I am an advocate for ploughing a shallow and narrow furrow, under general circumstances and in most soils. Next month I propose to offer my opinions at some length on this important subject, and shall feel myself much obliged if some of your other correspondents will also present their opinions thereon.

† Whenever the principal object of rolling is to reduce land to a fine powder, I must earnestly recommend the experiment of rolling twice in each place, for I can from strict observation and much practice, declare that the second operation of the roller is much more efficacious in grinding the land, than the first; particularly if the middle of the roller returns on the same ground on which the leaving end went forward, (not the gaining or gathering end.)

‡ I had all the tines of one of my coarsest harrows knocked out, and in their stead, I had one-fourth the number of an unusual length applied, so that though the man's weight caused them to go completely to the bottom of the furrow, yet there was not one instance of the harrows choking.

Cook's drill,* in eighteen inch rows, then harrowed with a very light harrow, and rolled with a very light roller.

The season proving so extremely favourable, I claim no merit in saying the turnips came up well, and continued extremely healthy; but I really have vanity enough to suppose that the method I pursued in their further culture, will entitle me to some little merit in the opinions of such of your readers as are well acquainted with the cultivation of this useful and important root; nor do I doubt that they will highly applaud the method I shall take to preserve a portion of my turnip crop, compleatly from the frost.

I believe it was scarcely three weeks after these turnips were sown, when I took two of my work-women into this little piece, with each a seven inch hoe in her hand, and proceeded to see them take each one row; then in their going from left to right, I directed them to leave one turnip only on the left of the hoe at each chop or draw they made, without paying the least attention to their right, or, without attending to weeds or to hoeing the land; making it their whole business to kill the surplus turnips.† Thus they went on in my presence till they came to the end of their rows. When returning of course I directed them to pay that attention to their right, which they had before paid to their left; and after observing how well I was satisfied with their labour, I engaged to give them twelve shillings to complete their job§ but that they should allow me one penny per score for all those spots on which I might afterwards find more than a single turnip growing, likewise a penny per score for all such vacancies in the rows as should exceed a foot, and a penny *each* for all those that should exceed eighteen inches. Notwithstanding these women were hindered some hours by rain,||

* If I had thought the turnips would have grown so strong, I would have drilled them at more distant rows, but I should think that for the average of turnip land, eighteen inches is quite wide enough, and perhaps, on much land, fifteen inches will be found a more prudent width.

† Without directing women so minutely at first, they would be a long time getting cleaver at this kind of work, and perhaps, continue to proceed without a plan for a season; but when once they are properly directed how to proceed, they are more proper for this business than men, because it requires the attention of the eye and activity of the hand, more than the labour of the body.

§ This work may, on an average, be done at about one shilling and sixpence per acre, but the exact price must depend much on the thickness the turnips, are sown both in the rows, and from one row to another, as well as on the greater or less nicety required by the master, &c.

|| Even if the land is dry, I never suffer turnips to be hoed while their leaves are wet, for the dust that hangs to them acts like so much poison; and

they completed their work in rather less than four days; and had executed it so well, that I made no deduction for the few double turnips, &c. that I might have found.

My smith had prepared, according to my directions three hoes, four inches wide, and nearly in the shape of plough-shares: these I had fixed into Cook's drill-beam, and directed a man and a boy, with a horse, the day after the women had done their part, to proceed to horse-hoe each row, by turning off what I shall now call the right-hand side, in going forward and to return the same to each row in coming back; * taking care not to earth-up the turnips but as little as possible. Two days after this the left-hand sides of the rows were hoed in like manner; and I think about this time. no plantation of garden shrubs could have looked more beautiful. About a week after this I had three large hoes † fixed in the before-mentioned beam; with which the man, boy, and horse, hoed the spaces twice in each place; § observing to go deeper in returning than in going forward each time; by which means the earth was broken into smaller particles than it would have been by going to the full depth in going forward. My turnips in the course of ten days after this, were grown so astonishingly, that I could no longer defer giving them a final hoeing, which I did by using again the large hoes, and by applying

to hoe land while it is wet, has more the effect of cement than of pulverization: but when the business of the hand-hoe is merely to destroy a part of the turnips, that operation need only stop while it actually rains, since it is the horse-hoe in drilled turnips that must be depended on to effectually pulverize; and as these useful instruments will with a change of light horses and an active young man and boy, will hoe upon an occasion near twenty acres of turnips per day, (once in a place) the matter is enabled to take advantage of fine weather in general; which advantage alone is in my opinion enough to recommend drilling turnips.

* If I had had many turnips drilled, I should not have been at the expence of returning the earth with those little hoes at all, (except in settled dry weather) but should have left that process till the wide hoes were applied; yet I would by no means neglect to apply the little hoes to throw off the earth from the rows at first, but not from both sides the same day, because by loosening a turnip on both sides at one time may choak its growth, while loosening it on one side only tends to invigorate it; throwing off the earth next the row is striking a death-blow to all such weeds as might otherwise be protected from the large hoes, and of course is also the means of admitting so much the more pulverized earth to be afterwards thrown back (or returned).

† These hoes were of the common shape, but unusually wide, their width was rather more than a foot.

§ Once in each place at this time would certainly have done well, but having no other turnips under the drill-system this year to attend to, I thought it not very imprudent to bestow a little extra culture on these few;

to each of them two small pieces of wood to throw up the earth against the rows; thereby leaving a kind of furrow between each row to keep them dry during the autumn, and I have now the pleasure to say, that I never saw so fine a piece of turnips; for although the whole of my broad-cast turnips are this year, very good, I do not think that I have more than half the weight per acre that this piece will produce.

I intend in a few days to commence drawing out each alternate row,* for immediate use, and to plough the earth of such, up against the remaining turnips;† therefore unless I should be prevented by a very speedy frost, I expect to secure them from the frequent severity of January and February; the effect of which I will communicate to you on a future day, together with some experiments respecting the comparative weight of those rows used this month, and such as I hope to preserve till March and April; which statement you shall have in time for your April Number of the Magazine.

I must now crave your reader's pardon for intruding so much on their time, but I considered that if I had merely said I had cleared the couch, produced such turnips, and was about to secure those turnips from the frost; I should have been called on for further explanation.

While I wish much success to your very laudable undertaking,

I remain

Your most obedient servant,

Dec. 5, 1806.

FARMER EAST.

perhaps next year, when I shall have upwards of sixty acres cultivated in rows, I may not bestow so much hoeing to each acre, yet I shall always think that an extra hoeing to turnips is ever well applied, if time and weather will permit without much inconvenience to other business; and so much am I of this opinion, that I intend to provide myself with at least three sets of horse-hoeing apparatus of each sort, in order that I may the better take advantage of fine weather, &c. for we ought not to expect a succession of such favourable seasons as this has proved.

*This will easily be performed by the assistance of a pair of common cart-wheels, that I have caused to be fixed on an axle, sufficiently long to permit the wheels to run six feet and a half from each other; when three of the alternate rows on one side the piece are first cleaned by hand or a wheelbarrow, the horse can go on the middle space, and one wheel on each side of the others, while the driver pulls a fourth alternate row to load the cart; so that not even a leaf of the standing turnips need be hurt.

† A swing-plough will be used of course.

ON THE KEEPING OF ANIMALS ON GREEN FOOD, AS A
MEANS OF PROMOTING THE INCREASE OF GRAIN.

To the Editor of the Agricultural Magazine.

SIR,

THE attention of many able writers and experienced cultivators, have of late been particularly directed to the means of rendering the increase in the produce of corn in this island, more adequate than has hitherto been the case to the consumption of its population; and recent circumstances, have certainly placed the necessity of such an increase, in a more obvious point of view, as it is clear, that we must now more than ever depend upon ourselves, for one of the first necessaries of life. It is to the growth of a sufficient supply of grain to the wants of the people, that we must probably look forward with confidence for our safety. The modes of affecting this are numerous, but in addition to the primary one, of inclosing our cultivatable wastes and commons, that of extending our tillage, by a diminished necessity for grass land in the support of much of our live stock, is evidently of great consequence. And in the intention of accomplishing it without injury to the grass-system, the following communication by Mr. E. Parys, as given in the Survey of Shropshire, seems deserving of notice.

“ He conceives the principal object respecting agriculture in the present state of this country, is to procure the greatest possible supply of the necessaries of life within the kingdom itself, and that one principal means of doing this, is to raise the greatest produce from a given quantity of land.

“ To effect this, every encouragement should, he thinks, be given by land-owners, to the cultivation of grain and turnips, because he looks upon the produce of an acre of grain to be, to the produce of an acre of grass, in the proportion of at least fifteen to two, in furnishing the necessaries of life. He supposes the grain made into bread, and the grass digested by a feeding beast, and changed into an increase of weight.

“ One great means of increasing the growth of grain and turnips, he thinks, would be to encourage the farmer to make as much manure as possible. This would be effected, by allowing him to sell all his wheat and rye straw, with the restriction of laying out the whole price in manure; and by gentlemen who have land in their hands, trying the experiment of keeping their cattle and horses in the house upon green food, great part of the summer.

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“ For these last six years, he has sold all the wheat-straw he did not want for thatching, and the beds of certain kinds of horses, and can assure us that the same farm has produced for some years back one third more grain, and keeps double the live stock it did six years ago.

“ As a proof that what he says, of keeping cattle in the house in summer upon green food, is not matter of theory only but of practice, he shall mention his own experience.

“ For these last five years, he has kept eight or ten waggon horses in the stable upon clover, cut and carried for them once a day, the under waste that they made was thrown into a large cratch (or receptacle with staves on each side) for his pigs, which have generally been from twenty-five to forty. His horses and pigs thus fed, have eaten between the beginning of May and corn harvest, from two and a half to three and a half acres, according to the goodness of the clover. His horses have been by this means in much better condition than if turned into a field, there has been a saving of at least eight or ten acres of clover for other stock, a great deal of the richest manure has been made, (much more and richer than in the same time in winter,) and the additional daily expense has been, one man less than half his time in cutting, raking, and carrying, with a horse and cart, one load each day.

Debtor.		Creditor.					
L.	s.	d.	L.	s.	d.		
One man half a day, for 13 weeks, at 4s. per week	2	12	0	Eight acres of clo- ver, sowed by this experiment, at 50s. per acre	20	0	0
One horse 13 weeks, at 6s. per week	3	18	0	Manure, at least	10	10	0
					30	10	0
Profit -	24	0	0				
	30	10	0				

“ The first year he tried the experiment, the manure made was estimated by a good farmer at twenty pounds, but he wishes to make allowance for the value of the straw, and the manure that would have been made by the horses standing in the stable the usual hours in summer.

“ He must endeavour to remove an objection that may perhaps be made to this experiment, by observing, that he cannot think land injured any more by the green food being cut by the scythe, than by cattle and horses, and as to the

dung that is dropped in Summer, it breeds flies and does more harm than good. He has ever thought land exhausted infinitely more, by its produce being suffered to ripen and reed, than by its being cut in a green state. The advantage he had derived from this experiment, induced him last Summer, 1799, to try whether cattle might not be treated in the same way.

“ He began with putting into stalls nineteen, he afterwards increased his stock fed in this manner to fifty, consisting of horses, feeding cattle, milking cows, and colts, besides a large quantity of pigs.

“ The horses as usual answered well.

“ The feeding cattle came on much faster than he ever saw them in summer. The milking cows fed very much and milked very well. The colts did well, and lived chiefly upon the refuse of the cattle. The pigs as usual, ate the refuse of the horses.

“ The quantity of land run over with the scythe for this purpose was :

“ Fourteen acres of trefoil very moderate, on account of the clover root having died in winter.

“ Two acres of vetches, very moderate on account of the severe winter.

“ Five acres of very good grass.

“ The cattle were turned out late at night for about six or seven hours.

“ The trefoil caused some trouble, on account of the cattle sometimes swelling, but brought them in very well, though they throve best upon the winter vetches, or tares, and upon the grass. The daily expence was, he says, an old man of more than seventy years of age to feed and clean them, another young man to cut, rake, and carry the food with a single-horse cart.

“ If this stock had been turned out, he should suppose they would have run over sixty acres if the crop had been good, and much more if the indifferent trefoil is considered.

EXPERIMENT.

<i>Debtor.</i>	<i>L. s. d.</i>	<i>Creditor.</i>	<i>L. s. d.</i>
Two men 13 weeks, at 14s. per week	9 2 0	Twenty-nine acres sowed at 50s per acre	97 10 0
One horse, ditto 7s. per week	4 11 0		97 10 0
	13 13 0		97 10 0
Profit	83 17 0		
	97 10 0		

Any person that intends to practice this method should begin to cut his green food early in spring that he may be able to mow the same ground for hay by corn harvest.

“ He has before observed that he never saw cattle in summer come on so fast, he speaks this not only from his own observation, but from that also of several farmers and butchers, who came through curiosity or business frequently to visit them; the most feeding food is (he says) winter vetches, and the most advantageous mode of cultivating them, he thinks, is, to plough up a clean stubble, (that is intended for turnips) manure it, and sow it with vetches soon after corn harvest.— When the vetches are all cut in May and June, or rather in the latter month, the field may be ploughed and sown with turnips for a winter crop.

“ From corn harvest till September 22, his cattle were all out in the fields at grass. He then took up thirty into stalls, and fed them with turnips, which had been sown early in May, and which had arrived at a very good size. His first field of turnips has been carried off, ploughed and sown with wheat, which has been above ground some time and looks very promising.

“ He has practiced this scheme of sowing turnips in May, carrying them off before the beginning or end of the following November, and then sowing the piece with wheat, for these last three years. And he has found this wheat much more productive than any sown after any other crop or fallow. He is speaking of dry sown land.

“ One year he got up all the turnips of a field, tossed and butted them (throwing the tops and butts in heaps by themselves) carried the tops immediately as they were cut, to a bare stubble for his cattle and sheep, and laid the butts up in large heaps either under cover, or in his stock-yard, with straw over them. Where there was no straw in layers between them, they kept for two or three months, some that had layers of straw every foot or half yard perpendicular, soon began to decay near the straw, which was made to heat by the moisture from the turnips.

“ From these experiments upon turnips, and from observing that dry land of his own, though it produced crops of grain, or turnips, for many years together, with the change of clover (mown twice in the same year) only once in five years, did not lose any of its power. He has conceived that much more grain might be produced upon well cultivated farms; wet land that is well cultivated, might bear a regular succession of crops of turnips, wheat, and barley, or oats. Dry sound land, may also bear the same succession when an early crop of turnips

is wanted, and when turnips are wanted to stand the winter, a succession of turnips, barley, and wheat.

“ He thinks it is much more advantageous to carry all the turnips to cattle in stalls, (except a very few left for sheep) than to eat them on the land; because they furnish much more food and manure. He is aware that many gentlemen of landed property, will object to this constant tillage, in answer to which, he shall only observe, that it has been his opinion and practice, never to have any grass land that is not worth forty shillings an acre; never to plough his grass land but to till the rest constantly, with the intermission now and then of turnips and clover, the latter only for one year.

“ The farm he has above alluded to, is about two hundred and forty acres, of which he has in grass-land about ninety acres, in tillage for grain and turnips about one hundred and twenty acres. The rest is generally clover, unless he has a single fallow for wheat upon a field of wet land.

“ He repeats it once more, that the interests of the public, of the landlord, and tenant, (for he knows of no distinction when many years are taken into consideration) are united, in the greatest produce of the necessaries of life, and that if arable land is kept clear and full of manure, it receives no injury from producing the greatest quantity of grain. The increased produce of land, benefits the public in too obvious a manner to enlarge upon. It benefits the landlord, by his being able at the expiration of certain fair intervals, to raise the rent of his farm, and the tenant or occupier, by getting more profit from a given quantity of land, and, with nearly a given capital.

“ He has recommended turnips once in three years, because he thinks land requires cleaning once in that time, and because it is thus affected without losing the benefit of a crop in any year.

“ Much has been lately said about the superior advantage of cattle over horses in farmer's teams, he thinks some horses must be kept for the farmer to take his grain to market, and to carry his coal and lime. If he is so near a large town that he can draw at least two loads of dung in a day, he will also want them for that purpose, other team-work may very well be done by cattle; but he thinks cows are much more useful and beneficial than oxen, and that it would be an advantage to the kingdom if few or no oxen were reared. The uses of cattle are to work, milk, and feed. He has seen barren cows work as well as oxen, they require less keep and work faster; oxen are of no use to the dairy, and they will not feed so fast as cows.

“ When first he commenced farmer, he followed the example of his predecessor in feeding chiefly oxen, but he soon found that cows fed much faster and on less meat, and for some years past has carefully avoided having any oxen in his stalls.

I am yours,

X. Z.

ON IMPROVED AGRICULTURAL AND GRAZING SYSTEMS;
FALLOW CROPS; FEEDING HEAVY STOCK WITHIN DOORS;
OXEN AND HORSES.

The observations and statements contained in the following part of a very able paper, by Mr. Pitt, of Wolverhampton, printed in the last volume of Communications to the Board of Agriculture, are so interesting and so connected with the subject of the preceding article, that we cannot refrain from giving them a place here.

THE intelligent writer says, that “ although our system of agriculture has been already greatly improved from former times, yet it still remains very defective, and capable of much farther improvement. It is much lamented by many friends to agriculture, that we have still so great an extent of fallow ground, and that often upon our best and most fertile soils; and although he has some doubts whether fallows can be wholly banished at present with advantage, from our strong, wet, and tenacious soils, or until they are more completely drained and ameliorated, yet he has not the least doubt but they may be very much reduced in compass, and that very much both to private and the public advantage.

“ The extent of fallow ground throughout the kingdom is, he adds, very great; it is difficult to form any probable estimate; but if we suppose it to approach nearly to half the growth of wheat, it will amount to near a million of acres.

“ One of the greatest agricultural improvements of the last century, was, says he, the introduction of turnips, by which fallows have been very generally banished from light land; but as much the greatest proportion of the land of the kingdom is of a strong or heavy quality, yet very proper for the growth of wheat: the introduction of a good system, which would as generally banish fallows from heavy soils, would be a still much greater improvement.

“ In many of the common fields of the kingdom the soil is of a strong, deep, moist, yet rich, fertile and productive quality, not easily exhausted if kept clean from weeds and couch grasses; for which purpose this land is fallowed every

second, third, or fourth year, and often so imperfectly and incompletely done, that the purpose is but half answered: such land should be completely drained, and might be kept cleaner with a fallow crop, under active and spirited management, than it is at present with fallow.

“Cabbages are well adapted for such land, if the allotment now used as fallow were well worked early in the spring, and then dunged, and thrown into two-bout, or four-furrow ridges, and planted with cabbages in June; this would be a very great resource either for fattening, or for dairy cattle, or for sheep. From Michaelmas to Lady-day, as the cabbages are cleared off, the ridges should be broken down for barley or oats, with which might be sown clover, or the land reserved for vetches at pleasure. As this land is with difficulty accessible in wet weather in winter, but would be more easily so after effectual drainage, the opportunity of frost for collecting a store of cabbages should not be lost; if, at other times, it cannot be approached with light carts, the use of asses and paniers has been found very effectual, and superior to all other methods of conveyance to moderate distances in dirty countries. It is surprising what effects have been wrought in the conveyance of brick for building, by women and children only, with this simple animal, so easily kept and cheaply supported. He believes half a dozen asses so worked would, in a season, convey the cabbages to a reasonable distance from a great many acres.

“For continuing a supply of green food from Lady-day to May, part of the ground should be planted with Swedish turnips; these should be in rows in one-bout, or two-furrow ridges, and planted out in May, or early in June; in which way they will succeed well, and he believes it to be their best possible mode of culture. This practice is annually and successfully exemplified, by Mr. Tollett, of Swinnerton Hall, Staffordshire, who has from ten to twenty acres of land annually in this culture; the plants being raised in a garden bed, give the more time to clean and ameliorate the soil preparing for their reception.

“Though the Swedish turnip is intended for late use, it may be cleared from off the ground at pleasure, as it will keep either in large or small heaps, or may be spread abroad on pasture land, without a necessity of being consumed immediately.

“With the oat or barley crop may be sown, in part, clover, and part reserved for vetches, which may either be drilled in rows, or sown broad-cast, as both are practised successfully; if in rows, it gives an opportunity of farther ameliorating the soil by hoeing, during the growth of the crop.

“ In some countries, where the treading of the land by horses is found serviceable to the succeeding wheat crop, the vetches may be eaten by tying them on the crop, as is now done; the same may be done by cow stock, or by hurdling sheep, or the vetches may be carried to the stalls at pleasure; clover may be consumed in the same way, and either the one or the other made into hay at the choice of the occupier.

“ Potatoes may also be sown upon suitable spots of land, either the same season with the cabbages, or with the vetches, either or both, as the cultivator may think proper.

“ The succeeding crop, or fourth in the course, beginning with the fallow crop, is wheat; and as the alternate green crops would enable the occupier to support a much larger live stock, than is done at present, and consequently to raise a much greater quantity of manure, there is no reason to fear any deficiency in the produce of wheat by this system, but, on the contrary, an increased produce.

“ The course of crops in this system would, he says, be as follows:

1. Cabbages, Swedish turnips, potatoes.
2. Barley or oats.
3. Clover, vetches, potatoes.
4. Wheat.

“ The supply of food for live stock would meet the demand for every part of the year; cabbages from Michaelmas to Lady-day, Swedish turnips thence to May, and vetches or clover from May to Michaelmas, with hay and potatoes to use occasionally, would afford a constant and uninterrupted supply for every season.

“ If by these or similar means the fallows could be reduced one half, and by degrees into a less proportion, the increased produce would go a great way towards meeting the increased demand; the way to introduce this must principally be, by the example of persons of influence and property, whose attempts in this way, if conducted with judgement, would be certain of success, and whose success would soon be imitated by others. He thinks one may venture to foretell, that if this or some other similar system be not voluntarily adopted, necessity will by degrees compel its adoption. He supposes we are in this part of our agriculture, much behind the ancient Egyptians, or the modern Chinese, whose population would not, and does not, admit of a large portion of their fertile land being artificially rendered unproductive; that the system is faulty and unnecessary, is proved by our own modern gardeners, who have no fallow ground, and whose

ON SOILING HORSES WITH LUCERNE.

To the Editor of the Agricultural Magazine.

SIR,

THE following statement given by Mr. Fowel in the Norfolk Report on Agriculture, of the advantages of this plant in the soiling of team horses, seems to deserve the notice of the practical farmer who has land proper for its growth.

I am yours,

T. T.

“In the summer of 1797 he fallowed a piece of land of seven acres, being part of a farm belonging to the Right Hon. the Earl of Albemarle, situated in the parish of Snetterton in the county of Norfolk, and in his occupation. The soil a sandy loam upon a clay marle bottom, worth to rent about 15s. an acre, exclusive of tythe.

“The above land in June of the before mentioned year was sown with turnips which were well hoed: the following spring it was properly prepared, and the last week in April was sown with six pecks an acre of barley, and also with twenty pounds of lucerne, and four pounds of clover, an acre broadcast, which were harrowed in with the corn. In the summer of 1799, the grass produced by the lucerne and clover seed was mown and made into hay, and the after-grass fed with cattle. The following summer (1800) the clover disappeared and left an abundant crop of lucerne, a part of which was given green to horses, and the remainder mown twice, and made into hay, but as no register was made he cannot state any particulars.

In the summer 1801 he determined to keep an accurate account of a certain quantity, the result of which was as follows:—On the 11th day of May he began mowing four acres, one rood, and twenty-four perches of the above lucerne, which he had purposely divided off and applied it by feeding ten cart horses in a walled-in yard. There was neither hay nor corn given to the horses except the first two weeks they were taken into the yard, when two pecks of oats with some chaff were allowed each horse per week, to prevent any ill consequence from the too sudden change from corn and hay to green food, and they were fed entirely from the aforesaid four acres, one rood, and twenty-four perches of lucerne till the 21st of September following, making exactly nineteen weeks from the period of their first going into the yard. He cannot state with accuracy the quantity of work done during

the above nineteen weeks by the ten horses, but as near as he can estimate eight out of the ten went to plough or other work nine hours every day (Sundays excepted) and were in excellent condition during this experiment. The yard in which the horses were kept and which they never quitted except when at work, was littered with refuse straw from other yards, green weeds from borders or waste land, or any other refuse litter that could be conveniently procured. The dung was turned over after the horses were taken from the yard, and after remaining about a month in heaps, produced sixty-two loads at thirty-six bushels to the load. The grass had a slight top dressing of peat ashes the first winter, and has received no manuring since, except a small part, which did no material good. The first mowing commenced the 11th of May, when it was fifteen inches high; second mowing 6th of July; and the third mowing 18th of August.

He was induced to adopt the above method of summer-feeding horses from the inconvenience he had previously experienced from having but a small quantity of pasture land, and the consequent difficulty of preventing them from breaking the fences, and getting into and damaging the growing crops of corn.

The calculation of the value of the four acres, one rood, and twenty-four perches of lucerne above-mentioned is as follows:

Keeping ten horses nineteen weeks, at 6s.	}	L.	s.	d.		
per horse per week					57	0
Sixty-two loads of compost at 3s. per load				9	6	0
				<hr/>		
				66	6	0
Deduct two and half coombs of oats						
at 12s.				1	10	0
Chaff					6	0
Refuse straw and litter				2	0	0
				<hr/>		
				3	15	0
				<hr/>		
Total				62	10	0
				<hr/>		
Or per acre				13	17	4
				<hr/>		

OBSERVATIONS ON THE SALE OF CORN BY SAMPLE; ON
DEALERS IN CORN AND CATTLE, AND ON MILLERS.

To the Editor of the Agricultural Magazine.

SIR,

THE following remarks are contained in the Appendix to the useful Survey of the County of Hereford, and as relating to grain and the supply of human food, may not be wholly uninteresting to some of your farming readers.

I am, yours,

V. V.

In regard to the sale of grain by sample, the writer observes that when the law against this practice was enacted and enforced, it was wise and politic, because it was adapted to the then situation of the country.

“ Population was generally and thinly dispersed, and each district produced a quantity of corn equal to its consumption. The farmer then supplied the inhabitants of his village with corn, and the small remainder was conveyed to the next market town on a horse driven by himself, his son, or an upper servant. If he sold his corn, he rode home again; and if he failed to sell it, he returned behind his horse as he came.

“ Each individual then purchased for the use of his family only, and it thus became the interest of the country, that corn should be exposed to sale in small quantities, because it was generally wanted in such quantities.

“ The state also of many of the roads was unfavourable to the conveyance of large quantities together.

“ But, says he, the situation of the country is now widely altered. An increased population is collected by manufacturers into immense masses, and very little corn is grown in those districts, where of necessity, the greatest quantity is consumed. Whatever, therefore, facilitates its conveyance from the country producing it, to the country requiring it, must be beneficial to the public interest.

“ If the corn-factor, who has to supply the enormous demands of a great manufacturing district, were to be prohibited from purchasing any other corn, but that, which he found exposed in the market of a small and distant town, he would often find the whole quantity offered inadequate, or barely equal to the supply he wanted; in consequence he would be obliged to submit to any price which the seller demanded; whilst, on the other hand, when the factor did not

attend the market, or did not want to purchase, the quantity exposed to sale would often greatly exceed the demand. The farmer, in this latter instance, would be necessitated to accept the price which speculators would give; or, after waiting to the close of the market, he would have to convey his corn home again, and to return with it to the next market, under the same uncertainty as before. The expence of thus attending the market with his corn would prove a very severe tax on the tillage-farmer, who has already not a few difficulties to encounter; and eventually, he might thus be induced to diminish the quantity, which he had been accustomed to sow.

“ Another injurious consequence to the public might also ensue; the farmers would be strongly tempted to consult each other, on one market day, on the quantity which should be brought the succeeding market; and the next step might be to settle the price at the same time.

“ The sale by sample, on the other hand, affords the farmer an opportunity of disposing of his corn with the least expence and under no uncertainty, whilst his team is well employed in labouring at home.

“ The purchaser has the means of examining a large number of samples; and if the quality produced by one farmer should not suit him, or the price be deemed exorbitant, he can readily apply to others, and whatever be the quantity wanted, the factor has thus the means of obtaining it. The inhabitants of small market towns apparently suffer some inconvenience from the sale by sample, but perhaps it is much less than generally supposed, for the miller and flour-dealer, where those trades are combined, has the means of supplying tradesmen and the peasantry with flour on lower terms than they can otherwise obtain it. By exhausting the patience of the farmer, when he has exposed his corn in the market, the inhabitant of a market town sometimes gets an advantageous bargain, because the farmer, who has brought his corn from a distance, is unwilling to carry it home. But the loss thus sustained by the grower, would induce him as before to diminish the number of acres usually adapted to the culture of grain; and thus the price of corn would increase from the reduction of the quantity grown.

“ But, further, the law against sale by sample is incapable of being carried into effect. The contract might be made in the market, and the corn might be produced there, but the farmer and the factor would have settled, or at least understood the quantity and price at a preceding market, and the law would appear to be satisfied, even in the very act of its evasion.

“ With respect to the second head it is remarked, that like the sale of corn by sample, the dealer in corn and cattle is necessary, where the corn and cattle of one district are to be conveyed to another. Thus “ the wheat raised in the county of Hereford and Oxford meet in the Birmingham market; whilst the cattle of Scotland and of Ireland alike contribute to the supply of the London Market. The farmers and breeders of those distant districts can hardly be expected to attend personally on every occasion of this kind; & if they did, the public must assuredly in some way or another defray the increased expense which would thus be created, and the public would prove the sufferers.

“ Much clamour however is generally raised against the dealer; he receives the curses of the populace in the country where he buys corn, for taking it away, and he is similarly treated in the country to which he conveys it, because he does not sell it cheaper. The jobber is equally blamed, because the same animal is made to pass through many hands, before it arrives at the market. But one district, in which dairies abound, has the means of rearing and supporting a large number of pigs in summer; another district has a large quantity of corn to thresh, which affords similar means during the winter. By purchasing therefore the pigs in the one district, and selling them in the other, the jobbers, or dealers, are equally the friends of both, and of the public; whilst the competition, as in other trades, tends to limit the profit for their time and trouble.

“ One farmer also, from the nature and circumstances of his farm and buildings, has the means of raising a great number of pigs with convenience, and with these he supplies others, who have not the same advantages. Crops of clover, vetches, and other green food frequently enable one person to keep a much larger stock of pigs during a part of the summer, than his farm will maintain throughout the year.— But, when his food is exhausted, it is surely advantageous to himself and the public, that this stock should be transferred to another, who has the means of providing them with the food required. Under this management, the animal certainly attains and brings to market a larger weight, than it would generally have done, had it remained entirely in the breeder's hands, and less food is either spoiled or wasted.— When the animal ultimately comes to the scale, neither the butcher nor the consumer are interested to know through how many hands it has previously passed; nor does the pig bred by one farmer only sell at a lower price per pound, than that which has been in the droves of twenty jobbers..

In what relates to the miller, the writer says "it is a subject of frequent complaint among the lower classes, that they cannot now, as they formerly did, buy their bushel or half bushel of wheat in the market, and employ the miller to grind it, but that they are compelled to purchase the flour already reduced. The millers then (and some of them pursue the same line now,) sent his horse round to collect the corn which he ground, and returned on the following day.

"This could not be done by the miller without incurring a considerable expence; which was ultimately repaid by the increased quantity of corn which he detained as toll. If he ground, as he then pretended, every one's bushel or peck of corn by itself, much delay was of necessity occasioned; and this delay again enhanced of necessity the price of grinding. The miller had then as good opportunities of mixing the flour as the dealer has now, and it will probably be found, that, whenever wheat has been comparatively dearer than other kinds of grain, the practice of mixing different sorts of flour, was almost as general formerly, according to the degree of temptation offered, as it has been in later times. Nor is this mixture to be deprecated in seasons of real scarcity; for when the quantity of wheat is not sufficient to afford the requisite supply, a better substitute is not to be found. We may justly lament the necessity, but we cannot arraign the propriety of the measure. As a dealer in flour, the miller now purchases a load of corn at once from the farmer, and he proceeds in its manufacture without interruption or delay. This enables him to supply his customers with flour on much lower terms than they could procure it, when the miller sent his horses at a considerable expence to collect the corn in small quantities, and again to return the flour by the same conveyance.

"The wives of the peasantry, it is true, frequently carry their pecks of wheat to the mill, and having waited to see it ground, bring back the flour, and thus seem effectually to guard against all imposition or fraud. But it often happens, that the miller is too much engaged, to grind it at the time when it is brought, and he may sometimes also postpone it with a fraudulent intention. But in every case, and without this expedient, he may impose upon them when present. On these occasions the old ladies will generally be found assembled in a group, attending to, and circulating the scandal of the day, and settling the affairs of the nation below, whilst the miller above stairs, takes away or exchanges a portion of their corn, as readily as Jonas and Breslaw could exchange a card in a pack."

ON THE CONSTRUCTION OF WATER CISTERNS.

IN many dry elevated situations where necessity obliges the farmer to make reservoirs or cisterns for holding water within the ground, the following method of forming them has been found effectual. In many cases they may be fed by rain water which falls upon the roofs of the buildings, and be conducted from thence by spouts. "In these cisterns a very ample supply of soft water is always at hand, and by their being under ground and kept close, the water is sweet and suitable to every domestic purpose.

"A cube of the required size being dug in the ground, and the sides made even and perpendicular, the bottom is to be covered with so much clay as that when well beaten it will be four inches thick, a foundation of stone is then laid round the sides; upon the clay a brick floor is laid in terras, the surface of which should not be lower than the top of the foundation; the sides are then built a single brick thick, and the bricks laid in terras, a foot space being left betwixt the wall and the earth which is gradually filled with clay in a soft state, and this is well beaten as it stiffens; the whole is arched over, leaving a hatch-way for a man to go in to clean it, and an opening into a drain for the surplus water to run off, when the cistern is full.

"The water is raised by a pump.

"As keeping all external air out of the cistern contributes much to the sweetness of the water, the pipe by which the cistern is fed should be continued to within a few inches of the bottom, and the surplus water should be carried off by a pipe rising from near the bottom to the extreme height the water is wished ever to be at, and there communicate with the drain; by these precautions there will be no more of the surface of the water exposed to the external air, than what is within those pipes and that of the pump."

 ENUMERATION OF PATENTS LATELY GRANTED
FOR NEW INVENTIONS.

October 7, **W**ILLIAM SIMPSON, of Liverpool, in the 1806. county of Lancaster, Millwright; for a new discovery or invention to be acted on by the impulse of wind, in order to work mills, pumps, and other machinery suitable to its application.

..... 23, Elihu White, of Threadneedle-street, in the city of London, Gentleman; for a method of making a

machine for casting or founding types, letters, spaces, and quadrates, usually made use of in printing. Communicated to him by a certain foreigner residing abroad.

October 30, John Prosser, of Back-Hill, Hatton-Garden, in the county of Middlesex, smith; for various improvements upon smoke or air jacks, which may be applied to those now in use.

..... 30, James Capern, of Leicester, in the county of Leicester, Brazier; for a machine for discharging smoke from smoking chimnies.

..... 30, Isaac Sandford, of the city of Gloucester, civil engineer, and Stephen Price, of the Strand, in the county of Gloucester, civil engineer; for a method to raise a nap or pile on woollen, cotton, and all other cloth which may require a nap or pile, as a substitute for teasels or cards.

..... 30, Robert Bowman, of Leith, manufacturer; for a method of making hats, caps, and bonnets, for men and women of whalebone; harps for harping or cleaning corn or grain, and also the bottoms of sieves and riddles, and girths for horses; and also cloth for webbing, fit for making into hats, caps, &c. and for the backs and seats of chairs, sofas, gigs, and other similar carriages and things; and for the bottoms of beds; as also reeds for weavers, &c.

November 6, Robert Vazie, of the parish of St. Mary, Rotherhithe, in the county Surrey, Civil Engineer; for improvements in the measures, and in the machinery to be used in making bricks and earthen-ware, and also improvements in the carriages for removing the said articles.

..... 6, James Royston, of Halifax, in the county of York, card-maker; for an improvement on the system of card-making, by a method of cutting teeth for carding of wool and tow.

..... 20, John William Lloyd, late of Brook-street, Grosvenor-square, in the county of Middlesex, but now of Bishop Wearmouth, in the county of Durham, Esquire; for anti-friction rollers or wheels to assist all sorts of carriage-wheels.

..... 20, James Henckell, of the city of London, Merchant; for certain improvements on a machine for dressing coffee or barley, or any other corn, grain, pulse, seed, and berries. Communicated to him by a certain foreigner residing abroad.

..... 22, William Nicholson, of Soho-square, in the county of Middlesex, gentleman; for various improvements in the application of steam to useful purposes, and in the apparatus required to the same.

CRITICAL CATALOGUE.

Communications to the Board of Agriculture, on Subjects relative to the Husbandry and internal Improvement of the Country, vol. 5, part 1, 4to. 12s. Nichols.

AMONG the various advantages which have resulted from the establishment of the Board of Agriculture, that of affording the medium of communication of useful facts and opinions, on the general subjects of husbandry, and political economy, is not by any means the least. Before its institution, there seems to have been no centre or point to which useful hints or discoveries, in these important branches of knowledge, could be properly directed. No ready or effectual mode of insuring them the attention of the public. From this cause it is, perhaps, partly owing, that the improvement of the former has advanced with so slow a pace, and the nature of the latter so little investigated or inquired into. But while we thus admit the great utility and importance of the Board, we cannot but think that much care and circumspection should constantly be exercised, in the admission of such facts and observations, as without much attention in this respect, it may retard rather than promote the object it has in view. It appears, indeed, in some degree, aware of this, from the advertisement which it has prefixed, guarding the reader against considering it as responsible, for the materials which it thus conveys to the attention of those who are interested in its discussions.

The justice and propriety of these remarks, are, we think, fully shewn, in the papers of the present part of the volume before us, which may be divided into two classes, those which relate to the immediate improvement of the soil, or the processes connected with it, and those which have a politico-economical tendency. The former certainly contain a portion of useful information, but the latter are much more interesting and important. We may, however, examine some of them a little in detail.

The first paper, contains "an account of the moss improvement, of John Wilkinson, Esq. of Castlehead, in Lancashire, by Sir John Sinclair, Bart. M. P." In this case, the spirited proprietor seems to have effected the improvement of a considerable tract of the less valuable kind of moss land, by the usual means of draining, liming, and proper cropping, but at great expence. And as bringing a large space of waste ground into cultivation, certainly deserves the thanks of the public. The improver cannot, however, be much benefitted by any novelty, in the methods of proceeding in the business, except it be in the use of *horse pattens* for the hinder feet of horses, in the first ploughings, while the moss is soft; of which representations are given in an annexed plate.

The third Essay, is on the "comparison of the expences of arable land, in 1790 and 1804," in which the enormous advance in the price of labour, in the latter period, is *forcibly* shewn. The state-
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ments which are drawn from different parts of the kingdom, clearly demonstrate the vastly increased expence at which the farmer obtains his grain, as well as green crops, and the impossibility of its being adequately repaid him, by the rises which have taken place in such products. Of course, that instead of a high encouragement being held out, for the culture of the principle article in the support of our population, the contrary is the case, the consequences of which are sufficiently evident.

The fifth Paper, "on the means of supplying milk for the poor," by John Christian Curwen, Esq. M. P. is highly valuable in many respects; besides supplying an useful article for the consumption of the poor, the experiments of the writer, have led to a variety of interesting facts, on the feeding of animals with green and other sorts of food, especially those of the cattle kind. Having fully enquired into the most usual modes of feeding dairy cows during the winter months, as well as the expences of them, in the vicinity of large populous towns, and finding them to be either with grains or hay, after making some pertinent remarks upon each, Mr. C. thus proceeds.

"Having no means of procuring grains, and the price of hay precluding the possibility of employing it in feeding milch-cows with any prospect of advantage, I was driven to the necessity of adopting some other method.

"On the first proposition for substituting green-food for the support of my dairy in winter, I was discouraged by a very prevalent opinion, that they could not be kept in condition, or health, on this food alone. I should most probably have declined the attempt, had I not witnessed the complete success of other experiments, as much at variance with received opinions and common practice.

"Having matured my plan, I determined, says he, to appropriate twenty-two acres of land, within less than a mile of a town containing eight thousand inhabitants, to its supply with milk, and the support of my other stock, during the winter months. I was in a great measure ignorant of the quantity of green food that would be required for each head of cattle.

"The ground was cropped with four acres of cow cabbages; six acres of common red turnip; two acres of Swedish turnip; one of kohlrabi; and nine acres of cole-feed. The milch-cows were turned out in good weather into a dry sheltered pasture of sixteen acres, which had been so hard stinted, as to afford them little or no food, but had the advantage of plenty of good water.

"In the beginning of April, 1804, the cabbages were transplanted; by this early planting, they have always succeeded better than those of my neighbours, which were later. The turnips were sown by the drill, in stiches at three feet distance, and the utmost attention paid to the cleaning of the whole, not only for their benefit, but for that of the succeeding crops. The turnips proved a failing crop in many parts, the other crops very good.

"The stock of cattle fed in sheds consisted of thirty-three; twenty-two milch-cows, eight of them had been spring calvers, the re-

remainder heifers. I notice this circumstance, to account for the apparent smallness of the quantity of milk afforded.

“ I was so circumstanced, as to be necessitated to dispose of the greatest part of my stock before my winter crop was exhausted; having no preparation to continue feeding them in the house during summer, nor any distant pastures of less value than the lands I occupied near to the town, to continue them for another season. Much of the success of the experiment depended upon the condition the stock should be in, to enable me to dispose of them early, and with little loss. I had eight three-years old heifers, intended to be kept for stock; a bull and four cows for fattening; and besides these, I wintered thirty-five head of Highland heifers, and sixty-five sheep.

“ In dry and moderate weather, the milch-cows remained out from ten o'clock till towards evening. From their being kept in open sheds, they were less sensibly affected by the cold. A greater degree of warmth is supposed to be favourable to their milking; but I do not believe, so kept, they would have been in equal thriving and healthy condition.

“ I found it advisable to make use of the cabbages first; they required much labour and unremitting attention to be freed from decayed leaves; and after frost, the difficulty is still greater. It is, however, indispensably necessary, to prevent the milk from being tainted.

“ The cabbages planted were the drum-head cabbage. I wish an equally weighty and more hardy kind could be obtained, that would stand the winter better, as the cost of cleaning and stripping the decayed leaves, tends greatly to reduce their value.

The common turnip followed; next the Swedish and kohlrabi; and last the cole-feed. This latter article of food I found to be most productive of milk, and it has the further advantage of standing till the end of May, by which time lucerne is fit to be cut.”

Here the writer offers a remark on the use of oil cake, which would be of much advantage to the dairy farmer, if the present high price of the article did not operate powerfully against it. He found by actual trials, that this substance when given to milch-cows, had the effect of not only rendering the milk considerably richer, without affecting its flavour, but of much increasing the quantity, and of keeping the stock in far better condition.

Having suggested these preliminary observations, we find M. C. beginning his useful labours.

“ My dairy, he adds, commenced the 1st of October 1804, and continued constantly supplying the town till the 18th of May 1805. As a part of the heifers were not purchased till late in October, and not all in milk till the middle of November, I have extended the period thirty days above the two hundred, to complete the period for the whole stock upon which the calculation of food is founded, which will exceed, some little, the two hundred days.

“ The time of milking in the morning was between six and seven; immediately afterwards a feed of cabbages was given, so long as they lasted. At ten o'clock, previous to turning out, two pounds

of oil cake each. In favourable days they had turnips in the pasture, with the tops and tails cut off; on returning to the sheds they were served with cabbages; between that time and four they were milked: this was followed by a second allowance of two pounds of oil cake each; afterwards a third feed of cabbages; and at six o'clock a foddering of straw from six to eight pounds.

"The labour of cutting off the tops and tails of the turnips was amply compensated for, by the advantage of feeding the wintering Highland cattle with them in preference to straw.

"The expense of green food does not stand the farmer in one halfpenny per stone; the tops and tails must be considered of still less value: while straw cannot be estimated under two-pence; notwithstanding the disparity of cost, there is still a greater difference in their nutrition. What I wintered as above, upon the refuse of green food, were in condition for killing two months earlier, and exceeded any of the same kind I ever had, both in weight of carcase and tallow, and brought from two to three pounds per head more than I had ever obtained before.

"The plan I have followed in estimating the profits upon the experiment, is, he says, in the first instance, to put a value upon the green crop, supposing it to be sold by the farmer to the milkman. I have afterwards, he observes, united the two profits. I may be supposed to have over-rated the cost as well as the value of the green crops; this, however, is matter of opinion, and must depend in a great measure upon situation. The cost of cleaning drilled turnips much exceeds the broadcast, yet I have no doubt whatever, the weight will amply compensate for the expense; and, when the drill husbandry is properly attended to, will greatly exceed the general estimate of fifteen tons per acre. I shall endeavour to ascertain this fact against another year.

"The apparent profit upon the milk, falls short of what I expected, and what I am confident it might and ought to have been, under proper management. It is sufficient, however, to encourage the hopes at first entertained of the practicability of the measure, and to determine me to proceed with the experiment.

"With the experience I have gained, I have, says he, no doubt I shall exhibit a very different result of profits in the next year's trial.

"Value of the green crop, upon a supposition of its being sold to the cow-keeper.

Twenty-two acres of green crop, at 10*l.* per acre £220 0 0

"Estimate of expense attending the raising of each green crop, with cleaning, &c.

Four acres of cabbages, at 12*l.* per acre £48 0 0

Two acres of Swedish turnips, at 5*l.* per acre 10 0 0

Six of common red turnips, at 4*l.* per acre 24 0 0

One of kohlrabi 5 0 0

Nine of cole seed, at 3*l.* 10*s.* per acre 31 10 0

118 10 0

Gain on the crops

£101 10 0

“ The improvements in the land and value of succeeding crops is supposed to be adequate to the rent and taxes.

Value of the land 40s. per acre.

Poor cess under 1s. 6d. in the pound.

“ Expense of feeding twenty-two milch-cows for two hundred days; each acre is supposed to produce 15 tons, or 2400 stones.

“ Allowing four stones of green food to each cow per day, for two hundred days, would require seven acres.

	L.	s.	d.
Seven acres of green food, at 10l. per acre	70	0	0
Four pounds of oil cake each, for 22 milch cows 200 days	69	8	0
Straw ditto, at 1d. per day ditto	18	6	8
Attendance, at 40s. per head	44	0	0
Interest on capital, valuing each beast at 13l. 8s.; expense of purchase 3s. ; 3l. 6s.	11	6	0
Risk and loss by resale, after the rate of 30s. per head	33	0	0
By profit of milk	47	2	8
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	293	3	4

“ Had the cows been tolerably well managed, the profits would have been double at least.

“ Money received for the produce of twenty-two milch-cows for two hundred days.

	L.	s.	d.
By milk, butter, and calves, sold	224	0	0
Two calves reared with milk	20	0	0
Supplying five persons in farm-house, at one quart each per day	4	3	4
600 carts of manure, at 1s. 6d. per cart	45	0	0
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	293	3	4

“ Oil cake is too costly to be given with advantage, except to cows in full milk.

“ The eight spring calvers so fed, at a cost of 26l. 13s. 4d. gave so trifling a quantity of milk, that three parts of this expense might have been saved, and made the profits above 60l. Six calves were lost, which was a further deduction of 12l.

“ It will appear obvious, from the sum charged for rearing two calves, that breeding cannot be attempted with a view to profit, where milk can be sold at 2d. per quart wine measure.

Expense of feeding stock upon fifteen acres of green food.

	L.	s.	d.
Estimated cost of 15 acres of green food, at 10l. per acre	150	0	0
Eight three years old heifers intended for breeding, fed with oil cake 4 lb. per day each	26	13	4
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	176	13	4

	L.	s.	d.
Brought forward	176	13	4
Three cows fattening, 7 lb. ditto per day each	16	13	4
Carting turnips to the above, and wintering stock	28	15	6
Interest on value of the above estimated at 400, expense of purchasing included	12	11	0
Gain upon stock	86	16	10
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	321	10	0
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“ Manure, from feeding with oil-cake, is of double the value of common cow-dung.

“ Gain upon sale of the stock on 200 days feeding.

	L.	s.	d.
Three cows fed 200 days, cleared 13l. each; cost of feeding 10l.; profit 3l.	39	0	0
Twenty wintering Highland heifers, cleared 3l. 10s. each; cost of feeding 1l. 10s.; profit 2l.	70	0	0
Fifteen fat ditto killed in six months, cleared 4l. each; cost of feeding 1l. 10s.; profit 2l. 10s.	60	0	0
Sixty sheep, cleared 10s. each; cost of feeding 6s.; profit 4s.	30	0	0
Eight three years old heifers, fed equal to milch-cows, supposed to make an advance of 10l.; feeding 7l.; profit 3l.	80	0	0
One bull, feeding 10l. supposed advance 5l.	15	0	0
300 carts of manure, at 1s. 6d. per cart	22	10	0
Half an acre of Swedish turnips for horses	5	0	0
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	321	10	0
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“ The feeding stock, after the rate of the three years old heifers, can never answer at the common prices of cattle.

“ Expense of attendance on milch-cows and other flock for 200 days.

	L.	s.	d.
Dairy maid's wages	5	0	0
Board wages	9	0	0
One man and horse for sale of milk, and leading green food, at 4s. 6d. per day	45	0	0
One labourer, at 9s. per week	13	10	0
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	72	10	0
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“ Cost of feeding milch-cows per day.

	s.	d.
4 stone of green food, at 1d. per stone	0	4
4 lb. of oil cake, at 1d. per lb.	0	4
3 lb. of straw	0	1
	<hr/>	
	0	9
	<hr/>	

“ The feeding cattle had 7 lb. of oil-cake, which made the expense of these 1s. per day. The dairy maid’s wages were wholly charged to the milk account, though by much the greater part of her time was employed in the farm-house. Some occasional assistance in milking was given, but by no means equal to what is overcharged to the dairy on her account.

“ Twenty pounds of butter were made per week, by which, I am very confident, I was a considerable loser. The skim milk was included in the butter account, and the quantity sold not ascertained. New milk was sold for 2d. per quart, wine measure; skim milk for 1d.

“ There were sold during the whole period 17,410 wine quarts; on an average 87 quarts per day. The demand was so great that the cart was met before it reached the town, and the whole disposed of, morning and evening, in little more than an hour.

“ The forward condition of my heifers made them sell early in the spring, and with less loss than I expected. I have estimated it at what I am told would be a fair average, one year with another. The price of cattle depends upon the season, and the quantity of fodder which remains on hand.

“ It was allowed by the dealers and others, there was no stock in the neighbourhood, however fed, that were in any thing like the condition of mine. To be able fully to ascertain and establish this fact, is to remove a very weighty objection to the plan. Supposing the profit of the farmer and milkman united.

	L.	s.	d.
Gain upon 22 acres of green crop	101	10	0
Ditto on milk 47l. 2s. 8d. Ditto on wintering stock 86l. 16s. 10d.	133	19	6
	235 9 6		

“ Had the whole been well conducted, the profit should, he thinks, have been 300l. out of which taxes, rent, &c. must be deducted.”

After these statements the able experimenter says:

“ Let us suppose thirty-three head of cattle to have been fed on hay, and that each consumed two stone per day; estimating the produce of an acre of hay at one hundred and sixty stone; at this rate it would have required eighty-two acres to have fed them 200 days, admitting the after-grass to have been adequate to the support of thirty-five head of Highland heifers, and sixty sheep for the like space of time. If I am correct in this calculation, there will be found a clear gain to the public of sixty acres of land in the feeding of this trifling stock.

“ A moderate acre of green food, is supposed to produce 15 tons, or 2400 stone; but, with the drill husbandry, I conceive the weight will be considerably greater. After the rate of four stone per day, an acre would supply food for one beast for 600 days. At the rate of two stone of hay per day, it would require seven acres and a half, but say seven, allowing the half acre for the straw likewise

given. We ought, in striking the balance in favour of green crops, to take into the account the impoverishment of the ground by hay, and the improvement by green crops. The drill husbandry, under judicious management, is the best mode of improvement, and might be alternately practised with green crops till the end of time.

“ I should suppose that green crops, upon a comparative scale of feeding with hay, may be stated at seven to one.

“ The expense attending the making and getting of hay is, in many parts of the kingdom, very great, and liable to much disappointment, both as to quantity and quality. There are many chances in favour of green crops, from being sown at different seasons, and, in case of failure, the being able to renew them.

“ The advantages of feeding with green crops, are the saving of rent, and the profits of a great stock upon a little ground. As some deduction from this may be stated, the additional buildings which would be required, but this would be trifling, and bear no proportion to the profits.

“ Potatoes and carrots, &c. will exceed seven times the comparative feeding of hay; and both these crops have the further advantage, they may be conveyed by water carriage from districts where rents are from 15s. to 20s. per acre, to where five or six pounds are paid, and labour proportionably high.

“ What encouragement does this hold out for the improvement of lands distant from populous towns, that have the advantage of water carriage!

“ Summer soiling, in comparison with grazing, will equal, if not exceed the proportion of seven to one, besides the almost incalculable advantage of preserving the manure.

“ I cannot, says he, omit stating the great profit of carrots. I have found, by the experience of the last two years, that where eight pounds of oat feeding was allowed to draft horses, four pounds might be taken away and supplied by an equal weight of carrots, and the health, spirit, and ability of the horses to do their work, perfectly as good as with the whole quantity of oats. With the drill husbandry and proper attention, very good crops of carrots may be obtained upon soils not generally supposed applicable to their growth. Under proper management an acre of carrots I conceive to be worth fifty pounds.

“ A saving of sixty acres of land in a farm of six hundred, in the feeding of cattle alone, opens a wide field for speculation. The retrenchment of a tenth, with a gain to the public of the means, if applied to the growth of corn, of supporting in bread one hundred and eighty persons, cannot fail of calling forth serious reflections, and challenging attention to the important advantages which might be drawn from the general adoption of this system.

“ However great and desirable the object of supplying milk to the poor, we lose sight of it in contemplating the prosperity and happiness that would result to all ranks of the community, from being enabled to produce sufficient grain of British growth, not only

to feed our present population, but to supply the means of providing for a considerable addition to it.

“ Is it possible, says he, to contemplate the saving of sixty acres of land in feeding so small a stock, without being struck with the powerful resources which the public as well as individuals, have in their power to draw from the adoption of such a plan upon an extensive scale?”

And in addition to the saving made in the feeding of cattle, the author remarks, that there are annually, forty acres or upwards of potatoes, planted upon the same farm for feeding of horses, and given as a substitute for hay. “ An acre of potatoes, he says, produces on an average, fourteen hundred stone; two stones of steamed potatoes mixed with cut straw, are given daily to each horse: thus an acre of potatoes produces food for one horse, for seven hundred days. Computing one hundred and sixty stones of hay to an acre, and allowing only a stone and a half to be given per day, with a small abatement for waste, an acre would, he says, feed one horse for a hundred days; the scale of comparison, therefore, in feeding, between potatoes and hay, will be as seven to one.” And that “ agreeably to this calculation, forty acres of potatoes are equal, in point of feeding horses, to two hundred and eighty of hay, and have the further advantage that, under proper management, the wheat after potatoes will not be inferior to a fallow.” Of course, that “ by this system of tillage in a farm of six hundred acres, a saving is made of three hundred and forty acres, above one half of the whole; which, supposing it were cropped with wheat, would supply bread for the consumption of above a thousand persons. There were likewise cultivated upon the same farm, he says, four acres of carrots, which, in feeding horses, equalled thirty acres of oats.” Pursuing this idea, the intelligent writer says, that besides the stimulus arising from individual emolument derived from this system, he has been strongly impelled to an extension of it, from the decided opinion he has long entertained, that nothing could contribute so essentially to the welfare and security of the empire, as being enabled to raise a sufficient quantity of grain for our support, and thereby to emancipate us from our dependance upon foreign aid.”

He much deploras the circumstance of the late pressing scarcity of grain, not leading to the immediate inclosure of all the waste lands in the kingdom, in which we, from a full conviction of its necessity, cordially join him.

“ Independant, however, of eight millions of acres of wastes, which are supposed still to remain, and from which little profit is derived, I conceive it to be not only feasible but perfectly practicable, by a change of system, and adopting a plan of feeding horses and cattle in houses and sheds, (both summer and winter) to make such a saving of land as would accomplish this desirable object. Each acre so employed, as I have endeavoured to show, might be made to produce seven times the quantity of food raised from an acre of hay or pasture. The advantages derived from green crops, upon the present narrow scale, must be considerable: in what state would the

agriculture of Norfolk and Suffolk be without them? Supposing the green crops in Great Britain to amount annually to a hundred and thirty or forty thousand acres, this would add a sixteenth part to the whole provision of the cattle and sheep.

“Assuming, says he, the calculation to be sufficiently accurate for my purpose, which supposes England and Wales to contain about forty-eight millions of acres, and that twenty-one of these are under pasture for horses and cattle; I conceive a million and a half of acres might be taken from the lands in pasture, and brought under rotative crops, in aid of what is so applied at present.

“I cannot entertain an apprehension, with the capital possessed by Great Britain, that any serious inconvenience could result to our general commerce, by the appropriation of such a sum as might be necessary to bring the lands so taken into cultivation; though I have heard such arguments gravely urged as an objection to a general inclosure. I should have no doubt of the means, and as little of the spirit of enterprise, provided it was clearly ascertained that the capital so employed would be equally profitable with other branches of commerce. To procure, in the first place, the additional number of hands that this extended cultivation would require, might be attended with some difficulty; but should the consequences of the encouragement given to agriculture prove a temporary check to our increasing manufactories, or even lessen the number of hands now so employed; so far, in my humble opinion, from its being injurious to the interests of the empire, I believe it would be found to promote them. I do, however, apprehend the hands necessary might be found without any interference with trade. Might not numbers of industrious hands be procured from the Highlands of Scotland, who, wanting employment, are obliged to emigrate to America? Numbers also might be drawn from Ireland, without any injury to its present state of agriculture and commerce. Should it cost the public half a million, to settle the persons so collected in villages in different parts of the kingdom; could such a sum be better employed? the bounties of a few months would soon be swelled to a larger amount.

“The increased demand for labour, with the means of subsistence at a *reasonable* rate, would, in a very short period, produce an increase of population to answer all purposes.

“The number of useful hands (by this means added to the population of the empire) would prove a powerful acquisition of strength. Can there be a more cogent argument in favour of growing the grain requisite for our own consumption? were all other considerations balanced, is not this one abundantly sufficient to decide upon the wisdom and policy of our attempting it? Under our present circumstances, one million of British subjects depend upon foreign countries for the means of their subsistence. In the course of time, when the north of Europe and America shall have made a further progress in manufactures, what is to become of that part of our population which is supported by them? If it be more advantageous to be a nation of manufacturers, than cultivators of ground, what country will continue to pursue agriculture for the benefit of another? If the

example of Great Britain, in her predilection for manufactories in preference to agriculture, operates on other countries, the period is not distant when these supplies may be supposed to fail us. An alteration has been attempted in this system, and much appears to depend upon the firmness of parliament, whether it shall be persevered in, and encouragement be given for the growth of British grain; or whether popular clamorists shall prevail and defeat it, by acting upon the feelings of the moment; blind to every prudential consideration; regardless of future consequences; ignorant and insensible of our growing dependance on foreign countries for a very considerable portion of our daily-bread."

To be concluded in our next.

H I S T O R Y

OF

Agriculture.

Smithfield Cattle-Shew.

ON the 10th of December in the morning, the fat cattle, sheep, and pigs, sent in from various parts of the country, as candidates for the prizes offered by the Smithfield Club, for encouraging the economic feeding of animals intended for the London market, began to arrive at Mr. Sadler's Repository-yard, in Goswell-street; to which place, the shew was this year for the first time, removed.

Mr. Giblett, one of the Stewards, was in attendance (in the absence of Mr. Arthur Young, the Secretary) for receiving the certificates of the ages, breeds, time of putting to fat, kind and quantity of artificial food eaten (if any) by each animal, and other particulars, without which formalities none are admitted to the yard.

After nine o'clock on Thursday morning the 11th, no more cattle were admitted, as candidates for the prizes, but the yard was shut up, in order for the judges of the show to enter on their examination of the certificates and animals: as in former years, the judges were composed of three gentlemen graziers, viz. Lord Somerville, Robert Byng, Esq. and Richard Astley; and of two eminent London butchers, viz. William Lambert, and Robert Ayres. These gentlemen spent the whole of the day nearly, in a critical examination of the cattle, sheep and pigs, in comparing the circumstances certified respecting them, and before they parted, signed their award of the prizes.

On Friday morning the 12th, the yard was opened for publicly shewing the prize cattle, and other stock exhibited, in consequence of the premiums offered by the Smithfield Club, of Noblemen, Gentlemen, and Farmers, associated for the laudable purpose, not of encouraging the feeding of wastefully fat animals, but of encouraging the introduction to the great London market, of animals which have been well and sufficiently fattened, with

the greatest possible attention to early maturity, and quick and cheap feeding: these being the only rational sources, from which a decline in the prices of butchers meat, or even their remaining at their present rate, can be hoped for, under the circumstances of an increasing consumption of animal food. Mr. Sadler's premises were found abundantly commodious for the purpose, and being wholly covered in, and yet affording sufficient light for the examination of the cattle; at the heads of which, labels were affixed, announcing the prizes, and other useful matters of information; the particulars, relating to Mr. Pickford's cattle and sheep, were more full and explicit than the others, owing to the laudable endeavours of that spirited improver, for giving to the public every requisite information respecting the breeds, ages, feeding, &c. of his animals. The cattle exhibited were, in

CLASS I.—For Beasts of 160 stone weight, or upwards, that have been worked two years in a team, and since fattened, on any food except corn.

Mr. John Westcar, first prize, of twenty guineas, for a Hereford ox, fed on oil-cake.

Mr. Paul Pell, a half-bred, long and short horned ox, cake fed. This animal was thought by some to be, perhaps, the very best ox ever exhibited to the Club; but, owing to its not having been worked the required time it would not, according to the conditions of the show, be admitted a candidate for the prize.

Mr. John Westcar—a Hereford ox, cake-fed. This animal, belonging to the same gentleman who gained the first prize, could not, according to a very proper rule with the Club, be admitted to claim the second prize, and which, therefore, was not adjudged to any one.

CLASS II.—For Beasts of 140 to 160 stone, grafs-fed, without corn or cake.

Mr. John Westcar, the first prize, of twenty guineas, for a Hereford ox.

Mr. John Edmonds, the second prize, of ten guineas, for a Hereford ox.

Mr. Jonathan Chater, a Hereford ox.

Mr. Thomas Pickford, a polled steer.

Mr. John Edmonds, a Hereford ox.

CLASS III.—For Beasts of 100 to 140 stone, grafs fed, without corn or cake.

Mr. Samuel Chandler, the first prize, of twenty guineas, for a Devon ox.

Mr. John Westcar, the second prize, of ten guineas, for a Hereford ox.

Mr. Edmund Waters, two Devon oxen.

Mr. John Terret, a Hereford ox.

Mr. John Pickford, a Hereford steer.

CLASS IV.—For steers under four years old.

Mr. Samuel Chandler, the prize, of ten guineas, for a Devon steer, cake-fed.

Mr. John Westcar, a Hereford 3-year old steer, ditto.

Mr. Henry King, jun. an Irish steer, grafs-fed.

Mr. John Terret, a Hereford steer, ditto.

Mr. Thomas Pickford, a Hereford, ditto.

CLASS V.—For fat cows, which have borne three or more calves, fed without corn.

Mr. Joseph Lucas, the prize, of ten guineas, for a short-horned cow, cake-fed.

Mr. John Westcar, a dun cow, ditto.

Lord William Ruffel, a Devon cow, ditto.

Mr. John Humphris, a long-horned cow, grafs-fed.

CLASS VI.—For one-year old long-wool'd wether sheep, three of one man's breed, fed without corn or cake.

Mr. Anthony Lechmere, the prize, of ten guineas, for three sheep.

Rev. Mr. Thomas Plasket, three sheep.

CLASS VII.—For two-year old long-wool'd wether sheep, three of one man's breed, fed without corn or cake.

Mr. John Edmonds, the prize, of ten guineas, for three sheep.

Mr. John Westcar, three sheep.

Mr. Humphry Tuckwel, ditto.

Mr. R. M. Robinson, ditto.

Mr. John Humphris, ditto.

Mr. Richard Hiron, ditto.

Mr. George Inskip, ditto.

Mr. Robert Masters, ditto.

CLASS VIII.—For one-year old short-woolled wether sheep, three of one man's breed, fed without corn or cake.

None shewn!

CLASS IX.—For two-year old short-woolled wether sheep, three of one man's breed, fed without corn or cake.

Mr. Henry King, jun. the prize, of ten guineas, for three South Downs; there being no competitor.

CLASS X.—For fat pigs, not exceeding two years old.

Mr. George Dodd, the prize, of ten guineas, for a Suffolk pig, twenty-three months old.

His Royal Highness the Duke of York, a Spanish and Chinese pig, under twenty months old.

Mr. James Butler, a pig, eighteen months old.

Mr. John Humphris, a pig, twenty two months old.

CLASS XI.—For fat pigs, not exceeding one year old.

His Royal Highness the Duke of York, the prize, of ten guineas, for a Spanish and Chinese pig, under ten months old.

Besides the above, several animals were exhibited, which for want of sufficient certificates, or there being no prizes offered for such, could not come in competition with the above prizes, viz.

Lord Baggot, a fine large half-bred, light-coloured ox;

Mr. Henry King, jun. a Devon ox;

Mr. Robert Harvey, a long-horn'd cow;

Mr. Thomas Pickford, a black and white heifer;

Mr. Robert Masters, a Scotch ox;

Mr. Joseph Joyner, two ditto;

Mr. Thomas Pickford, three two and three-year old half-bred long-woolled wethers.

Mr. Montague Burgoyne, two pigs; and

Mr. James Reed, a China and Suffex pig, not nineteen weeks old; this surprising pig came into the yard after the Judges had finished their adjudication of the prizes.

The Noblemen, Gentlemen, Breeders, Graziers, &c. &c. interested in the breeding, feeding, and sale of Cattle, who attended the Shew, were very numerous, and they seemed on the whole amply gratified.

A basket of remarkably fine and large Swedish Turnips were exhibited by Mr. Thomas Pickford, grown on land, within a few years past in a state of waste, near Market-street, Herts. Another basket of these useful roots, nearly equal in perfection, were exhibited from Lord Mansfield's farm at Caen Wood. These Turnips were greatly admired by the Agriculturists present. Among the notices interesting to Farmers, which were stuck up at the place of Show, we noticed, a very judicious alteration announced by Lord Somerville, in the conditions of his ensuing Spring Shew (at this place on the 2d and 3d of March) limiting the prizes for fat wether short-wool'd sheep, to such as do not weigh above 25lb. per quarter of mutton, and allowing the Grazier as well as breeder of such sheep exhibited, to be can-

didates for the prizes: Mr. Fletcher's prepared gypsum was recommended, as a cheap and portable top-dressing for crops of corn and grass; and Mr. Farnham, (the gentleman who sells his Majesty's Spanish sheep) gave notice of some Merino sheep, belonging to a gentleman, deceased, which will shortly be sold.

After the company had left the Shew-yard this day, a meeting took place at Freemason's Tavern, of the members of the Smithfield Club, when several new members were elected, viz. Colonel Thomas Richard Beaumont, Robert Harvey, — Allen, Robert Tubbs, John Plomer Clarke, Samuel Kendal, Cullen Smith, William De Ground, William Lambert, and Robert Ayres. A letter from Mr. Arthur Young being read, tendering his resignation of the offices of secretary and treasurer to the Club, Mr. John Farey was elected secretary, and Mr. Giblett, treasurer. After which, about thirty gentlemen of the Club dined together, Lord William Russell in the chair.

On Saturday and Monday, the 13th and 15th, Mr. Sadler's Repository-yard was crowded with amateurs and gentlemen concerned in the breeding, rearing, fattening, and sale of Cattle in the London markets. Messrs. Gibbs and Co. exhibited some fine specimens of Kohl Rabi, or Hungarian turnip-cabbage, which were much admired. In the free discussion and expression of opinion, which is common at these meetings, some gentlemen were on Monday heard expressing their doubts, of the propriety of the decisions of the judges, in one or two cases; when such were, however, reminded by the bye-standers, that the object of the Club, in offering premiums, is not to collect the most perfect animal, either for shape or fatness, which could possibly be produced; but to encourage the exhibition of such animals as have improved the most, in proportion to the food consumed by them, the objectors liberally admitted, that it was impossible to form a correct judgment, without an examination and comparison, of the certificates which accompanied each animal.

About four o'clock, a meeting of the Club took place at Freemason's Tavern, Lord William Russell in the chair; when the following noblemen and gentlemen were balloted for, and admitted members of the Club, viz.

Earl Thanet, Sir Henry Lippencot, Stephen Thornton, William Francis Woodgate, William Ford Burton, and John Billingsley.

About five o'clock, near five hundred noblemen, gentlemen, and graziers, sat down to a very excellent dinner in the Freemason's-Hall;

Lord WILLIAM RUSSELL in the Chair.

James Backwell Praed, Esq.; and Mr. Paul Giblett, the Stewards.

After the cloth was withdrawn, his Lordship gave—"The King; Good Breeding; The Fleece; The Duke of Bedford; The Plough; Small in size, and great in value; Mr. Coke; Earl Winchelsea."

His Lordship then rose, and read the adjudication of the prizes, as we have already stated them; and added, that on account of the Herefordshire breed of Cattle having so uniformly of late, borne off the prizes offered by the Club, it was in future intended, and he was happy that the funds of the Club admitted of it, to alter and increase the premiums, by offering separate prizes for the best ox or steer shewn, of each of the following breeds, viz. Herefordshire, long-horned, short-horned, Sussex or Kent, Devonshire, and any Mixed Breed, not weighing less than 120 stone. An additional premium to the owner of the best ox or steer, of any of the breed shewn as above; and, for the best ox or steer of any breed, under 120 stone, either worked or not, but fed without cake or corn. These alterations were greatly applauded.

After his Lordship had sat down, Lord Somerville rose, and proposed the health of "Lord William Russell," which was drank with three times three.

A proof engraving of the late Duke of Bedford, by Mr. Lane, was handed round the room for the inspection of the company.

The Chairman then gave—"The Farming Society of Ireland; Earl Bridgewater," &c. &c.

That hilarity and amicable discussion on agricultural subjects, which never fails to take place, when ingenious and practical men meet over a bottle of good wine, was kept up till a late hour, before the company parted.

On Tuesday the 16th, a meeting of the Club took place at Freemason's Tavern, Lord William Ruffel in the chair, when it was resolved (instead of electing four Vice-Presidents, as had been intended) to request Lord William Ruffel to continue to act as Chairman to the Club, during the absence of the Duke of Bedford, to which his Lordship obligingly consented.

The following gentlemen were then balloted for, and admitted members of the Club, viz. Sir William Wake, G. B. Prouse, — Harris, Hugh Hoare, jun. John Martin Webber, James Adams, Peter Green, Samuel Chandler, Joseph Lucas, Eagles Godfrey Blake, James Leader, George Leybourn, Simon Payne, John Farnham, and Thomas Gibbs.

Eleven gentlemen were nominated for judges of the next Shew, and the Secretary was directed to write to them, and learn, whether they are willing to serve, if chosen at the next meeting.

Resolved, That the premiums and conditions, for the ensuing Christmas Show, on Friday, Saturday, and Monday, the 11th, 12th, and 14th of December, 1807, be as follow, viz.

CLASS I.—For oxen or steers of the Herefordshire breed. To the owner of the best ox or steer, of the weight of 120 stone or upwards, twenty guineas.

See the general conditions following Class VI.

CLASS II.—For oxen or steers of the long-horned breed. To the owners of the best ox or steer, of the weight of 120 stone or upwards, twenty guineas.

CLASS III.—For oxen or steers of the short-horned breed. To the owner of the best ox or steer, of the weight of 120 stone, or upwards, twenty guineas.

CLASS IV.—For oxen or steers of the Suffex or Kent breed. To the owner of the best ox or steer, of the weight of 120 stone or upwards, twenty guineas.

CLASS V.—For oxen or steers of the Devonshire breed. To the owner of the best ox or steer, of the weight of 120 stone or upwards, twenty guineas.

CLASS VI.—For oxen or steers of any mixed breed. To the owner of the best ox or steer, of the weight of 120 stone or upwards, twenty guineas.

Also, an additional ten guineas, to the owner of the ox or steer, which the judges shall esteem the best exhibited, in the above six classes.

As general conditions of all the above six classes, it is required, that the beasts sent in claim of the above premiums, have been worked at least two years, ending the 11th of October, 1806; that they have not been put to fatten previous to that day; that no cake or corn be given previous to the 1st of September, 1807; that the whole of the food consumed, from the 1st of October to the 30th of November, 1807, be certified: it is also required, that the breed of each beast be named; that the time of putting to feed, and the state of the flesh at the time be certified, under the attestation of two respectable witnesses of the facts.

CLASS VII. For oxen or steers of any description, under the weight of 120 stone. To the owner of the best ox or steer, ten guineas.

Beasts sent in claim of the premium in this Class, are not expected to have worked, but must be fed without cake or corn; and, the time of putting to feed, and the state of the flesh at the time, must be certified.

CLASS VIII. For cows, which have borne three calves at the least. To the owner of the best fat cow, ten guineas.

Cows sent in claim of the premium in this Class, must have calved in the year 1806 or 1807; the time of their last calving, and the time when dried, to be certified; they must not have been put to fatten previous to the 1st of January, 1807; the time of putting to feed, and the state of the flesh at the time, to be certified.

CLASS IX.—For one-year old long-woolled wether sheep. To the owner of the best pen of fat wethers.—Ten guineas.

See the general conditions following, Class XII.

CLASS X.—For two-year old long-woolled wether sheep. To the owner of the best pen of fat wethers.—Ten guineas.

CLASS XI.—For one-year old short-woolled wether sheep. To the owner of the best pen of fat wethers.—Ten guineas.

CLASS XII.—For two-year old short woolled wether sheep. To the owner of the best pen of fat wethers.—Ten guineas.

As general conditions of the four last classes; the pens of sheep sent in claim of the above premiums, must each contain three wethers, of one man's breed, and they must have eaten no cake or corn; these facts to be certified.

CLASS XIII. For pigs under two-years old. To the owner of the best fat pig, ten guineas.

See the general conditions at the end of the next Class.

CLASS XIV. For pigs under one-year old. To the owner of the best fat pig, ten guineas.

As general conditions of the two last classes, the pigs sent in claim of the above premiums, must have their exact ages certified, and the sort of food consumed by them, in the three months preceding the show; both of these premiums not to be gained by one pig.

Resolved, That every beast, sheep, and pig, intended as a candidate for the premiums, be sent into the show-yard, before nine o'clock on the morning of Thursday, the 10th of December, 1807; and that the judges of the show be allowed the whole of that day, without the admission of strangers, till the adjudication is settled, in order that due attention may be paid to the certificates.

Resolved, That the following be the instructions to the judges for the show of 1807:

You are desired to decide, which is the best beast and sheep in each class, having regard in forming your judgement, to quality of flesh, lightness of offals, and time of feeding; also, to the early maturity in sheep and pigs; and likewise in cattle, if not worked. To require, that the certificates be answerable to the requisitions of this advertisement. The owner's certificate of feeding to be evidence, if not contradicted by counter-evidence; in which event, to determine on the case from the circumstances of it; but without reference in the adjudication; your decisions as to the breeds and live weights of the animals to be final; and, that no premium be adjudged in any case, where there shall not appear to be sufficient merit to deserve it.

Resolved, That no cattle, sheep, or pigs, be admitted as candidates for the premiums, the owners of which do not consent, that the club shall have a particular return made, of the dead-weights of offals and quarters, immediately on the animals being slaughtered and weighed; and the Se

cretary is authorized, to retain the order on the Treasurer, Mr. Giblett, (Butcher) No. 138, New Bond-street, for payment of any premium, until such particulars are furnished to Mr. John Farey (Land-Surveyor and Agent), No. 12, Upper Crown-street, Westminster, in order to their being by him laid before the public. These particulars of the late shew, we are promised, for insertion in our next Number.

Resolved, That no cattle, sheep, or pigs, be received into the show-yard, without certificates delivered with them, (not mixing the particulars of animals in different classes in the same paper) sealed up, and directed to the judges for the year: and that no more than two beasts or pigs, or one pen of sheep, in any one class, belonging to the same person, be allowed to enter the show-yard.

Resolved, That Robert Byng, Esq. and Mr. Henry King, Jun. be appointed Stewards for the ensuing show, and annual dinner. These gentlemen have obligingly accepted the appointment.

Resolved, That bills be printed of the premiums, and sent, as in former years, to all the Members of the club.

Adjourned to the second day of Lord Somerville's Spring shew of cattle, March the 3rd, at the Free-mason's Tavern, at three o'clock.

For the convenience of Graziers and Farmers who attend Smithfield market, the printed conditions and premiums of the next shew as above are left with, and may be had of, Mr. Mitchell, Draper, No. 7, Cloth Fair, West Smithfield.

Leicestershire and Rutlandshire Agricultural Society.

AT a Meeting of the Committee of this Society, held at the George Inn, in Oakham, on Thursday the 27th of November, 1806.

Present. Col. Noel, M. P. V. P. in the Chair.

Edwyn A. Burnaby, Esq.	Col. Crump,
Robert Kirk, Esq.	Mr. Watkinson,
Mr. Chapman,	Rev. Mr. Swann,
Mr. John Burges,	Mr. Rudkin,
Mr. Hose,	

The following Premiums are proposed to be offered for the year 1807:—

To the person who shall produce the best estimate of the comparative advantage between the use of oxen and horses, in husbandry work; twenty-five guineas.

To the person who shall make the best comparative experiment between the effects of fresh dung and rotten dung, arising from the same species of animal and forage, upon grass land within one year; the extent not being less than one acre for each kind of dung; ten guineas.

N. B. Dung not to be considered as fresh after the third day.

To the person who shall on the day of the annual meeting for 1807, produce a pen of five of the best fat shear-hogs, to have been fed with grass, hay, or roots, and not to have had corn, or cake; ten guineas.

For the second best pen of the same; five guineas.

For a pen of five of the best two-year old wethers; ten guineas.

For the second best pen of the same; five guineas.

For a pen of five of the best fat shear-hogs that shall have been bred and kept on natural grass alone, respect being had in this, as also in the preceding classes, to the quality and quantity of the mutton, as well as to the quality and quantity of the wool; ten guineas.

For the second best pen of the same; five guineas.

For a pen of five of the best two-year old weathers; ten guineas.

For the second-best pen of the same; five guineas.

For a pen of five of the best ewes, to be shewn at the annual meeting for

1807, which shall have produced and reared lambs at two years old, and the following year, the lambs not being taken from the dams until Midsummer (old stile) in each year, to have been fed with grass, hay, or roots, but not to have had corn, or cake; five guineas.

For a pen of the same number of ewes which shall have been kept on natural grass alone; five guineas.

For the best conducted experiment for ascertaining the relative profit of different breeds of sheep, in wool and carcase, strict attention being paid to the quantity of food each breed has consumed; the weight and value when put to feed and when taken off, being specified, and to have been fed with artificial food, (with the exception of corn and oil cake;) ten guineas.

For the second-best experiment; five guineas.

For the best conducted experiment for ascertaining the relative profit of different breeds of sheep in wool and carcass, the same attention being used in this as in the last class to ascertain the quantity of food consumed, the weight and value of the animals when put to feed and taken off; to have been bred and kept on natural grass alone; ten guineas.

For the second best experiment of the same; five guineas.

Note. These Premiums will not be allowed unless the experiment in every case has extended to at least five shear hogs of some distinct breed.

For the best ox under three-years old, the time when calved being ascertained as nearly as may be; six guineas.

For the second-best ditto; four guineas.

For the best ox under four-years old; five guineas.

For the second best ditto; three guineas.

(To have been fed with grass and vegetables.)

For the best ox that shall have been worked from three-years old off, to six-years old off, or longer, the age being specified; eight guineas.

For the second-best ditto; four-guineas.

(To have been fed with grass and vegetables, or oil cake, but in case the latter has been used, an account of the quantity consumed to be produced.)

To the person who shall make the best experiment and shortest report on the practical effects of lime upon the various sorts of land, twenty guineas.

To the person who shall state the best manner of forming compost dung-hills, mentioning their materials, quantity and place; five guineas.

For the best conducted experiment ascertaining the relative advantages to be derived from soiling, or grazing cattle in the usual way; ten guineas.

The same experiment for sheep; ten guineas.

To the person who shall have cleared not less than five acres of land from Ant-hills within one year, in the most effectual manner, the expence being stated to the committee, and it being understood that no premium will be allowed without proof of the efficacy of the measure for three years; twenty guineas.

The following premiums are proposed to be offered for Servants.

To the person having had the care of sheep to be exhibited for the premiums that shall appear to have rendered the most effectual service to his Master, in the capacity of a shepherd; three guineas.

The claim for this premium to be accompanied by a Testimonial from the master, as to the good conduct of the man, which testimonial is to state the number of sheep under such Servant's care, the number of lambs reared, and other circumstances connected with such Servant's duty, so as to enable the committee to form a correct judgement of his merit.

To the man that shall make the experiment as to Dung, for which a premium shall be obtained; one guinea.

To the servant that shall be employed in the working of horses and oxen husbandry work, on which a premium shall be awarded; two guineas.

At this meeting, Lord Robert Manners and the Rev. P. Story were unanimously elected members of this Society.

In compliment to the services rendered by Mr. Cooke, in his office of Secretary, it was unanimously resolved that a piece of plate of twenty guineas value, (which Col. Noel the chairman is requested to procure) be presented to him.

Adjourned to Tuesday the 23d day of December 1806, then to meet at the White Swan Inn, in Melton Mowbray, where the company of every individual of the committee is earnestly requested at twelve o'clock.

G. N. Noel, Chairman.

Col. Noel having left the Chair, the unanimous thanks of the meeting were voted to him for his unremitting attention to the prosperity of the landed interest, by encouraging the improvement of the Agriculture of the united counties of Leicester and Rutland.

FAIRS AND MARKETS.

At Andover fair, there was a great number of sheep penned for sale, and most of them were sold. South-down ewes fetched from 30s. to 34s. and lambs of the same breed from 24s. to 28s. per head. The horned sheep were not quite so dear as at the late Appleshaw fair. On Tuesday, there was a great supply of cheese; new sold from 54s. to 60s. and old from 70s. to 76s. per cwt. Hops advanced considerably in price.

At Whichbury fair, Wilts, sheep sold from 31s. to 45s. per head. There was a plentiful supply of pigs at the fair, with horses, cows, &c. which sold in general well, at least those that were in good condition; but there was no sale for bad horses.

Show of Sheep.

At Hythe Fair, Kent, on the 1st of December, the sweepstakes for two year old wether sheep, of the greatest dead weight, were attained in moieties by a new Leicester sheep, belonging to Mr. Rolle, of Romney, and one of the Kent breed, belonging to Mr. Hughes, of Mersham. Mr. Rolle's Leicester sheep weighed 129lbs. and had 17lbs. and a half of fat. Mr. Hughes's weighed 140lbs. and had 28lbs. and a quarter of loose fat, while the live weight was only 218lbs. The whole sweepstakes for the one year old wether sheep, was adjudged to Mr. Barker's, of Willesborough, as possessing the best form, together with the greatest dead weight, it weighing 108lbs. with 12lbs. and one third of fat. Two others were likewise shewn; viz. Mr. Whitfield's, weighing 105lbs. with 13lbs. of fat; and Mr. E. Hughes's of 105lbs. with 14lb of fat.

Ledbury fair, on Monday was well attended. The show of cattle was good and the sale brisk, sheep and pigs sold well, and horses went high. Cheese, best making, sold from 63s. to 67s.; and two meal, from 51s. to 56s. per cwt.

The Christmas horse show, held last week at York, was well attended; good hunters fetched large prices, as did also horses for the army; but coach horses were in no demand. There was a very large show, and a great many remained unsold.

MISCELLANIES.

Ploughing Match.

On Monday, the 15th of December a ploughing match took place, on the farm of Mr. Newman Harley, King's Langley, Herts, between the old Hertfordshire plough, belonging to Mr. Jonathon Wood, of Bovington, and the new Hertfordshire plough, belonging to Mr. Cooper, of King's Langley. The first trial took place on an old saintoin ley, very strong, and had not been ploughed for ten years; the other, on a wheat stubble of tender soil; when the umpires declared their opinion to be de-

cidedly in favour of the new Hertfordshire plough, not only in point of workmanship, with which there could be no comparison, but also in the very important consideration with farmers in general, requiring the least draught of horses. The persons chosen to decide were: Mr. Palmer, of Watford; Mr. Johnson, of Bovingdon; and Mr. Cock, of King's Langley.

Last week, Thomas Bennett, servant in husbandry to Mr. W. Johnham, farmer, of Stanton, in Suffolk, was convicted before a Magistrate of neglecting to perform his contract for threshing barley in a workman-like manner, he having left so much of the said barley in the straw, that two men in four days, threshed out of the same, three combs of corn.—For this offence he was ordered to be imprisoned and kept to hard labour, in the house of correction, for two months.

On Sunday last, in the night, some malicious person unknown, killed a horse, and mortally wounded another, the property of Mr. William Robinson, grazier, of East keal, Lincolnshire.—This diabolical act is supposed to have been committed in consequence of Mr. Robinson having assisted in securing some goods, supposed to be stolen by two persons who were lately transported from the General Quarter Sessions, holden at Spilsby.

Athletic Exercises.

Sir John Sinclair, who so actively devotes his time and talents to disquisitions calculated to promote the public welfare, has lately turned his attention to an interesting enquiry into the effect of Athletic Exercises on the human frame, as they regard health and longevity. With a view of solving so important an enquiry, he has taken every possible means to collect the best information respecting the success with which men have been trained to these exercises; and also the arts by which they are improved in strength, spirit, or speed. Men of high professional character have voluntarily assisted the worthy Baronet in this laudable undertaking, by drawing up queries to persons most likely to furnish intelligent and useful answers. This has naturally led to analogical comparisons between the human and animal race, which affords much interesting, as well as curious information. Sir John properly remarks at the end of his queries—"That these are questions, of the importance of which, those who are best able to answer, may not be fully aware. But nothing which so suddenly changes the powers, and the very form and character of the body, from gross to lean, from weakness to vigorous health, from a breathless and bloated carcase, to one active and untiring, can never be unimportant, either to the art of physic in general, or to the branch of it more immediately connected with enquiries regarding health and longevity."

LONDON PRICES OF GRAIN for Dec. 1806.

MARK LANE, Monday, Dec. 1, 1806.

We had very large arrivals of Wheats from the adjacent counties of Kent, Essex, and Suffolk; our buyers likewise were numerous; prime samples advanced about 2s. per quarter, and went off freely upon those terms, while the sales of the other quantities were by no means so brisk, nor prices much higher than last reported.—We have considerable supplies of both Barley and Oats, yet both of these are dearer.—White Pease are likewise higher.—Malt, and beans of each description, with other articles of Grain, are without variation

Price of Grain, on board Ship, as under.

Wheat	60s 66s 70s	White Peas	60s to 78s od	Beans, Old	—s to 51s
Fine	78s to 82s	Boilers	80s to 87s	Ticks, new	30s to 38s
Superfine	84s to 86s	Suffolks	89s	Ditto Old	—s to 43s
Eye	—s to —s	Grey Peas	40s to 46s	Oats	22s 27s to 31s
Barley	36s to 44s od	New, ditto	52s	Polands	—s to 34s od
Malt	70s to 77s	Beans, new	36s to 46s od		

Monday, Dec. 8.

We had no great quantity of Wheat up for this day's market, and our millers buying freely at first of the morning, prices were about 3s. per quarter higher than last week; a heaviness, however, prevailed towards noon, but with little abatement in price.—Rye is scarce and dearer.—Barley and Malt are likewise higher.—White Pease are again on the decline.—Beans of both sorts, and Grey Pease, remain nearly as last.—We have some arrivals of Oats from Yorkshire and Lincolnshire. Of the supply on hand there are but few good, and those are 1s. per quarter dearer than last Monday.—A start in flour is announced, but we have no authority to advance the currency this week.

Wheat	60s 70s 75s	White Peas	50s to 70s	Ditto, Old	51s
Fine	80s to 85s	Boilers	78s to 85s	Ticks new	32s to 39s
Superfine	86s 88s	Suffolks	—s to 87s	Ditto, Old	44s
Rye	46s to 50s	Grey Peas	36s to 46s	Oats	24s 29s to 32s
Barley	36s to 45s	New ditto	52s	Polands	—s 34s 6d
Malt	68s to 78s	Beans new	38s to 46s		

Monday, Dec. 15.

With adding the arrivals of to-day to some quantity left over from last week, our supply of Wheat upon the whole was a tolerable good one. Thus furnished, prices declined 2s. and 3s. per quarter; and, instead of flour acquiring an advance, as mentioned in our last, 75s. per Sack is with difficulty obtained.—Good Red Wheats fetched about 4l. a quarter.—Barley and Malt are likewise on the decline; of the former we have large supplies.—White Pease, not coming so plentiful as expected, are getting up again.—In Grey Pease and Beans the variation has not been material.—Oats continue dear, and of which there were very few fresh arrivals this morning.

Wheat	58s 65s to 78s	White Pease	45s to 70s	Ditto, old,	51s
Fine	—s 80s to 85s	Boilers	80s to 86s	Ticks, new	32s to 38s
Superfine,	86s to 88s	Suffolks,	—s to 88s	Ditto, old,	44s
Rye	40s to 48s	Grey Peas	36s to 48s	Oats	25s 29s to 33s
Barley	30s to 42s	New ditto	51s	Polands	—s to 35s 0d
Malt	60s to 75s	Beans, new	40s to 48s		

Monday, Dec. 22.

The fresh arrivals of Wheat to-day, with some remains of last week, constituted a tolerable supply. The sales were generally very dull, and with an abatement of 1s. and 2s. per quarter.—Barley has come short to market, and is dearer.—Malt obtains rather better prices.—So little has been the variation in White Pease and Beans, that we have nothing to report of those articles, but to repeat last week's currency.—Oats are a short supply, and full as dear as last week.—Flour heavy, at 75s. per sack.

Wheat	50s 60s to 70s	White Pease	46s to 66s	Old	51s
Fine	78s to 82s	Boilers	80s to 86s	Ticks, new	30s to 37s
Superfine	84s to 88s	Suffolks	88s	Old	44s
Rye, new	36s to 46s	Grey Pease	34s to 48s	Oats	25s 28s 33s
Barley	30s to 42s	New, ditto	51s	Polands	—s to 35s
Malt	60s to 72s	Beans, new	42s to 48s		

Monday, Dec. 29.

Our supply of Wheat to-day was tolerably good, but principally of middling and ordinary quality; samples of this description were 2s. and 3s. per quarter cheaper than last Monday; but in the sales of the few of Fine Old White, the like reduction did not take place, though these were something cheaper.—Barley continues a short supply, and is still on the advance.—Malt is without any alteration.—White and Grey Pease remain likewise steady, at last prices.—Small Old Beans are rather lower, but Old Ticks are a trifle dearer.—The other sorts have varied but little.—We had some arrivals of Oats, but this article cannot be placed at less than stated in our last currency.

Wheat	54s 65s to 72s	White Pease	48s to 66s	Old	50s
Fine	—s 76s to 82s	Boilers	78s to 86s	Ticks new	30s to 37s
Superfine	84s to 86s	Suffolks	—s to 88s	Old	45s
Rye	36s to 46s	Grey Pease	36s to 48s	Oats	24s 28s 33s
Barley	32s to 43s	Fine new	51s	Polands	35s
Malt	62s to 75s	Beans new	38 to 45s		

*Prices of Hops, Meat, Seed, Leather, Tallow, &c. for
Dec. 1806.*

<i>Price of Hops.</i>	1st Week		2d Week		3d Week		4th Week	
	s.	s.	s.	s.	s.	s.	s.	s.
<i>Bags.</i>								
Kent — —	100 to 122	100 to 122	100 to 112	90 to 112				
Suffex — —	100 to 120	100 to 120	100 to 120	90 to 105				
Essex — —	100 to 120	100 to 120	100 to 120	90 to 105				
<i>Pockets.</i>								
Kent — —	94 to 112	94 to 112	94 to 112	100 to 130				
Suffex — —	94 to 104	94 to 104	94 to 104	95 to 116				
Farnham — —	160 to 189	160 to 189	160 to 189	160 to 189				
<i>Seeds.</i>								
Broad Beans, (per quarter)	40 to 56	40 to 68	40 to 68	40 to 68				
Long Pods	38 to 42	34 to 44	34 to 44	32 to 48				
Tares — —	32 to 50	32 to 50	32 to 56	32 to 56				
Rye Grass — —								
Caraway, (pr cwt.) —	48 to 50	48 to 50	45 to 50	45 to 50				
Coriander — —	11 to 12	11 to 12	11 to 12	11 to 12				
Trefoil — —								
Red Clover — —								
White ditto — —								
White Mustard Seed, pr bu.	9 to 16	9 to 16	9 to 16	9 to 16				
Brown ditto	10 to 17	10 to 17	10 to 17	10 to 17				
Canary Seed								
Turnip, — —								
Rape Seed, (per last) —	24 to 27	24 to 27	22 to 27	22 to 28				
<i>Meat at Smithfield,</i>								
To sink the offal, p. ft. 8lb.	s. d. s. d.	s. d. s. d.	s. d. s. d.	s. d. s. d.				
Beef — —	4 0 to 5 2	4 0 to 5 2	4 0 to 6 0	4 4 to 5 4				
Mutton — —	4 4 to 5 4	4 4 to 5 4	4 8 to 5 6	4 8 to 5 8				
Veal — —	4 8 to 6 0	5 0 to 6 0	4 6 to 6 0	4 8 to 6 0				
Pork — —	5 0 to 5 8	4 8 to 6 0	4 8 to 5 8	4 8 to 5 8				
Lamb — —								
Head of Cattle—Beasts about	2,500	2,500	2,700	2,500				
Sheep and Lambes	12,500	13,000	10,500	9,500				
<i>Price of Leather.</i>	d. d.	d. d.	d. d.	d. d.				
Butts, 50lb. to 56lb. each	22 to 24	22 to 24	22½ to 24	22 to 24				
Ditto, 60lb. to 65lb. each	26 to 28	26 to 28	26 to 27	26 to 27				
Merchants Backs — —	21½ to 22	21½ to 22	21½ to 22	21½ to 22				
Dressing Hides — —	18 to —	18 to —	17½ to 18½	17½ to 18½				
Fine Coach Hides — —	20 to 21½	20 to 20½	18½ to 20	18½ to 20				
Crop Hides for cutting	20 to 21	20 to 21	21 to 24	21 to 24				
Flat Ordinary — —	18½ to 19½	18½ to 19	17½ to 18½	17½ to 18½				
Calf Skins, 30 to 40lb. p. doz.		28 to 42	26 to 40	26 to 43				
Ditto, 50lb. to 70lb. do.		36 to 42	36 to 41	36 to 41				
Ditto, 70lb. to 80lb. do.		30 to 36	30 to 34	30 to 34				
Sm. Seals (Greenland)		36 to 39	38 to 42	38 to 42				
Large do. (per dozen)		51 to 71	51 to 71	51 to 71				
Goat Skins per doz.		— to —	— to —	— to —				
Tanned Horse Hides prhide		18s to 35s	18s to 35s	18s to 35s				
<i>Price of Tallow.</i>	s. d.	s. d.	s. d.	s. d.				
St. James's Market —	3 10	3 9	3 9½	3 9				
Clare Market — —	3 10½	3 9	3 9	3 9				
Whitechapel Market —	3 9	3 8	3 9	3 8				
Per stone of 8lb. Average	3 10	3 8½	3 9	3 8½				
Town Tallow — —	65 6	64 0	64 0	63 6				
Russia (Candles) — —	57 0	56 0	57 0	57 0				
Russia ditto (Soap) — —	56 0	55 0	56 0	56 0				
Melting Stuff — —	49 0	48 0	49 0	49 0				
Ditto rough — —	32 0	30 0	30 0	30 0				
Garves — —	11 0	11 0	11 0	11 0				
Yellow Soap — —	72 0	72 0	74 0	74 0				
Mottled ditto — —	84 0	84 0	86 0	86 0				
Curd ditto — —	88 0	88 0	90 0	90 0				
Candles per dozen — —	10 6	10 6	10 6	10 6				
Moulds — —	11 6	11 6	11 6	11 6				

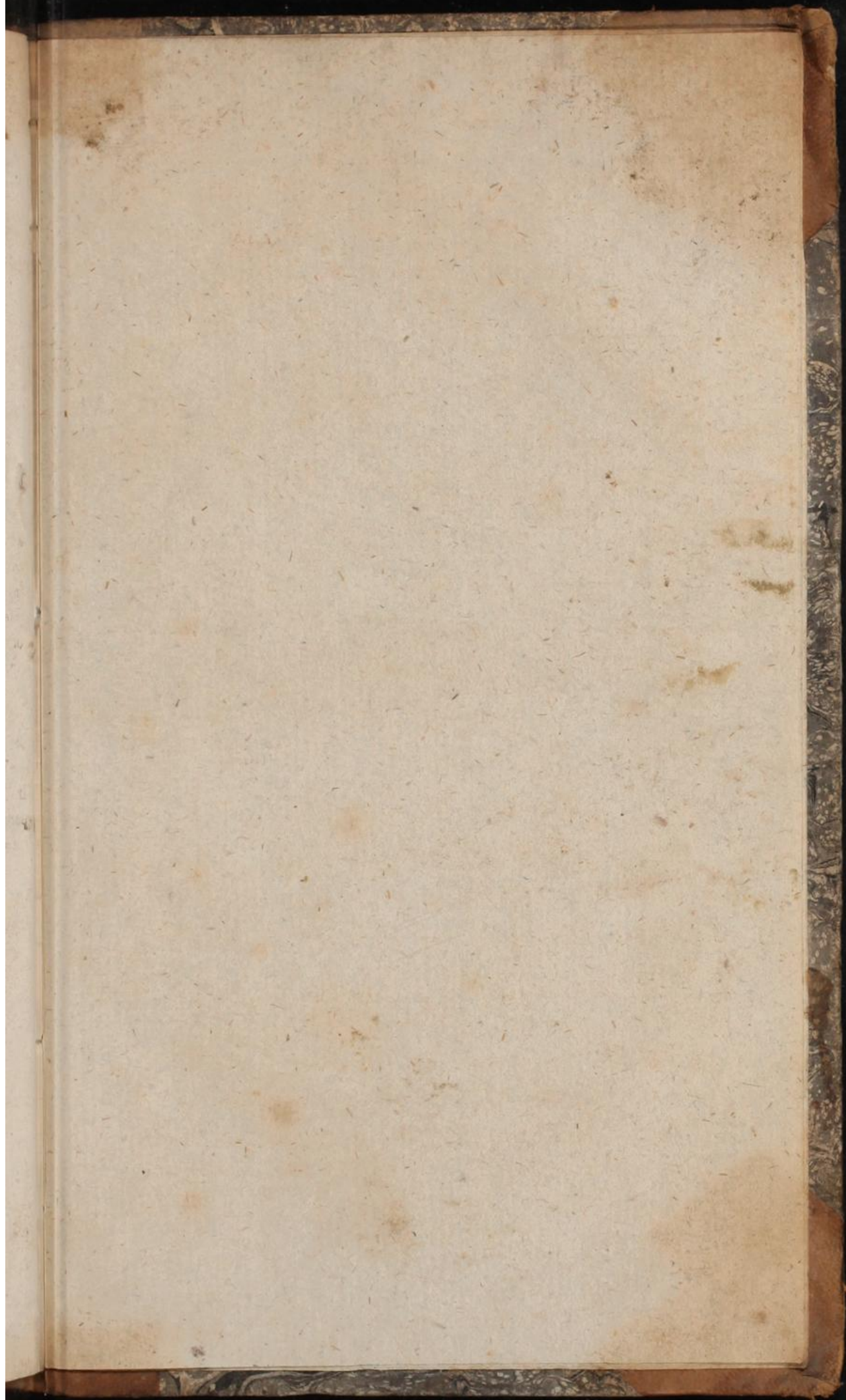
Prices of Raw Hides, Hay and Straw, &c. for Dec. 1806.

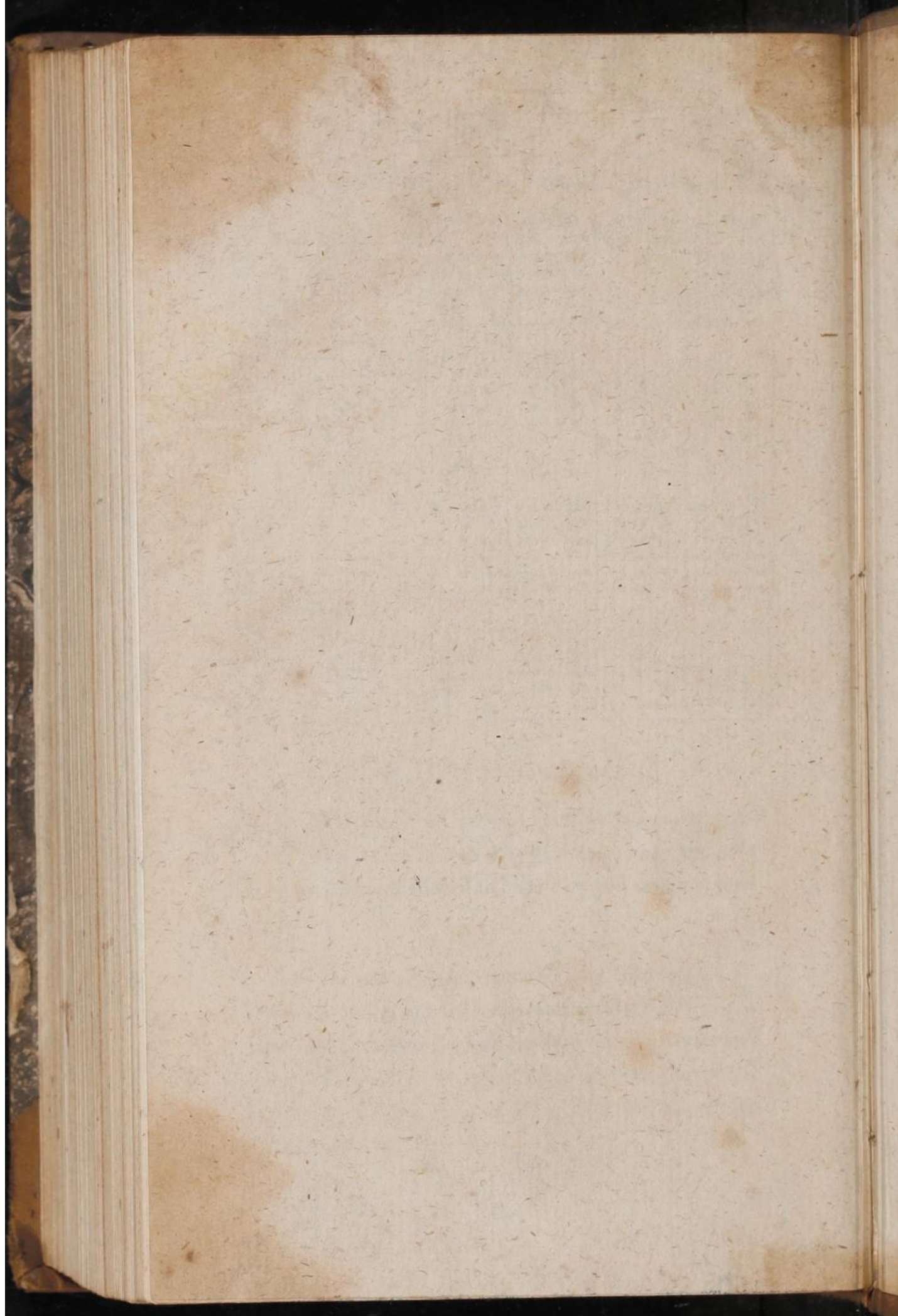
	First Week		2d Week		3d Week.		4th Week.	
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
<i>Raw Hides.</i>								
Best Heifers & Steers, pr ft.	3 2	to 3 4	3 2	to 3 4			3 2	to 3 4
Middling — —	2 8	to 2 10	2 8	to 2 10			2 6	to 2 8
Ordinary — —	2 4	to 2 6	2 2	to 2 6			2 0	to 2 4
Market Calf — —	12 6	each	12 6	each			12 6	each
Eng. Horse — —	15s	to 16s	14s	to 16s			15s	to 17s
Lamb Skins — —								
Sheep Skins — —	3 0	to 4 6	3 0	to 4 6			3 0	to 5 0
<i>Price of Hay and Straw.</i>								
	<i>l. s. d.</i>		<i>l. s. d.</i>		<i>l. s. d.</i>		<i>l. s. d.</i>	
St. James's—Hay —	3 19 0		3 17 3		3 18 6		3 14 0	
Straw — —	2 11 0		2 9 6		2 12 6		2 11 0	
Whitech.—Hay —	4 3 0		4 3 0		4 3 0		4 2 0	
New — —	0 — 0		0 — 0		0 — 0		0 — 0	
Clover — —	4 14 6		4 14 6		4 10 0		4 10 0	
Straw — —	2 2 0		2 4 0		2 2 0		2 4 0	
<i>Newbury.</i>								
Wheat — — —	65s	to 93s	65s	to 92s	68s	to 96s	65s	to 95s
Barley — — —	38s	to 48s	38s	to 44s	38s	to 43s	35s	to 41s
Oats — — —	27s	to 32s	27s	to 32s	28s	to 34s	27s	to 38s
Beans — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s
New ditto — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Peas — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s
<i>Salisbury.</i>								
Wheat — — —	71s	to 79s	71s	to 79s	72s	to 80s	72s	to 80s
New ditto — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Barley — — —	40s	to 42s	40s	to 42s	40s	to 43s	40s	to 42s
Beans — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Oats — — —	32s	to 36s	32s	to 36s	32s	to 36s	32s	to 36s
Peas — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s

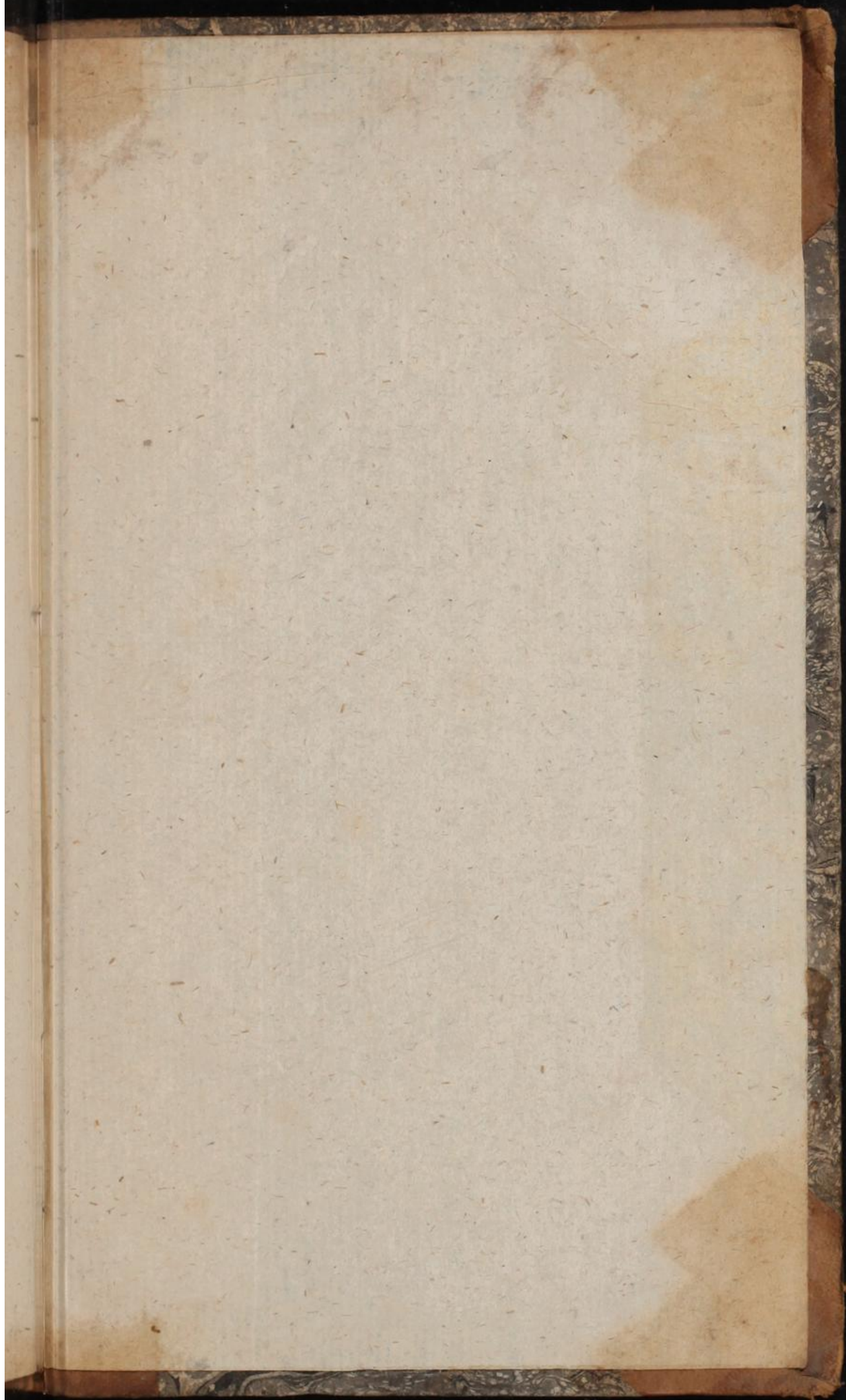
TO CORRESPONDENTS.

WE feel much obligation to our various correspondents for the favours they have so liberally bestowed upon us, and are induced to hope they will continue their exertions.

From the *new* arrangements which we have lately been enabled to make, and the consequent accession of strength which we have obtained, we are flattered with the expectation of being able, in a short time, to render our publication still more deserving of their attention, as well as that of the public.







The image shows the front cover of an antique book. The cover is decorated with a complex marbled paper pattern in shades of grey, black, and white, featuring swirling, organic shapes. The spine, visible on the right, is bound in a plain, aged brown leather. A small, rectangular, light-colored paper label is affixed to the lower-left portion of the marbled cover, bearing the number '844.' in a bold, black, serif font. The book's edges are worn, and the overall appearance is that of a well-used, historical volume.

844.



842.







Inches 1 2 3 4 5 6 7 8
Centimetres 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Farbkarte #13

B.I.G.

Blue	Cyan	Green	Yellow	Red	Magenta	White	3/Color	Black
								
								

