

THE
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REMARKS ON THE PRIZE CATTLE.

To the Editor of the Agricultural Magazine.

SIR,

THE prize cattle lately exhibited in Smithfield have attracted so much notice, that I presume a few cursory observations regarding them you will not consider unacceptable.

There are few subjects which in a great capital can be more interesting than this exhibition, because it is connected with some of the most essential articles of human subsistence. It is satisfactory that the persons appointed as judges on the occasion, are men of great respectability, whose employments in life have rendered them competent to the duty imposed upon them; and we believe it will be universally acknowledged, that the preference has been given at this time with great judgment, and with perfect impartiality. If any doubt may be entertained of correct decision, it is in the application of the prizes in the ninth class, which consists of the swine. The title of Bedford has been so long at the head of every distinction of improvement in agriculture, that I should have been extremely sorry not to have observed the continuance of its protection and patronage, under the new character by which its honours are sustained.—Five of the prizes on the present occasion are awarded to that Nobleman.

Some of the amateurs on this subject will recollect, that the prizes were formerly assigned to the most gigantic and disproportionate animals, pampered by every expedient of art; which occasioned these ironical remarks from a foreign agriculturist. “It gave me (says he) the greatest satisfaction to see, that animals which are here the size of an ordinary English bull-dog, you are capable of expanding to the magnitude of an Indian elephant; yet with heads the size of a rat, and with bones the consistence of a gristle. I have sedulously attended to the mode of treatment that was necessary to produce this extraordinary change; and I have been mortified with the discovery, that for every pound of flesh you obtain, you expend ten times its value in provender to produce the artificial tumour.” It will afford satisfaction not only to this ingenious foreigner, but to the whole country, to notice,

that the object of the present classification of the cattle, is not only to include animals enlarged to an unnatural size by confinement and saturity; but also those which live in the open air, and of which the ordinary herbage is the support. In justice to the breeders of this last species of prize animals, it should be remarked, that the heat of the place in which they are now kept, has occasioned them to waste; and therefore not to appear to all the advantage which they did on their first entrance, when the judges gave their determination.

Dec. 20, 1803.

I am, Sir, yours, &c.

T. W.

SHEW OF PRIZE CATTLE.

THE annual shew of prize cattle, on Friday, at Wooton's, in Smithfield, was well attended; it being the day appointed by the Noblemen and Gentlemen composing the Smithfield Society, to inspect the collection, and adjudge to the successful candidates their deserved rewards, pursuant to the resolutions of last year.

The judges nominated by the committee were the following gentlemen, viz.

Mr. Byng.

Mr. Flowers, near Aylesbury	} Graziers.
Mr. King, jun. Plaistow, Essex	
Mr. Bond, of the Strand	} Butchers.
Mr. Hembrough, Piccadilly	

PRIZES—CLASS THE FIRST.

Beasts fed on any kind of food except Corn.

To the owner of the best Ox, of 160 stone, or upwards, 25 guineas; was gained by Mr. Westcar, for an ox 6½ years old.

To the owner of the second best of that weight, 15 guineas.—His Grace the Duke of Bedford, for an ox 7 years old.

CLASS SECOND.

Beasts fed without Cake or Corn.

To the owner of the best ox of 100 stone, or upwards, 25 guineas.—Mr. Westcar obtained it for an ox 7 years old.

The second best of the same description, 15 guineas, was adjudged to Mr. Edmonds.

CLASS THIRD.

Beasts fed without Cake or Corn.

To the owner of the best ox under 100 stone, 15 guineas.—This was won by Mr. Westcar, for an ox grass fed, 6 years old.

CLASS FOURTH.

Cows.

To the owner of the best fat cow (heifers excluded) 15 guineas.—This was won by Mr. Westcar, for a Devon cow, grass fed, 7 years old.

To the owner of the next best, 10 guineas.—This was obtained by the Duke of Bedford, for a Devon cow, grass fed, 7 years old.

CLASS FIFTH.

One year old long-woolled Wethers.

To the owner of the best pen of three, of one man's breed, 10 guineas.—This was adjudged to Mr. Chandler, for New Leicesters, 1 year old.

CLASS SIXTH.

Two years old long-woolled Wethers.

For the best pen of three, 10 guineas.—Adjudged to Mr. Rogers, for a pen of Gloucesters.

CLASS SEVENTH.

One year old short-woolled Wethers.

To the owner of the best pen of three, 10 guineas.—Adjudged to his Grace the Duke of Bedford, for a pen of South Down.

CLASS EIGHTH.

Two years old short-woolled Wethers.

To the owner of the best pen, 10 guineas.—Adjudged to the Duke of Bedford, for a pen of South Down.

CLASS NINTH.

Pigs.

To the owner of the best fat pig, 15 guineas.—This was adjudged to Mr. Whittle, for a Kentish pig, 18 months old.

To the owner of the second best, 10 guineas.—This was adjudged to the Duke of Bedford, for a Suffolk pig.

The preceding list contains an account of the cattle in Smithfield, which have lately been exhibited by the candidates for the annual prizes. The six names of the successful breeders are well known to the agricultural world: and we wish the zeal which these friends to improvement have shewn, was more generally diffused. It will be seen with astonishment, that the four first prizes for horned cattle were assigned to Mr. Westcar: that five other prizes were awarded to the Duke of Bedford; and that so little has been the spirit of competition, that only four prizes have been reserved for the general mass of breeders, viz. the second prize for the ox, in the second class, determined in favour of Mr. Edmonds, the prizes for the fifth and sixth classes, consisting of wethers, given to Messrs. Chandler and Rogers, and for the ninth class, which includes the swine, to Mr. Whittle.

We should have been glad to have seen some of the names with which the public have become acquainted, among those of the successful rivals on the present occasion; we allude to Messrs. Grace, Newnham, Cooke, Ellman, and Hanson; because, if we may judge from the specimens we have seen of

the produce of their farms, we should have had a very respectable addition to the shew of this year. It is certainly to the honour of his Grace of Bedford, and Mr. Westcar, that so many prizes should have been assigned for the animals they have exhibited, but it should be recollected, that with so little opposition, their praise is rather of a negative kind, for it might be the case that the prizes were awarded to them, because they had to encounter no competitors. The French ox, and the Devonshire heifer of the Duke last year, were only esteemed worthy of prizes on that very account, and it will be remembered, that the liberality of his Grace would not admit him to receive the rewards determined in his favour under such circumstances.

We think it unnecessary to enter into more particulars regarding the prize cattle, but as our attention is at present directed to this subject, we will subjoin a few remarks on the requisites in breeding. We must, however, say a parting word to the friends of improvement in the various provincial societies, that if they do not approve of the shew this year in the great market of the capital, we hope they will make exertions in their respective districts to promote a spirit of emulation suited to produce the highest possible excellence in this important department.

The question respecting cattle for food, is very different from that which concerns horses. With the latter the object is to bring them to the greatest correctness of symmetry, because their strength depends on preserving the proportions unsophisticated nature has designed. The former, on the contrary, are brought into a morbid state, as the best means of extracting profit from them.

No person acquainted with the animal economy, can doubt that this unnatural concretion of the white oily substance collected in the membranous loculi, or cells, in various parts of the body is a state of disease, and it is followed by all its symptoms: it is attended with heaviness and drowsiness, not only from the unwieldiness of an over grown body, but from loading and stuffing the cavities of the thorax, and preventing the due expansion of the diaphragm and the lungs, it sometimes terminates fatally.

Whatever construction breeders may put upon it, when we explain by what means this vast obesity is engendered, our readers will be satisfied that it is not a natural, and, therefore, cannot be a healthy state. It arises "from a copious, oily, soft blood, containing less than its share of salt."

Such a constitution of blood occasioning but a feeble fermentation, there is less consumed, than is made; the lymph, which seems to be the matter of nutrition, preserves its viscid consistence longer; and by that means adheres the more plen-

tifully to divers parts of the body. There is more fat separated from the blood, than can be well deposited in the adipose cells. Hence the body enlarges very considerably, and the parts are sometimes distended to a monstrous bulk.

But be this a morbid or a salutary state, it is now the great desideratum of graziers, whose leading object is not to consult the strength, health, and beauty of the animal, but to sacrifice his vigour, salubrity, and correct proportions, in order to make the beast, as Mr. Bakewell expressed it, into a machine the best contrived for converting herbage into money. According to his principle, we lose sight of the animal entirely; he becomes a sort of mill, of which vegetable produce is to be thrown into the hopper, and to be extracted in the form of gold dust, or he is a chemical apparatus which answers all the designs of the philosopher's stone, to transmute or exalt impure materials into the precious metals.

Although this be the universal object with graziers, yet according to the fluctuation of circumstances, he is to produce this result in different ways. He must consider whether the forcing food he employs, be to prepare the animal for the dairy, the shambles, or the tallow and soap chandler. With respect to the first, we are told on the authority of Walter Trevelyan, Esq. of Nether Witton, in Northumberland, that a well-bred Teeswater cow will give on an average, fourteen quarts at each of two milkings, or twenty-eight quarts per day. Some of the Teeswater breed, according to Culley, give even to the amount of thirty-six quarts per day. But calculating at twenty eight quarts, this, at four pence per quart, amounts to 9s. 4d. per day, and in six months, to 84l. Another intelligent gentleman who has had great experience in cattle-farming, observes, that any cow at all calculated for the dairy, will in seven months milking, pay double her price to the butcher. Take for example, an Irish or Scottish cow, calving in May, and value the grass she eats at 3l.; if she give from ten to twelve quarts per day, the farmer will not only be indemnified for attendance, rent, &c. but at the end of the season he will have the cow for nothing.

Perhaps, notwithstanding this appearance of extensive advantage, the preparation of cattle for the shambles is not less profitable, but whether the animal is to be loaded with fat, or with substantial flesh for this purpose, must be determined by the comparative prices of meat and tallow. Perhaps the average price of beef in the carcass, is 7d. per pound in Smithfield market, sinking the offal; the average price of tallow in St. James's, Clare, and White-Chapel markets, was the last market day exactly the same, so that in the present situation of the sale, it is certainly the interest of the breeder to occasion that prodigious corpulency for which some of the cattle at the exhibitions we have noticed are so remarkable.

When Sir John Sinclair, in January 1802, was preparing his hints regarding cattle for the public eye, there was the difference of 65 per cent increase on the price of flesh, so that the policy of the grazier, must at that time have been wholly different from that which should now prevail.

The variations then in the market are material to the consideration of the grazier, in order to make the animal, as before noticed, into "a machine the best contrived for converting herbage into money."

Dr. Adam Smith, the celebrated professor in the university of Glasgow, said that the greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgement, with which it is any where directed or applied, seem to have been the effects of the division of labour.

It is precisely the contrary in the subject to which we are now adverting, for the great impediments to improvement have been the consequence of the division of labour in respect to cattle. They were bred in one county, and by one set of dealers, were fattened and sent to market by another, and butchered by a third distinction. All of these living at a distance from each other, and having scarcely any communication, the drovers and salesmen intervening with each class, the subject was very imperfectly understood. It is to a person we have named and to his disciple, that we are principally indebted for the improvements in cattle. They united in their own persons, the knowledge requisite to the three distinct characters, and the duty of the breeder was accommodated to the designs of the grazier, and to the business of the butcher. We are not at all sorry to see that in many of the provinces of the kingdom there are men who have directed their attention to these three important occupations, because we are obliged to confess, that the knowledge of cattle is yet in its infancy, and therefore that the improvements must at present depend on this union of attainments, which we advise the philosopher whose profession it is to observe every thing and do nothing, not to undervalue.

In a few years it may be expected that the division of labour to which we have alluded may be again re-established with advantage, for we may presume, that the present opportunities of experience will convert the art into a science, reduced to great leading maxims and principles by which the three distinct employments may be successfully conducted. Several important advantages will be derived from this restoration of the ancient plan. Cattle will be bred in those countries which are not suited to the business of the grazier. The grazier will inhabit the rich and luxuriant pasture where nature imparts her own plenitude to the animals supported by her bounty, and the joint labours of these purveyors will enable the

butcher to perform his duty with the greatest benefit to himself and the public. Although the space to which we are confined will not admit our extracting some very curious and interesting remarks on this subject from the writings of a spirited improver in the northern extremity of Scotland, yet we cannot avoid introducing his concluding observations. In these he adverts first to the excellencies to which cattle may attain, and next to the means most likely to produce these qualities.

DESIDERATA IN CATTLE.

1. To be a moderate size, unless where the food is of a nature peculiarly forcing.
2. To be of a shape the most likely to yield profit to the farmer.
3. To be of a docile disposition, without being deficient in spirit.
4. To be hardy and not liable to disease.
5. To be easily maintained, and on food not of a costly nature.
6. To arrive soon at maturity.
7. To produce a considerable quantity of milk.
8. To have flesh of an excellent quality.
9. To have a tendency to take on fat.
10. To have a valuable hide.
11. Calculated in some cases, should it be judged necessary, for working.

I shall conclude with observing, how desirable it would be, that under the auspices of the Board of Agriculture, some persons were appointed, perfectly competent to the duty, and who had leisure to do justice to such an undertaking, to whose care and talents the important task might be committed of drawing up a detailed system on the subject of cattle. But in order to make such a work complete, more especially that part of it which relates to the diseases of cattle, it would be necessary to collect intelligence, not only from every district in these kingdoms, (which might easily be done, by circulating queries for that purpose, and granting premiums to those by whom the best answers were returned,) and also to extract useful information from the writings of Young, of Marshall, and of Anderson, and from the various publications of the Board of Agriculture, but to apply even to foreign countries for the knowledge they can furnish; and, with that view, it would be proper to carry on a regular correspondence with the most distinguished societies in foreign parts, who have directed their attention to rural improvements. By collecting the information and experience of the different countries in Europe upon that and other subjects of a similar nature, there is every reason to hope that the art, not only of breeding and managing domestic animals, but also every other branch of agriculture, might be brought to a degree of perfection which otherwise must be unattainable.

IN DRILL HUSBANDRY, THE HORSE-HOE INDISPENSABLE.

To the Editor of the Agricultural Magazine.

SIR,

I Was much pleased with a letter signed P. J. from Norfolk, dated the 16th of November, introduced into your last number. I have in common with that gentleman found the great inconvenience of employing Cook's Drill with wheat on the clover layer, and as the culture of wheat after clover is one of the most valuable discoveries of late years, it is of great consequence that the difficulty should be removed, and I have no doubt the extensive circulation of your work will greatly contribute to this purpose.

My principal view, however, in noticing that letter, is to make a remark or two on the concluding paragraph, "When (says your correspondent) I first had a drill, it contained eight hoppers or divisions, I took it in pieces, and had it altered to ten, so that I can now put in my barley at five inches, wheat seven, peas nine, turnips twelve, or of course one or the other at any of the above distances."

I conceive that the existence of the drill husbandry depends absolutely upon the horse-hoe, and I presume it will be allowed that this instrument can never be safely employed when the corn is sown in rows at a less distance than eight or nine inches. Every thing you have urged lately, Mr. Editor, on the subject, as well as my own practical experience, has conduced to establish in my mind, that the horse-hoe is indispensable, and that when the rows of corn be made to approach nearer, the farmer cannot avail himself of its utilities. It is on this account that I am astonished your Norfolk Correspondent should consider the reduction of the distances any convenience, for even in the districts of that county, where the hoe may be used with the greatest facility, both his wheat sown at seven inches, and his barley at five, must be exposed to struggle with the weeds, must lose the advantage of the freshening by the movement of the adjacent soil, because if he were to attempt to use the hoe machine, he would cut the produce up by the roots.

I have a very high opinion of the agricultural talents of P. J. from the ingenuity of his contrivance to which I first adverted, and it will give me great pleasure through the medium of your miscellany, to attend to his observations on the objection I have stated.

I am, Sir,
Yours, &c.

Chelmsford, Dec. 10.

J. S.

THE RESULT OF AN EXPERIMENT IN SOWING
TURNIPS.

To the Editor of the Agricultural Magazine.

SIR,

IN a letter which I sent you last year, and which you did me the honour to publish in your Miscellany, I proposed making some experiments this season on an admixture of the seed of the Swedish with that of the common Turnip, in order to prevent, if possible, the destructive ravage of the fly: or rather, by furnishing them with a more dainty morsel, which upon the system of predilection, would amuse them for a few days, to give time to the turnip to attain its rough leaf, which would render it less liable to be destroyed by their attack. At the same time, I promised to give the result of those experiments. Various circumstances have hitherto prevented my writing; and, indeed, having been disappointed of the seed which I intended to distribute amongst my neighbours, and unable to try its effects but in two instances, I was for some time doubtful whether it would be fair to fill a page in your work with the detail of a circumscribed unsuccessful attempt, which might better be dedicated to the communications of more valuable correspondents. But upon maturer reflection, that very failure of success has prompted me to send you the account, as the public were as equally entitled to be made acquainted with the result, as if it had met my most sanguine expectations; and more particularly, as there were some circumstances attending the trial, which it might not be useless to advert to.

I mentioned my having been able to make the experiment but in two instances, these two, produced results very different. In the first, I gave about a pint and half of the Swedish turnip seed, to an intelligent neighbouring farmer, a quantity, I deemed, fully sufficient by intermixture, to sow two acres of land. Both plants came up well, and both were totally destroyed. The other was tried upon land in my own occupation, the same quantity of the seed, mixed with four pounds of the common turnip, were sown broad-cast upon two acres of land; these plants rose well, and neither were attacked. From this statement, as not having prevented the destruction of the plants in the first instance, the experiment must certainly be said to have failed. At least, it must be rejected as an infallible remedy; though I still think it may prove serviceable in many instances, and therefore, meriting farther trial. It ought to be observed, that perhaps, there never was a season in which the fly more abounded, or the turnip crop, throughout, at least, the eastern part of the County of Norfolk, suf-

ferred more from them, than during the present one. I do not recollect to have ever noticed them commencing their ravages at so early a period, or extending it to so many different plants. The drum-head cabbages which I sowed the first week in March, were before the expiration of that month, more than half of them, destroyed. At first I attributed the diminution of their numbers to the slug, nor could I be persuaded it could possibly be the fly, till I had examined the plants with the closest attention. At a later period, in a garden not far distant from my residence, the full grown leaves of a large bed of horse-radish, with the exception of the fibrous parts, fell a prey to their voracity. Under these circumstances, may not the failure in some degree be accounted for, as proceeding, not so much from the defectiveness of the man proposed as from the unusual abundance of the insect? There is another circumstance I shall notice; my neighbour's land, where the crop was destroyed, was manured with dung from the compost. Mine, having been in the occupation of a slovenly farmer, was very much overrun with couch grass, the triticum repens; as the season was favourable, I had this, with the mould adhering to it, collected at a considerable expence, and burnt in one large heap. By this means, I obtained a sufficient quantity of ashes to dress the whole field, which had likewise an additional manuring of pond mud. How far, or whether in any respect, these operated as a preventative to save my plants, I am unable to say; but, I trust, my remarking this difference in our mode of preparation, will neither be deemed frivolous, or irrelevant. Since it is by a minute attention to circumstances as seemingly trivial, by an accurate observance of effects, and by endeavouring to trace them to their causes, that we may ultimately hope to be enabled to discover, and to prevent, what we readily enough allow to be an evil of no trifling magnitude. If any of your intelligent correspondents, who are in the habit of manuring for their turnips with oil cake, would, through the channel of your publication, be kind enough to communicate, whether they find them subject to the depredation of the fly, in any degree equal to what they experience when they use dung from the compost heap, it might tend to throw some light on the subject.

As my paper affords me sufficient room for the purpose, I shall conclude this letter with a caution to the cultivators of the Swedish turnip, not to be too hasty in ploughing them up when they conceive them taken off by the fly; I mean, provided the land be in an high state of cultivation, free from weeds. By adopting this the two last seasons, I was amply repaid for my forbearance. Even in the present one, I have obtained a crop by no means despicable. If there be any stumps remaining in the ground, they will break out a fresh

and the produce per acre from these, though they may stand thinner, will generally exceed what rise from a second sowing.

I have the honour to be, Sir,
Your obedient servant,

Near Norwich, Dec. 3, 1803.

CASTOR.

OBSERVATIONS ON THE COMPARATIVE STRENGTH OF THE HORSE AND THE OX. COMMUNICATED BY AN INGENUOUS FOREIGNER.

To the Editor of the Agricultural Magazine.

SIR,

BEING but a novice in the study of Agriculture, I cannot pretend to enter the lists with those gentlemen, who in your Magazine, are so warmly and ingenuously discussing the comparative utility and superiority of oxen and horses; yet being the native of a country, where the former (oxen) are universally employed, I hope I shall not intrude upon your time much, by communicating a few facts and observations upon the subject, which you may dispose of as you please.

I have been frequently surprised, that whenever there is a question about the quantity of work performed by both, or the calculation of the expence of keeping; the proportion of oxen to that of horses, is stated to be two to one. Whence is the necessity for this? Cannot one ox be tried fairly against one horse? There may be some difference in the nature of oxen, of the two countries, (France and England,) with which I am unacquainted, yet it is for certain that in my own country the odds are in favour of the ox. An objection of this sort must proceed from the supposition, that the one is not so strong as the other, nay it must be something more than supposition, since it operates so far as to overbalance all other advantages, which, undoubtedly must decide for the superiority of oxen.

The argument of their slowness being completely counter-vailed by the consideration of their being able to bear labour longer, and to be kept at less expence, and by their being ready sale for butcher's market at any time, I shall chiefly confine myself to one point, which is the supposed inferiority of the strength of an ox.

It is very strange that a contrary idea should prevail through the whole extent of a large territory (Red Russia,) where the constant use of oxen ought to have made some impression upon the inhabitants concerning the disadvantages which they must incur by so doing. So far from this, however, it is that idea confirmed by facts and experience, that has established the preference, although as horses are not wanting,

Whenever a more than ordinary exertion of strength is required, oxen are always resorted to. In fact the most toilsome and arduous tasks consigned here chiefly to draught horses, are accomplished there by oxen. I have been myself in a situation once, which made the application of a great proportion of strength indispensable. Three horses at one pull were tried, and repeatedly failed. Two oxen, however, succeeded on the first effort.

I am aware, that to confute this it will be alledged, that it is by a steady and even pull, for which an ox is more fit than a horse, and not by any superiority of strength, that such results are produced. I ask where is the use of that strength which we cannot employ to our advantage? If the horse were stronger, as the object we desire is not inert strength, but strength capable of application. What is the utility of this latent power with which the animal is endowed? Either the superior strength does not exist in the horse, or we cannot invite it into action, and its non-existence, or its inapplicability to our purposes are precisely the same under the present consideration. This is to prefer one thousand pounds, because we know somebody has got it, to the five hundred actually in our possession; or a strong servant to a weak one, because the former could work, yet does not, and all the labour is performed by the latter.

Yet to be satisfied as far as we can in this point, I beg attention to the following fact:—There is a regulation deserving our particular notice, that respects a part of Russia, where salt is a considerable article of trade, and which trade is under the immediate superintendance of the government. The quantity bought is placed in a waggon without any regard being paid to the dimensions of the vehicle: the purchaser is permitted to load as much as he pleases, provided it can be removed by one, by one pair of oxen, to the distance of two miles (English) from the spot, without any obstruction or stoppage whatever, for in this case he forfeits the whole. Upon this occasion the weight of a load commonly is between nine and ten ton, (500 Russian pouds) each poud contains sixty pounds. The road is very flat and even.

As this is not a mere assertion, and can be proved, I leave every one to judge of the strength and power of the animals that can undergo such immense labour without injury or failure. I state merely a fact without the intention of entering into any abstruse speculation,

And remain yours,

RUSTICUS.

ON THE CONSTRUCTION, HANGING, AND FASTENING OF GATES AND WICKETS, COMMUNICATED BY THE INVENTOR, THOMAS N. PARKER, ESQ. OF HATTON GRANGE, NEAR SHIFNAL, SALOP.

To the Editor of the Agricultural Magazine.

SIR,

I This day received your letter, requesting a paper from me, together with instructions for a plate, on the subject of Gates, for your Magazine; and as far as I at this time conveniently can, I shall comply with your wishes.

I am preparing for the press a new edition of my Pamphlet on this subject, with six quarto plates, which will be published early in the ensuing year, by Messrs. Lackington, Allen and Co. and I have recently made some experiments in regard to cast iron hangings and fastenings for gates, the general result of which is at your service.

These hangings and fastenings will require but little description, as the articles themselves can be so readily and so cheaply procured: it may therefore suffice to say, that I saw a strong coach horse rode repeatedly against the fastening by way of trial; and that several persons present frequently shut the gate with as much violence as they could, the gate weighing 119 lbs. The result of this experiment was such as to convince me, that the most powerful horse would not be able to break the fastening, and that the exertion of the strongest man in jarring the gate, could not produce a failure in the hinges.

This is an interesting question to the Agriculturist, and will be noticed by me upon a larger scale: but the opportunity may, nevertheless, be acceptable to you, of communicating it thus early to the public.

The following is the form of an order which might be sent by any of your readers to MESSRS. DEERMAN, FRANCIS, and Co. Eagle Foundry, Birmingham:

* Six sets of Mr. Parker's cast iron-work for gates, consisting of Nos. 1, 3, 4, 5, 6, and 7; 15 lbs. to each set at 3¹/₂d per lb. 4s. 8d¹/₄. per set, (including a pivot pin and washer for the latch).

A pair of sheet iron excutcheons 2d. 12 two-inch wood-screws; for the hooks and catch; 2 one and a half-inch wood-screws for the trap thimble; and 16 two-penny *clout* nails for the excutcheons, will be wanting for putting on each set of this iron-work.

* I have no interest whatever in the sale of these goods; but I recommend each order to be for six sets at the least, otherwise it cannot be worth the notice of the Proprietors of the foundry.

The above is adapted for any common ready made gate with a strong top rail, for opening one way, and right handed. The iron plates on the catch and the two hooks are to be let into the posts to their proper depths, and out of the way of a waggon or carriage passing through the gate; and the latch should rest upon the nearest bar to the top rail.

I do not scruple to add, that I believe the cast iron-work for gates, as recommended, is superior to any wrought iron-work which has hitherto been used for such purposes; particularly with respect to *strength, neatness, convenience, and effect.*

The lower hook is half an inch longer than the upper one, to answer the thimbles; the upper thimble being bent $\frac{1}{4}$ inch towards the hanging post, and the lower thimble $\frac{1}{4}$ inch in the contrary direction; the lower thimble is also lower than the upper one. The gate must be perfectly upright when fastened, and the hinges from 38 to 40 inches asunder. A short post or block should be placed about 135 degrees from the line of fastening, to prevent the gate opening beyond its line of equilibrium.

The gate posts should be nearly in substance to 10 inches by 10 inches, and 8 feet long; at least the hanging post ought not to be much less for a gate of about 120 lbs.

I should observe, that since the great improvements in cast-iron, which admit of nails and even some sewing needles to be manufactured in that manner, it cannot be surprising that cast-iron work should answer so completely for gates.

I am, Sir,

Your very obedient servant,

THOS. N. PARKER.

Hatton Grange,
Dec. 7, 1803.

The subsequent remarks may be intelligible to some of your readers, therefore I will not suppress them.

On my principles, a gate is considered as a lever of the second kind; and when suspended by hooks or pivots precisely perpendicular to each other, it will be at rest wherever it may be placed: but by the smallest variation of the hooks from their perpendicular position, (provided it be sufficient to overcome the friction,) a gate will acquire one determinate line of rest, and an opposite line of equilibrium; and consequently, from any part of a circle which a gate so suspended may be made to describe, it must have a constant tendency to fall to that line of rest.

When a gate is in its line of rest, or opposite line of equilibrium the hooks and the centre of the gate's gravitation will be in one and the same verticle plane; and when the hooks are perpendicular to each other, it can admit of no doubt, that

they must be in the same vertical plane with the centre of the gate's gravitation, because they will be so with any third given point whatsoever.

The requisite velocity for the fall of a gate which opens but one way, is obtained by an extra length of the lower thimble, or more properly, by the horizontal distance of two perpendicular lines, one falling from the centre of each of the hooks or pivots upon which a gate is suspended; and the proportion is not to be determined so much by the length and weight of the gate, as from the distance of two hinges from each other: about a quarter of an inch must also be added to the extra length of the lower thimble, for what is lost in the hanging of the gate, exclusively of the perpendicular difference of the two pivots.*

A gate nine feet long should rise at the head in opening, about six inches, by which it will acquire a sufficient tendency to fall to its line of rest; and supposing the hinges to be 40 inches asunder, it follows, that as the length of the gate is to the difference between the height of the head of the gate when in its natural line of rest, and the height of the head of the gate at its greatest elevation, or opposite line of equilibrium, so will be the distance of the two hooks to double the clear extra length of the lower thimble; that is, reducing it to inches, as $108 : 6 :: 40 : 2 \frac{2}{3} : \dagger$ therefore, this extra length of the lower thimble should be $1 \frac{4}{12}$, including the $\frac{3}{12}$ allowed for what is lost in the hanging. From this proportion may be deduced any other; for example: if the distance of the two hinges were 30 inches, then the extra length of the lower thimble would be $1 \frac{1}{12}$ because as $40 : 1 \frac{4}{12} :: 30 : \frac{10}{12}$, and $\frac{10}{12} + \frac{3}{12} = 1 \frac{1}{12}$, supposing a gate to be a right-angled parallelogram, or equivalent thereto, as far as regards its upright suspension.

A gate being thus hung, will not fall with an uniformly accelerated motion as might be imagined, but with a velocity

* The velocity given to the gate's fall by the extra length of the lower thimble, is calculated for such hinges as are rounded off and well finished; it being now ascertained "that the smallest surface will have the least friction." See Mr. Vince's experiments "on the motion of Bodies affected by friction," Vol. LXXV. Philos. Trans. of the Royal Society of London.

† As it will scarcely be possible in common practice, to be more exact in hanging a gate than to a twelfth part of an inch, I have omitted all greater fractions; that is, the integer of one inch will in no case be divided into more than twelve parts, which I propose to make a general denominator for all broken numbers.

And it may not be amiss to observe in this place, that the compound nature of a gate's motion, which proceeds necessarily from the position of its hinges, or the two centres of its suspension, with respect to each other, cannot readily be defined with an accuracy, perfectly mathematical: but it will be found capable nevertheless of plain and satisfactory explanation, abundantly near enough to the truth for every practical purpose.

somewhat increased towards the middle part of its semicircular course, and retarded again in approaching its line of rest, coinciding with a proportionate rise of the head of the gate;* one half of which rise, or three inches, is attained in the first half, or 90° of the gate's semi-circular motion from its line of rest, and the other half, or three inches, is added in completing the supplementary arc of 90° , but subject to certain variations in the intermediate parts of the gate's motion, viz. as the *versed sine* of the angle formed by the gate with its line of rest, is to the length of the gate which is made radius, so will be the corresponding rise of the head of the gate to three inches, at any given angle within the quadrant: and the rise of the head of the gate afterwards will be; as the *co-sine* of any given angle formed by the gate with its line of equilibrium, is to the length of the gate or radius, so will be the corresponding rise of the head of the gate to the remaining three inches. And by calculation it appears that the rise of the head of the gate will be as follows in each $22^\circ 30'$ or one eighth part of its semi-circular motion from the line of rest to the line of equilibrium.

In the 1st.	$22^\circ 30'$	it will rise	$\frac{3}{12}$ † of an inch
2d.	ditto	ditto	$\frac{7}{12}$
3d.	ditto	ditto	1
4th.	ditto	ditto	$1 \frac{2}{12}$
5th.	ditto	ditto	$1 \frac{5}{12}$
6th.	ditto	ditto	1
7th.	ditto	ditto	$\frac{7}{12}$
8th.	ditto	ditto	$\frac{3}{12}$

Total of 180° will give the rise of 6 inches.

* Although only for such acceleration as may be acquired while the gate, in falling with a continued motion, recedes more and more from the line of equilibrium.

† Though the length of the gate be 108 inches, and the rise of the gate in the first 90° of its motion 36-12ths of inches, yet in the first $22^\circ 30'$ of its course, the head of the gate will rise only 3-12ths: for to the logarithm of 108 add the sine of $67^\circ 30'$, and from their sum subtract the sine of 90° , the remainder will be the logarithm answering to the number 99; which being deducted from 108 will leave 9; then as 108 : 36 :: 9 : 3—and in like manner may similar calculations be proved as they occur in this article.

OBSERVATIONS ON THE CULTIVATION OF TURNIPS.

To the Editor of the *Agricultural Magazine*.

SIR,

December 8, 1803.

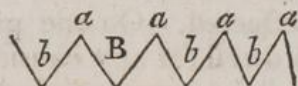
AS various modes of cultivating turnips are pursued in Great Britain and Ireland, and as it is of vast consequence in agriculture to ascertain the most judicious and be-

neficial method of obtaining the greatest crops of this highly useful root, I beg leave to offer some observations on four of these modes of management. Namely, that of sowing in the broadcast way, that of sowing in rows (on a flat surface) with intervals of thirteen inches, that of sowing on *raised ridges* (in rows) with intervals of 26 to 28 inches, and that of sowing as in the second mode, but with intervals of only nine inches.

At an early period the ingenious Mr. Tull, the father of the drill husbandry, promulgated opinions highly favourable to the row culture; these opinions, however, were embraced only by a few agriculturists, and the broad cast method was, for many years, almost universally pursued, and where the soil is of a proper quality, fresh, clean and well pulverized, great crops are, undoubtedly, obtained under this management. But, if it were even admitted that a greater weight of turnips per acre can be raised under this than any other system, it does not follow that it is the most advantageous to the occupiers of land, unless it can be proved that that weight is obtained, and that the necessary operations of hoeing, &c. are performed at as small an expence as in any other mode of cultivation. For that is, incontrovertibly, the most judicious and beneficial method, which not only enables the husbandman to obtain a great crop of turnips, but, at the same time, *and at the smallest expence* renders the soil the most fertile for the growth of the succeeding crops under the best rotation. Let us, therefore, consider whether the necessary operations of hoeing, &c. can be performed, and complete pulverization obtained, at a cheaper rate in the broadcast than in the drill, husbandry, and in which mode of drilling they are most advantageously effected. On one part of the subject it seems unnecessary to dwell for any considerable time, almost every practical husbandman being satisfied that *drilled* can be hoed with much greater precision *and at a smaller expence* than broadcast turnips; and that when a continuance of wet weather prevents the introduction of the hoe till the turnips have arrived at too advanced a stage of vegetation, it is very difficult, nay almost impossible, to hoe the latter with any tolerable regularity, and that under such unpropitious circumstance, even girls and boys of ten to fourteen years of age, can hoe drilled turnips with the utmost exactness.

With proper implements horse-hoeing reaches much deeper, and consequently promotes pulverization in a greater degree than the hand hoe; and though I do not believe in the Tullian doctrine *that earth is the food of plants*, and that comminution causes the soil to enter into the mouths of the roots and fibres of vegetables, yet I am of opinion that the division of its particles, and frequent exposure to the atmosphere, greatly in-

creases its productive powers.* Whether this increase of fertility arises from enlarging the pasture of plants, from the increased power of attracting their food from the air, or from what other cause or what that food is, I shall not, at present, enquire. Let it suffice that well conducted experiments and the practice of agriculturists who are in the habit of founding their opinions on *facts* and accurate observation, have fully proved the utility of complete pulverization. That system, therefore which affords the cheapest and most perfect means of attaining it, is, unquestionably, the most judicious; and as the broad intervals *only* will admit *the proper implements*† and the horse, *without injury to plants*, it follows that drills *with these intervals* should be preferred, *unless it can be proved that the crops of turnips under such management, are materially deficient*. In the broadcast method, and also in that with the narrow spaces between the rows (drills) the dung is spread and ploughed in soon after the land has received three or four furrows, and been sufficiently cleaned. After this the harrows are used, and even when the dung is well rotted, they leave much of it uncovered and exposed on the surface of ground, *in which state it cannot increase the fertility of the soil*; but when it is considered that the general practice is to apply dung in a *half rotten* state, the difficulty of covering it by the plough added to the effects of the harrows, must be still more detrimental to the interests of the husbandman. With the broad intervals the general practice, in this part of the country, is to use a double mould board plough, (drawn by two horses), to raise small ridges, in this form



a being the top, and *b* the interval of 26 to 28 inches. The dung carts are then taken into the ridges in this manner: the horses in the interval *B*, and the wheels in the adjoining intervals on each hand marked *b* and *b*, (and if the distances are proper, the wheels will run in the bottom of the latter, so as not to flatten or alter their form). The dung is laid in small heaps, in the interval *B*, and in a quantity sufficient for spreading into three or five drills, according to the state of the dung and the facility of performing that operation. Another double plough follows *immediately* after the spreading of the dung is performed, and splits the drills along the lines *a, a*.‡ By this operation the dung *in a rough state is completely covered*,

* I do not, however, assert that in some situations, on very friable and sandy soils, *very frequent* exposure may not be hurtful in some seasons.

† It is obvious that with the narrow intervals, pulverization cannot be attained in a greater degree, *by hoeing*, than in the broad cast method.

‡ Many husbandmen both raise and split their turnip drill with a com

may be properly applied to the other for *corn crops*; but unless the land be very fresh, and hath not previously received manure of this description, dung is indispensable in raising a *weighty* crop of turnips; and when I assert that, *in the other modes*, a sufficient quantity of dung for fifty acres, will abundantly manure considerably more than sixty acres *in raised drills with broad intervals*, I assert no more than can be supported by *facts*. The advocates of the other systems, however, contend, that if no more than the quantity of dung which they deem necessary for *fifty*, were applied to upwards of *sixty* acres, the latter would not be equally fertilized for the growth of the succeeding crops.—In answer to this I must again state, that in the raised drills, *all* the dung is completely covered, whereas in the other methods, much of it is exposed above ground, and (by exhalation, &c.) rendered almost useless; that if a greater weight of turnips per acre can be raised with broad intervals, &c. (which I hope to be able to prove in the sequel) more sheep will be required to consume them, and of course, that the land will be proportionably enriched by their dung and urine; and that the methods of hoeing these intervals, give to that part of the land the advantages of a bare fallow, *which greatly excel those of hand-hoeing*.—The methods are these;—two small ploughs (of the common form and 4 to 5 inches broad at the bottom) are fastened together by screws (which increase or diminish their distance from each other, according to the nature of the soil and the size of the drills) and drawn by one horse. By going once along each interval, they remove a great part of the earth *on the inner sides of two drills*, or *on each side of one drill*,* to the middle of it. About two to four weeks after this operation is performed, the small ridge in the middle of each interval, is split and laid up to the turnips by a double mould board plough, also drawn by one horse. In some cases, a skuffler (a plough with three to five hoes) is used either before or after the double plough. These operations are performed when the plants have attained a proper size, may be repeated as often as occasion requires, and are unquestionably much more fertilizing, and *greatly cheaper* than hand-hoeing.

The principal objections which have been urged against raised drills with broad intervals are, that one ploughing in the succeeding spring will not reduce the land to an even surface; that much of it remains unmanured and unproductive; and that when the plants are left at about twelve inches asunder, in the broad-cast and narrow drill modes, an acre contains about twice as many turnips as the same quantity of

* This is necessary where the rows are rather crooked.

ground in the other method.*—The force of these objections I shall now endeavour to destroy.

By drawing the drills *diagonally*, and ploughing the ridges for the succeeding crop in their original direction, the plough will cross the drills at such an angle as to mix a great part of the soil and manure in them with the land in the intervals; and the usual harrowing again, reduces the ground to an even surface *not more retentive of moisture than if the drills had not been raised*. I must also remark, that the greatest part of the dung and urine of the sheep which are folded upon the turnips, falls into the *intervals*; and that the *uniformly* luxuriant and productive crops of corn which are obtained after turnips on *raised drills*, fully prove that the first two objections are ill founded.—That which is yet unanswered, and which relates to the *number* of turnips, seems the most powerful; but I flatter myself, that what I have already advanced relative to hoeing and the covering of the dung, will induce many of your readers to conclude, that turnips grow to a greater size on raised drills with broad intervals, than in the other modes of culture. I must, however, beg leave to say a few words more on the advantages which arise from the operations of the double plough *in laying so much of the earth close to the turnips*, &c.; namely, that whether the food of plants is in the earth itself and the manures applied to it, or whether that food is attracted, or received, by the earth from the atmosphere, the greater the quantity of well-cultivated soil which is laid near, or appropriated to a given number of plants, the more food will be supplied for their necessary absorption; and of course, the greater size or weight they will attain. I am satisfied, from my own experience, that this reasoning is just; having, when all circumstances as to soil, &c. were similar, always observed, that the turnips on the raised drills, were larger than those obtained by the other modes, and that in autumn, their tops so completely overshadowed or covered the wide intervals, as to render a very near inspection necessary to ascertain their growing in rows. But, Sir, with a view of removing from the minds of your readers who have not practised the former method, an idea that the arguments I have advanced are the offspring of *theory* or that they are founded on my remarks *alone*, I may safely say that the cultivation of turnips on raised drills with broad intervals, has been for a great number of years the practice of four-fifths of the occupiers of land in much the greatest part of

* When turnips grow in drills, with thirteen inch intervals, and are left in the rows at the distance of twelve inches, an acre will contain about 40,200. When the intervals are twenty-seven, and the distance in the rows eleven inches, it will contain about 27,100 turnips; supposing the crop in each mode *a full one*.

this county, and the southern counties of Scotland. A strong reason for concluding not only that these cultivators are convinced that the turnips grow to a greater size in this than in any other mode, but that it is *throughout* the most advantageous system. *The farmers in no other district in the kingdom pay such high rents for lands of a similar quality, and therefore none are under a greater necessity of exerting themselves to discover and pursue the most profitable management.* I am aware of the diversity of opinion among practical husbandmen on this *greater size*, and on its being counterbalanced by the greater number of turnips which are obtained by sowing broadcast, or with narrow intervals. For my own part, however, I am pretty well satisfied *from accurate observation*, that when the soil, condition, time of sowing, &c. &c. are equal, the turnips in the drills, with thirteen intervals, will not exceed six inches diameter, while those in the raised drills and broad intervals, will be from eight to nine inches, *upon an average*.—The difference of an inch on each side of the turnips, (or two inches diameter); *appears*, indeed, but a small increase of size, but if those which are spherical, (and the best kinds are nearly so,) be exactly weighed, it will be proved that one of eight inches diameter, is nearly equal in weight to two and an half of six inches diameter (each). But to determine this point with precision, we may call to our aid one of the pillars of truth—*mathematical investigation*, which has demonstrated that similar solids are in the triplicate ratio, or, in other words, that *their weights are as the cubes of their diameters*. Therefore the weight of one turnip of eight inches diameter, will be to that of $2\frac{1}{2}$ of six inches diameter (each), as 512 to 540; the weight of two turnips of six inches diameter, will be to that of one of $8\frac{1}{2}$ inches diameter, as 432 is to 614; and that of the 40,200 to the 21,100 (mentioned in the preceding note) as 86 to 129, nearly; consequently when the latter are worth 6l. the former will be worth only 4l. per acre.—I say *consequently*, because I conceive that the ratio of price should be equal to that of the weight. The truth of this position, however, has been ingeniously controverted by the advocates for the narrow intervals, especially by two agriculturists, in the county of York, where, I understand, that mode is much practised. Their principal arguments seem to be, that large, are not so nutritious as small, turnips; and that the former always receive the most injury from severe winters. In this part of the country, however, the purchasers and consumers of turnips generally prefer those of a large size, especially for autumn and winter consumption; alledging that cattle and sheep improve better upon them than on small turnips, and therefore the almost universal practice in this district is, to use every means in our power to increase the size of our turnips.—

I am of opinion that the nutritious or feeding nature of turnips will depend on its texture and succulence, and that the degree of this succulence is, at all times, proved by the comparative *specific gravity*. With a view, therefore, of ascertaining their quality, I have, in autumn and winter, repeatedly weighed turnips, in every respect similar to each other, except with regard to size, and invariably found this result, viz. *that the weights of large and small turnips are in the exact ratio of their dimensions*.—If their *specific gravity* be at any time, different, it will probably be in April, and, perhaps, a part of March.—As to the *rotting* of the turnip, it will, I believe, be found (by attentive observers), on an average of years, that those of a middling size are as subject to the baneful effects of intense frosts, as those of greater dimensions. But admitting for the sake of argument, that these objections to large turnips are well founded, it should be recollected that they cannot reasonably be applied to more than about one fourth or one fifth of our crops, and that they may be obviated by having a few acres of late sown turnips, or of *Ruta Baga*,* for supporting the stock during a part of the spring.—I pay great deference to, and lay considerable stress upon, the acquirements of the chemical philosopher; I am, however, of opinion that they are not so well calculated to improve the art of husbandry, as accurate accounts of the practice of able and experienced agriculturists, and, therefore, that such communications as that in your October Number, signed P. J. should be highly estimated, though the results of *comparative* trials would be still more satisfactory and instructive. This correspondent says, “your Magazine for November 1802, contains a very correct account of the mode of cultivating turnips in Norfolk, which, I believe, stands foremost in the management of that valuable plant. I have not seen the Magazine he refers to, but from other sources of information, I understand that the modes of cultivating turnips in upwards of three fourths of the county in question, are those of sowing broadcast, and in drills of narrow intervals; your correspondent will, therefore, I hope, pardon me, if I dispute the truth of the assertion, “that Norfolk stands foremost in the cultivation of turnips.” That the farmers of that county stood foremost in that important branch of rural economy, about thirty or forty years ago, will not, perhaps, be denied; but when their present management is compared with the excellent

* From experience in raising this useful root, I am inclined to think that from the 16th to the 25th of May, is the most proper time for sowing it. Its *specific gravity* I have repeatedly found to be in autumn and winter, about 12 per cent. more than that of common turnips, and as it returns its succulence much longer than the latter, it is probable that in April the difference will still be greater.

practice of this part of the country, and when these *facts* are adverted to, namely, that the turnip crops of Norfolk have, for many years past, been much less productive than those formerly obtained, while in this northern district a great part of our turnip soils which *under the broadcast method of culture* produced but middling crops, and were said to be "tired of growing turnips," are now *under the management of raised drills with broad intervals*, rendered *extremely* productive, impartial agriculturists will dispute that they (the Norfolk farmers) have, at present, any just claim to *superiority*, and will, probably, even take the liberty of placing them in a *secondary station*. Some husbandmen have imputed the diminution in the weight of the Norfolk turnip crops, to the lands of the county having been deteriorated, by too frequent aration; some attribute it to too copious and frequent application of calcareous manures, and some to other causes; and as it is certainly of much consequence that the agricultural world should be *particularly* informed, as to the real cause of this *falling off* in the *once* celebrated county of Norfolk, I should be glad if your correspondents in that part of the country would communicate their sentiments on this subject, through the channel of your publication. If I had deemed it prudent to sow turnips without *raised drills*, I would have preferred intervals of thirteen inches, to the mode practised by P. J. after the fly destroyed his young plants, namely, *to drilling with nine inch intervals*; and though I would have had only about two thirds of his number of plants, would not have entertained the smallest doubt of not only obtaining a greater weight of turnips per acre, but of saving one third of *his* expence in hoeing.

If depredations similar to those mentioned by your correspondent had been committed on my *raised drills*, probably, a mode similar to his, *with respect to depositing the seed in the ground without a fresh ploughing*, would have been pursued. Two sowing machines (with a large hoe placed before each, to destroy weeds if necessary), held by two men, and drawn by one horse, would have been moved along the drills of upwards of eight acres per day. This expence would have been smaller than that incurred by P. J. and might have been still lessened by a machine lately introduced here, which, with *one* man, sows *two* drills by his causing the horse that draws it, to go *once* along each interval. Though I apprehend I have already *encroached* on your time, I must beg leave to remark that each *row* of your correspondents plant's would require as much labour in hoeing (supposing the plants in the drills left near a foot asunder) as one on raised drills with broad intervals; consequently the rows contained in an acre of the latter, may be well cleaned, &c. at about *one third* of the expence of those in the same quantity of ground under *his* mode. This

abridgement of labour, so greatly expedited the hoeing, as to enable the agriculturist to get sufficiently forward e're the plants become too large for that operation, the advantages of which (and the scarcity of hoers in some of our *extensive* turnip districts), are well known.

I am Sir,
Your's, &c.

AGRICOLA NORTHUMBRIENSIS.

ON THE ABILITIES OF VETERINARY PROFESSORS.

To the Editor of the Agricultural Magazine.

SIR,

BEING settled as a Surgeon, in a northern quarter of the kingdom, at a considerable distance from the metropolis, where many horses are bred, and kept for sporting purposes, I was solicited by a number of gentlemen, about seven years since, to undertake the veterinary branch of our profession, upon the following very just and liberal condition; that what appeared by my books, to fall short of a certain annual stipend, should be allowed to me by the subscribers. With some hesitation I stated that the Veterinary College was not in being when I attended the London hospitals, that in consequence, I did not think myself qualified; the answer I received, singular however it may be deemed, was, that *such defect was in the opinion of the parties, a recommendation*: upon this encouragement I commenced veterinary practicer; and have never yet been under the necessity of calling on the bounty of my patrons. Their libraries afforded me the necessary guides, amongst whom I soon discovered the practical and original writers: on their authority and my own diligent practice, (being bred a horseman), I have securely relied, and my endeavours have been rewarded with a success as satisfactory to my employers as gratifying, in all respects, to myself.

It will be perceived by the readers of your Magazine, that my communication was excited by the perusal of a letter in the last number, subscribed Veterinarius; the sole purpose of which letter appears to the most unexperienced eye, from its concluding paragraph, to be *the recommendation of a certain work*. On this letter I beg to make a few remarks, premising, that as a subscriber to, and constant reader of, your Magazine, I should be glad to find, much oftner, a part of it dedicated to veterinary subjects; not indeed to mere uninteresting, or *interested* common place repetitions, but either to important speculation, or useful fact.

What possible utility, light or novelty, Veterinarius could suppose himself capable of conveying in an account of the

Institution of the Veterinary College, I can have no conception. So often has this been repeated, in various publications, that he, if fond of compilation, might even as well have given us a history of the pipe office from the annual red book. The Society of Odiham, however, which he states obscure, was composed of some of the first people in the country, and Saintbel was introduced by two powerful noblemen.

Veterinarius's knowledge of Saintbel is strangely defective, nor can any thing be more unfounded or less liberal, than the assertion, that he was wholly unacquainted with the pharmaceutical art, or the art of healing. The fact is, and I had it from more than one of his intimate friends, in this country, that, as a medical man, he possessed the common knowledge of a surgeon, and that as to shoeing horses, he had neither the practical knowledge of a horseman, nor the mechanical practice of an operative farrier, as was generally supposed; all he knew on the subject was from the lectures of the French College, in which he had been bred; the practice of which, right or wrong, was established by authority, in the military system of France. The reason of his ill success here was two-fold; it was soon perceived that his knowledge and practice were rather calculated for the army exclusively, than for general use; the patronage of the public, he could thence, never obtain, and he had no interest, without which there can be no army patronage. It was said that Saintbel was ill-used, in being called over hither, and then deserted, but it is probable he had too much conceit to receive any benefit from that instruction, without which his talents could be of very limited use.

A most respectable medical committee is enumerated, who made the arrangement of our Veterinary College, but it has ever been a subject of regret with the public, that amongst those names, so respectable in science, there had not some been found, who possessed at least a degree of that particular science and practice, which peculiarly appertained to the institution about to be founded. Mere army practice and army shoeing, although it may be there enforced by authority, will never succeed generally in this country; nor could there have been a more injudicious step in the professor, than his almost literal adoption of the lectures, opinions and practice of the French College. To this cause we may attribute the confined patronage of our Veterinary College, and the strong prejudices of which the professor so feelingly complains, whence the necessity of a constant parliamentary support.

There is another reason which has confirmed the public dislike. I know not how many pupils of the college, within these few years, have ventured to publish books, not indeed of any thing they themselves practised, but a mere trifling re-

petition of what they call Veterinary Instructions, and which, they pretend, are entirely new, although they may be traced, either in French or English, for more than fifty years. This deception has been attempted to be supported, in a great measure, by the adoption of the new medical Nomenclature, and the writer who puts down *sulphate of soda*, instead of the old fashioned name, Glauber's salts supposes he shall, by that flourish, pass for something original. But there exist several causes fatal to the success of authors like these. That part of the public uninterested in horses, will not open their books, and real practical judges of horses have a certain intuitive knowledge, by which, on a slight reading, they detect the writer who is deficient in that respect. They throw him down instantly, well knowing no good is to be expected from him.

As to the massive work of Mr. Delabere Blaine, which is rated above that of Professor Odeman, by Veterinarius, it is to be remarked first, that it contains the most fulsome panegyric (such is the style of the times) on the said professor and his works, which, in good truth, are generally drawn from the same source with those of Mr. Blaine. That Taplin is an absurd, rhapsodical compiler, the world has long known, but they have also known something of Taplin, which they could never discover in Mr. Blaine—namely, that he had many year's practical experience in horses.

I am, Sir, yours, &c.

Doncaster, Dec. 3.

VETERINARIUS ALTER.

A SAFE AND EXPEDITIOUS METHOD OF CLEANING THE CHIMNIES IN FARM-HOUSES WITHOUT EMPLOYING CHIMNEY SWEEPERS.

To the Editor of the Agricultural Magazine.

SIR,

A Lady no less remarkable for her humanity than for her erudition, saw the degree of distress and misery to which an order of the community were reduced, and applied her property, and her talents, to ameliorate their condition. I mean the late Mrs. Montague, and I refer to the Chimney Sweepers, who on an annual day, received substantial proofs of her hospitality.

The farmer will not think it wholly immaterial in the retired situation to which he is often consigned, if a substitute can be found for this class of people, by which he will avoid the inconvenience of sending to a remote town for assistance, and by which he will be enabled to preserve the better relicts of his culinary fire for the salutary purposes of manure, to which it may be so advantageously applied.

I have heard it has been proposed that the legislature should

interfere, in order to prevent this offensive, slavish, and destructive employment of the human species. The British Parliament cannot be expected to interpose in order to gratify the wishes of every idle declaimer against public institution, but frequently, those who are most anxious to require this solemn interference of public law, are capable of remedying the evils of which they complain, within the limited circle of their own family, and their patriotism does not very frequently travel beyond this contracted sphere.

First with respect to builders. The extreme awkwardness of the construction of chimnies has been long known to the experienced architect: if chimnies are constructed of regular dimensions from top to bottom, they may be cleaned of every foul lodgment with great facility, by any soft elastic substance drawn either up or down them: but it is obvious for this purpose, that the circular form will be most convenient. In the square and oblong form the elastic substance applied, cannot so readily be accommodated to their shape, and therefore the soot would be subject to remain in the angles, but this inconvenience is not so great as might be expected, because the smoke ascends in a circular form, and never occupies the angles of the chimney but when forced into them by obstructions to its natural current.

The inside of every chimney should be well plastered with materials that will take a smooth surface.*

If this little share of attention were paid to the building of chimnies, a very trifling extra expence would be incurred in their construction, and it is obvious no great ingenuity would be required to remove from them all impurity.

Mr. Clavering says, no chimney ought to be less than ten inches square, and few will require to be greater than sixteen.† If this be confirmed by experiment, a very few sizes might be given as general rules, and, if observed by builders, a very few implements would be required by the sweepers to answer the purposes of their trade. For instance, suppose the kitchen chimney sixteen inches square, parlour and first floor fourteen, bed-chambers twelve, attics ten, thus four tools to fit these chimnies are

* A good plaister is made as follows: to two bushels of good stone lime, add one bushel of fine drilt gritty sand, and a like quantity of sea-coal ashes, or brick dust; skreen them fine, beat and mix them together, for the first coat; and, when well set, put on the following for the second or finishing coat. Take fine white plaister (commonly called plaister of Paris,) mixed with stale small beer, and mix it well in a tub to a proper consistence; then lay on a fine thin coat of it upon the other, carefully worked in, and as smooth and even as possible. In a short time it will assume the hardness of stone, and a polish almost equal to marble; a funnel thus executed and finished, can never be the cause of smoke, and if the expence be a little more, to a gentleman who desires a well finished habitation, it can be no object.

† See an "Essay on the Construction and Building of Chimnies, &c. By Robert Clavering.

all that will be necessary. And if circular funnels be constructed, an equal number of circular brushes would be required.

But we are not always to suppose that chimnies will be built on purpose for one design: some respectable farm houses that have stood a century, and are likely to be comfortable mansions for a century more, need not be altered in order to obtain the accommodation to which I now refer. Chimnies in such buildings are often capable of being rendered perfectly clean by the expedient I have recommended. It is true, that at the bottom, they are sometimes of a sufficient width to receive the whole assembled family, but this prodigious width only extends commonly about seven or eight feet, to which height a man with a birch broom can easily procure access.

What is this elastic substance which is applicable to such a purpose? It is the simplest thing in the world. The farmer has only to send to the neighbouring common, or to his bushes, to procure a quantity of furze or elastic vegetation of any kind; to connect this with a long cord or string, and to draw it down and up his chimney, but as the directions of the author we have mentioned are very minute and explicit, I will give them nearly in his own words.

The method he would recommend for sweeping circular funnels, is to have a strong round brush, made full to the size of the funnel, and about two feet in length, with a staple at each end, for cords to be fastened to: if this is drawn up and down the chimney by a man at the top, and another below, the chimney will be swept clean in the most perfect manner, as it is practised in the North of England, where I have been; and as I am informed, in Scotland and Ireland. A loose bunch of furze will clean a square funnel equally well. The ready way to perform this operation, is, to drop the lower end of the cord down the chimney to a man below, with a piece of lead or stone fastened to it, and the brush to be put in at the top, and so pulling up and down by degrees all the way, which will perfectly clean the chimney. If the man below ties his end to a mop stick, he may play it up and down behind a chimney cloth, without injury to his eyes. This method is preferable to sweeping by boys; for the plaistering on the inside of the funnel will not be hurt by the brush, but will be liable to be broke by the iron scrapers and brush heads, who will also be tempted to dig holes in the plaister for their feet. The circular funnels will seldom want sweeping, for being smooth and regular, the soot will not adhere to the sides, as in the corners of common square funnels: however, no chimney that is used ought to remain unswept once, at least, in the year. The late act of Parliament respecting fires in chimnies dictates this precaution.

I hope this subject, which is not only connected with the comfort and convenience of the farmer, but with the most obvious principles of common sense and of humanity, will not be considered unworthy a place in your useful and instructive miscellany.

I am, Sir,
Yours, &c.

Dec. 7, 1803.

ARÆ ET FOCI AMATOR.

VETERINARY ART. LETTER II.

ON THE BONES OF THE HORSE.

To the Editor of the Agricultural Magazine.

SIR,

IN my last communication I took the liberty to submit to your attention, the nature and circumstances of the institution of the Veterinary College; and my reason for so doing was, to give every means of publicity in my power to any establishment, immediately connected with agriculture, intermediately only with the pleasures and parade of life. In a neighbouring state these pursuits were engaged in, not from their utility in the duties and business of produce, but from their relation to the duties and business of the field of battle: it is to the honour of this country, that the art which has been sedulously promoted in France, for the purposes of human destruction, has been carefully cultivated in this country for the purposes of human preservation; to facilitate and enlarge the means of the subsistence of mankind.

I observe, Sir, in the address to your Correspondents at the conclusion of your last number, that I am not to suppose, because you have inserted my first communication, that my subsequent ones are to be honoured with the same notice. "We cannot admit (you say) the conclusion of his first paragraph to be precisely correct, that the insertion of his first letter forms any thing like an engagement, to insert his future ones. Their introduction must depend not only on their own merit, but upon the suitability to the nature and design of our publication."

I am not displeas'd with your frankness, and am perfectly satisfied, that to the fullest extent the rule you have laid down should be carried into execution, and if I do not expect always to be successful, I will use my best endeavours to restrict myself within the limits you prescribe.

I do not propose precisely to pursue the order adopted by the more diffus'd naturalists on the subject to which my studies have been directed, because, as I have before told you "this review, I design to compress into twelve successive numbers." I shall consider animals as compos'd of solids and fluids, and

to the first in the present and a few succeeding numbers, I shall confine my attention.

The solids either respect the bones, or the ligaments which connect them; the muscles which give exterior form; the nerves, the vessels which secrete the fluids, and the viscera or entrails principally concerned in nutrition.

A subject purely anatomical, it is not easy to separate from the terms in which that science is conversant: in order therefore, to avoid the terms which are purely technical, I shall treat of the osteology, or boney parts, of the horse, not particularly, but generally; for generally only, they are known in the stable, the nomenclature of the particulars is confined to the College. The first column denotes the situation of the bones, the figures imply the number of bones in each situation.

Bones of the skull	11
Bones of the face	29
Teeth	40
Bones of the tongue	1
Bones of the internal ear	8
Bones of the spine	49
Bones of the thorax	37
The pelvis	2
Shoulder	2
Arm	2
Fore arm	4
Carpus of the knee	14
Metacarpus	6
Phalanges in the anterior extremity	10
The thigh	2
The leg	6
The tarsus or hock	12
Metatarsus	6
Phalanges in the posterior extremity	12

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I admit that the words are wholly inadequate to describe the beautiful variations in the economy of nature, and especially in the construction and form of this extraordinary animal. The curious and inquisitive student I must refer to the anatomy of the animal itself, but those who wish to acquire some knowledge of him, with a less sacrifice of time and indulgence, I may direct to those numerous engravings and designs, which will for ordinary purposes, explain with sufficient accuracy, the intricacies of osteology.

I shall conclude the present communication with some observations on the Teeth, on which Jockies and Farriers affect to be so well instructed.

Quadrupeds in general have two sets of teeth: the first are temporary, the last permanent. They suffer none of the inconveniencies which arises from the process of teething in the human species, and the rudiments of both these sets are formed nearly at the same period, so that when the weaker, by time or accident, are extracted, the stronger rise rapidly to supply the vacancy. This wise provision of nature has been abused by the artifices of Jockies; for, in order to make the animal appear to have arrived at the years of vigour and maturity, they draw the colt's teeth, and the second set quickly appears to make up the deficiency where the violence has been committed. In such cases, judgment must be employed to ascertain the general appearance of the other teeth, by which the crafty design will be easily disappointed. By explaining the ordinary course of nature, in respect to these bones I hope the inexperienced reader will so clearly discern her operations, as, on the inspection of the animal, to be able accurately to determine his age, and of course the stock of power he may fairly expect to be applicable to the purposes of utility and amusement.

The Progress of the Teeth in the Horse, by which the Age may be correctly known.

A colt is usually foaled with six grinders in each jaw.

In ten or twelve days he puts out two nippers in front, above and below.

In a fortnight after, the two middle ones appear; and in two or three months afterwards, the corner nippers are put out.

From this time, till he be a year old, no great changes take place, excepting that the cavity in the nippers begins to be slightly filled up, and appears worn, and the neck of each tooth is more distinct. He has also now four grinders on each side above and below, three of the milk set, and one permanent.

At a year and a half, the cavity in the nippers is nearly filled up, and he has now three milk, and two permanent grinders above and below.

At the age of two years the small remains of mark in the nippers are effaced, and they appear like the same teeth in an eight year old horse; at the same time likewise, the first milk grinder above and below falls.

About two years and a half, and always before he is three, the two front nippers fall out, and as the permanent ones are some time coming to perfection, a colt experiences difficulty in grazing.

Between the third and fourth year, the two next nippers appear above and below, and the second milk grinder disap-

pers, at the same time leaving him his molar teeth on each side above and below one colt, and five of the permanent set.

At four and a half years, the two corner nippers fall out to give place to the last set. The last milk grinders also do the same, and soon after the tushes appear. From this time he is no longer called a colt, but a horse, and if a female, she drops the name of filly, and assumes that of mare. It is about this time a horse is supposed to be becoming useful, arriving at his strength, and being capable of enduring fatigue.

At five and a half, in a natural state, the internal wall of the corner nippers is on a level with the rest, and the tushes fully appear, which now present a pointed body, with the outward surface round and smooth, but the inner part concave.

At six years old in general, the black mark, or hollow in the two front lower nippers, which before was wearing, now becomes quite effaced.

At the age of seven, the same mark or cavity in the two next, or intermediate teeth of the posterior jaw, is also completely worn out, and the tushes are somewhat blunted.

At eight the cavity in the lower teeth is lost. At this time a horse is said to be aged, and to have lost his mark. But these cavities in the upper nippers, are found to disappear more slowly; and at eight, when the whole of the others have become effaced, only the two front upper ones are filled.

By a little regard merely to the four last explanations which refer to the period, when the tushes are forsaking their ruby cloathing, we trust any gentlemen will be competent to escape the mercenary subtleties of the designing, by ascertaining the period of vigour and utility, from immaturity and weakness on the one side, and from age and infirmity on the other.

I am, Sir,

Yours, &c.

Westminster, Dec. 8, 1803.

VETERINARIUS.

For the Agricultural Magazine.

ON GYPSUM, AND ON ITS MINES, NATIVE AND FOREIGN.

SOME of our Correspondents have favoured us with observations on the species of manure called Gypsum. The following remarks on the popular distinctions of that mineral, and on the places where it may be obtained, we derive from the information of Mr. Charles Clark, of Milbank-Row, Westminster, and under his authority, we submit it with satisfaction to our readers.

The loose or friable sort, particularly white, is found in Poland and Saxony, and other parts, to the northward.

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The fibred or thready sort, commonly called tale (though improperly so named, because the true tale is of another quality) is found in various parts of Europe, particularly in England.

The scaly or granulated sort, is found in various colours all over Europe, and North America, white, red, grey, and a light yellow; this last is found at Montmatre, near Paris, and on that account, is called the plaster of Paris; the hard white sort has somewhat the appearance of loaf sugar, fine, and of a close, firm, compact texture, and when broken shines like crystal.

The spar gypsum, or the pure selenite earth, is of various colours, and is sometimes found transparent; is a very heavy stone, as if intermixed with something metallic; but tried experiments have found to the contrary.

The stalactical gypsum, of no visible particles, is of different colours, and of various forms and figures.

The crystalized gypsum in general is of a sparry sort, and of different colours, some transparent, and of various forms. The crystallized sort, which in some parts of Russia, is made use of to answer the purpose of glass, is not of the order of earth called gypsum, but is named mica; is a transparent sort, commonly called Muscovy glass, and is used for windows, and upon all occasions where panes of glass are wanted in those countries.

All the foregoing sorts of gypsum, if not intermixed with any other particles of the earth, will not ferment with the acid of nitre, or strike fire with steel, and are proper for manure.

The alabaster gypsum is solid, and of no visible particles; is very easy to saw and cut, but is not always saturated with the acid of vitriol to answer the purpose of gypsum manure, there being some alabasters that will ferment with aqua-fortis or acid of nitre.

The gypseous earth, as observed before, is found in various parts of Europe; particularly Russia, Norway, Germany, and France; it abounds in England, and is plenty in Yorkshire, Derbyshire, Nottinghamshire, Leicestershire, and Lincolnshire, where there are large pits of it; also in most of the cliffs of the Severn, particularly at the old passage in Somersetshire.

A very fine semi-transparent solid sort is found in Derbyshire, with other varieties.

The fibred or thready sort, that which is usually called tale, is found in the same pits of gypsum before mentioned, also by itself in a variety of places.

Selenites of many kinds abound in England in clays; these arise from the vitriolic acid being in some degree (as we now

ticed before) intermixed with clay; and the calcareous principle being formed from a sediment which the water carries along with it, forms the selenite or gypsum: this may be one cause why clayey earths become so productive as a manure, and not before attended to by our farmers.

Very fine gypsum has been dug from the salt rocks at Nantwich in Cheshire.

The selenites, called rhomboidalis, from the figures it makes the appearance in (a rare fossil in other countries) is frequently found in England; but Shotover-Hill in Oxfordshire, is famous for them.

The isle of Sheppy affords a kind (peculiar and particular to that small spot of ground) fibrous, and accreting in radiations like stars.

The manner of preparing the gypsum for manure, after being satisfied that you have the right sort, that is, such that will not ferment with aqua-fortis, or strike fire with steel; break the large lumps into small, and those into still smaller in a stamping-mill, then grind it in a grinding-mill; the finer it is pulverized the more it has the power of attracting moisture; it then may be sowed upon the soil. E.

THE RESULT OF AN EXPERIMENT ON SOWING BARLEY.

To the Editor of the Agricultural Magazine.

SIR,

THE result of any experiment relative to Agriculture in general, and the drill system in particular, if I may judge by my own sentiments, cannot but be interesting to the greater part of your readers. I have had reason to expect that some account of an experiment lately made by a neighbour of mine, would have made its appearance in your Magazine some time since, but not having seen it hitherto, I venture to send you the following statement, as related to me by himself. To ascertain the comparative advantage of the drill and broadcast methods of sowing barley, an inclosure was selected which had borne a crop of wheat the preceding year: in this three equal portions were measured out, of nearly half an acre each; of equal quality, as far as could be judged, and treated precisely alike previous to seeding them.

On the same day in last March, were sown on No 1. 16 pecks of barley by hand, and ploughed in by a one-horse wheel-plough, as is the usual practise throughout a great part of Norfolk. On No. 2, were drilled 12 pecks of barley, at 6 inches intervals, and on No. 3, 12 pecks, at 9 inches intervals; the last hand-hoed twice. The soil a sandy loam. The

respective produce of each, carefully laid and threshed by itself, was as follows:

Of No. 1	15 Bushels.
2	19 Ditto, 3 pecks
3	19 Ditto

There was rather the greatest bulk on No. 2, and the quality of the barley on that of No. 1, was a shilling per quarter, better than that on No. 3.

Hence it should appear that drilling at 6 inches intervals, is the most productive method of seeding land with barley. I point this out the more strongly, as militating directly, Mr. Editor, against the opinion which you advanced in your last No. (page 338) when noticing my remark on the introduction of nine cells instead of six, in Mr Cooke's later editions of his drill machines.

I need not observe how much depends upon the nature of the soil. If as on some fertile spots in this kingdom, we were to drill any grain whatever on our sandy fields at the distance of two feet, at even eighteen inches from row to row, not all the hand or horse-hoeing in the world would produce much more than one half of the quantity now reaped, when sown at half those distances. I am much obliged by the information of P. J. (Page 352, last number) respecting the drill-coulters, and having felt the inconvenience he alludes to very strongly this last season, shall certainly take advantage of his hint for the improvement of mine.

ON THE FAILURE OF CLOVER.

A Norfolk Farmer enquires (Page 331. May 1803) the reason "why clover so often fails and dies away in the winter and spring seasons, after showing so full a plant the preceding harvest." To this query, a Berkshire Farmer undertakes to reply; but it appears to me that he has totally misconceived the Norfolk Farmer's meaning. The question I apprehend is put "why does clover die away the *first* winter after it is sown? The reply only accounts for its failing the *second*. There can be no doubt that the bite of sheep upon the crowns of the plant is highly destructive to it, if permitted too late, and will effectually do away all possible chance of reaping a crop the *second* year. But, says the Norfolk Farmer, what causes it to perish the first season, even long before it is touched either by the scythe or cattle? Unfortunately for this county, the representation of the Norfolk Farmer is too true, I may say, seven springs out of ten. If any of your Correspondents can give us a preventative for this defect, he will do us a much more essential service than the Berkshire man has done by his diffuse discussions and quotations, which I humbly conceive do not at all relate to the subject of enquiry.

Fakenham, Dec.

12, 1803.

I am, Sir, Yours, &c.

AGRICOLA NORFOLCIENSIS.

ON THE IMPORTANT IMPROVEMENT IN THE MANUFACTURE
OF CORDAGE APPLICABLE TO AGRICULTURAL PURPOSES.

To the Editor of the Agricultural Magazine.

SIR,

I Apprehend that every important discovery applicable to the purposes of Agriculture, is within the scope of your publication. The most useful inventions require a tedious lapse of time, and a long exercise of patience, before they acquire notoriety: to those, therefore, who are not acquainted with the slow progress in the affairs of mankind, it will appear astonishing that Captain Huddart's contrivance of a species of rope almost indistructible, either by wear or accident, should scarcely be known in the country.

All experimental farmers are acquainted with the heavy implements that have been introduced for the business of the field, and a principal objection to the drain plough, mole plough, scarrificator, shim, and a great variety of other machines, is, that either the animals that draw them must be loaded with heavy chains, or that the work must be obstructed by the frequent snapping of the cords, so that the day is lost in the repair of tackle, instead of being devoted to productive duties.

The patent for this species of rope was taken out as early as the year 1793, by the person I have named, who trades in the vicinity of Sunderland, under the firm of Huddart, Wigram, Wolmer, and Turner, and so little interest have I in the recommendation, that I do not at all know who are their agents in town for this business, but by application to Mr. Wigram, who is an eminent merchant and East India owner in the city, information may be easily obtained.

In order to explain the advantage of this invention, I will first give some account of the way in which common ropes are formed, I will then point out the inconveniences resulting from this form, and afterwards shew how these are avoided, and the benefit of Captain Huddart's discovery.

The common rope is formed of filaments or threads which again are combined into what are called strands, and a number of these strands united, compose the rope. The filaments or threads which are technically called yarns, when combined in the strand, are twisted, one over the other in such a way, that the exterior parts have the greatest degree of tension. So likewise when the strands are connected to form the rope, they are twisted in the same way, so that the exterior part have the greatest degree of tension. You will observe, therefore, Sir, that a rope thus compounded has the internal part contracted into folds or plications, that if it be composed of a thousand yarns gradually as they recede from the centre, this contraction decreases, and the tension increases, until you

come to the outside or superficies of the rope, where the tension is the greatest of all. From this short explanation it will in a moment occur to every intelligent mechanic, that whenever any weight operates powerfully on the rope it will first be borne by the exterior part, that the outer strands will consequently break, that the weight will be next supported by the strands adjacent to the outer strands, which the weight will again break, until it press the interior strand, and breaking that last of all, it is sustained no longer. The mischief of a rope of this construction is obvious. If all the strands had been capable of operating together, the rope would probably have been effectual for the purpose to which it was applied, but as only one portion of its power was called into action at the same time, it must gradually be fractured in the way I have described, until it was reduced to the last filaments.

In the manufacture of rope under the direction of Captain Huddart, this detriment is avoided. He has contrived a perforated plate, and a cylindrical tube, by which all his yarns are disposed in concentric circles; so as to make his ropes a complete and uniform mass of strength. For this purpose, all the strands of which his cords are composed, are of different lengths. The exterior are the longest, and they gradually diminish in length to the centre yarn, which is the shortest of all. It will be apparent, that this variation in the length is necessary for the purpose; because the outward ones going round the inner ones, must either be the longer, or else must be stretched so as to lose that substance necessary to make them secure.

I do not think it necessary to be more minute, for a work of this kind, in the explanation; not because the subject is deficient in consequence, but because it would lead me into that kind of mathematical illustration, which would be more adapted to the abstraction of the student than to the habits of the farmer. It will, however, be material to give the result of an experiment made by Mr. John Rennie, an ingenious engineer, well known for his superintendance over many public works in the kingdom. He has made a series of trials from the 25th of October, down to the present month of December, to one of which I shall confine myself. A rope was formed of the same hemp, one end of which was manufactured agreeably to the patent, the other according to the common method. The former sustained a weight of tons 17. 5. 1qr. the other, equal in dimensions, supported only a weight of tons 8. 13. 1. 4lb. The former gave way with a crash all at once; the other snapped gradually, beginning with the outside yarns, and terminating with the centre one. This single experiment, faithfully given, precludes the necessity of all comment on the comparative power. It may how-

however be worth while to notice a convenience in the employment of this species of rope, which will surprize those who have not become acquainted with its structure. It will wear like a mass of steel. When the outside is injured by friction, the interior part, being wholly independent of the external strands or layers, is perfectly sound; and in this state it continues until it be worn to the last thread.

In the navy of England, this cordage has been extensively employed; but it has not yet been applied, except in a very limited degree, to the purposes of trade or agriculture; and yet the numerous accidents which daily occur, and the multiplicity of impediments which arise in laborious business, should sufficiently recommend it to public notice.

If this species of rope be substituted for the ponderous chains to which we have alluded, the expence of harness will be reduced to half its present charge, and the animals will be permitted to perform their labour, without any other incumbrance than what necessarily arises from the pressure with which they have to encounter in the business of the field.

In hay and straw harvest, your readers well know the calamitous accidents which result from the fracture of the cords in drawing the produce from the field, when there is too often carelessness in the loaders, and almost always great inequalities in the surface, so as to make the utmost means of security expedient, but it is useless to recapitulate those numerous instances where attention in this particular will be beneficial, since none but the most inexperienced can be doubtful of this advantage.

I am, Sir, yours, &c.

Dec. 18, 1803.

P. C.

THE ABSURDITY OF ADOPTING INDISCRIMINATELY FOREIGN PRINCIPLES OF AGRICULTURE.

To the Editor of the Agricultural Magazine.

SIR,

YOU have very frequently mentioned foreign agriculture, and some of your correspondents have boldly declaimed on the prodigious advantages England would derive from such a source of information. I am an old farmer, and have long had an old prejudice, that England is the best country in the world. With this sentiment strongly on my mind, I am unwilling to range among the wilds of Muscovy, and beneath the forests of Norway, to obtain that information which I am capable of deriving from my honest neighbours, over a comfortable pipe, at the sign of the Plough. But to satisfy your

itinerary friends, I will give them a specimen of Swedish agriculture, which I learnt from the confession of a native of that country, when negotiating a small contract for the cavalry, at the great stone building looking into St. James's Park, with a clock at the top of it.

In the Swedish forest of Valterd, which has been said to be 300 English miles in length, and 70 in breadth, the mode of raising grain was, some time back, the most slovenly that can be imagined to have been ever practised by barbarians or savages. It was to burn great quantities of wood standing upon the ground, and then cast some seed corn among the ashes, without any ploughing or other manuring; whereof, added the relater of the fact, they have one crop and no more.—The wolves in that forest were, by the accounts of the Swedes themselves, calculated to be twenty thousand.

The symptoms of surprize I expressed, occasioned this communicative Swede to add some qualification to these remarks, so unfavourable to his country. He subjoined to his account, therefore, that although a large portion of the specie of the country had been annually exported for the supply of grain, and of all the most essential articles of human subsistence, yet that much exertion had been recently made for the improvement of the unfriendly soil; and that an abundant harvest has been returned for the laborious duties of the field; so that not only a temporary source of wealth will be secured, but a durable foundation will be raised for public prosperity.

The object of this letter is, not to countenance the entire exclusion of foreign information on agriculture; but to lead your friend Chorographus, and some others with whom you are connected, from a wild and adventurous exercise of rampant curiosity. Foreign principles, like exotic plants, may sometimes acquire vigour, and flourish on English ground; but by far the greater portion will be sickly and unproductive, and will disappoint the wishes of the laborious collector.

I am, Sir, yours, &c.

Aberford, Dec. 3, 1803.

JOHN HODGES.

ON THE AGRICULTURE OF SHROPSHIRE.

To the Editor of the Agricultural Magazine.

SIR,

INTO your Magazine for October, you introduced a letter, explaining the arrangement I had adopted for collecting general information on the state of husbandry in the different provinces of the kingdom: in the present letter I design to give an example of its application.

SHROPSHIRE.

This county is about 48 miles long and 28 broad; it contains about 25,000 houses, 150,000 inhabitants, it has 170 parishes, and sixteen market towns. The principal river is the Severn, which intersects the county; after which the Terne, the Clun, the Rea, and several inferior streams, deserve little attention.

The whole county, exclusively of waste, on an average may be at the rent of about 20s. an acre; and the latter at from 2s. to 5s. land-taxes 4s; but taking the county throughout, not perhaps more than 1s. The poor-rates formerly were extremely low; but are now considerably advanced. The leases vary from seven to fourteen and twenty-one years. In the parish of King's Tatnal, there is much rich herbage; and the meadows let at from 30 to 50s. Shifnal is a fine soil, but sandy. In Colebrooke Dale, the custom is to cut the copse woods, which are in great abundance, every twenty-one years. The soil in the vicinity of Shrewsbury is a dry gravel. Perhaps there may be a thousand acres of coal on the Benthall side, and twice that number on the opposite side of the river. The celebrated Roman road, called Watling-street, Mr. Young has somewhere said in his Annals, takes its course through that country; but in this respect he is not accurate.*

The practice of irregating has long been introduced on the grass land, and has proved prodigiously advantageous. They begin watering about November, and continue it with the

* Watling-street, occupying a line due west, entered the county of the Atrebrates, over the bridges of the Tamesis at Pontes; it then extended north-west to Calleva; from thence it advanced to the coast, in a line due south, passing Venta in its progress, and meeting the sea at Clausentum, which it left in a right angle, and proceeding east, terminated at Ragnura. Clausentum is the county of the Segontiaci; the latter is the capital of the Regni.—The modern names of these are as follows:—

Atrebrates	. . . . .	{ Buckinghamshire, and part of Berks.
Pontes	. . . . .	Old Windsor.
Clausentum	. . . . .	Old Southampton.
Segontiaci	. . . . .	Hampshire.
Calleva	. . . . .	Silchester.
Venta	. . . . .	Winchester.
Regium	. . . . .	Chichester.
Regni	. . . . .	Surrey and Sussex.

In the preceding observations, I have followed Dr. Horsley in his *Britannia Romani*; comparing his curious itinerary of Antoninus, with the maps of the celebrated D'Anville. The inquisitive student will, however, discover a material difference in the distances calculated by these two learned geographical antiquarians: the computation of the former is 96 miles, the latter extends it to about 150 miles; so illusive is sometimes the labours of the profound scholar.

suitable intervals, until March. This expedient has doubled the produce. Some of the farmers feed in April, after this preparation, then water again, and mow in the middle of July.

Lime is very much used, and soot; but the latter not extensively. Perhaps in few other counties the former has been more freely used; but the practice of hoeing has not made the progress it ought to have done, not even with turnips.

For wheat, they in general sow about two bushels, and esteem twenty a good crop. For barley, they plough two or three times, sow three and a quarter bushels, and reap from twenty to twenty-seven. In oats, they seldom reap more than five-and-twenty bushels.

The white Dutch turnip is very much approved, and they sow about three and a half pounds on the acre.

It is the custom with them uniformly in that county, to strip the dead leaves from their cabbages, before they give this vegetable to their cattle; and the consequence is, that the butter acquires not the smallest taint from the food. Their head-lands are generally set with potatoes. Their clover they usually graze in the spring, and afterwards mow it for hay.

With respect to their cattle, their dairies are not large; but are well managed and productive. The produce of a cow they reckon at 8 or 10*l.* per annum. They are not acquainted with the method of weaning without milk, as practised in some other counties; but they know how to make a little milk go a great way in this business, by admixtures of oat-meal, linseed-meal, and other nourishing ingredients. They consider an acre not sufficient to summer a cow; and they think two gallons at a meal denotes a valuable animal.

Their hogs are numerous, and they usually apportion two breeding sows to ten cows; and reckon Candlemas the most convenient time for weaning their calves.

Sheep are usually kept in small parcels; about a hundred are allotted to 300 acres. They carefully avoid feeding their sheep in the water meadows, for the obvious reason, that this practice would introduce the rot into their flocks.

Their custom has been very much to plough with oxen, which they work in that way from three to six years old.

The course of crops has now become in farming a most material consideration. Those here adopted are, 1. turnips; 2. barley; 3. clover; 4. oats.—Or a worse, 1. turnips; 2. barley; 3. wheat; 4. barley; 5. clover; 6. wheat.

Almost all the cottages have a piece of ground in flax; from the produce they spin and weave their linen.

Their farms in general vary between 100 and 200 acres; and towards Cheshire, a more opulent race of farmers prevail,

with large stocks and abundant dairies. They reckon 500l. necessary to stock a farm of 100l. a year.

The depth of their ploughing is deficient; but they are much obstructed by the stoney sub-stratum. They frequently do not go lower than three or four inches; and the price is five shillings an acre. The hire of a team for a day, is about ten shillings and sixpence.

In the south-east part of the county, approaching Staffordshire, the inhabitants seem to be inspired with a portion of that activity and enterprize, for which their neighbours are distinguished. Here the traveller occasionally observes the double plough, which they procure at the expence of about five guineas, and to which they attach (perhaps unnecessarily) as many as five horses; but the custom of the country is to over-horse their draught. The experimental farmers consider they can get through more work with five horses in that way, than with eight with two single ploughs.

Oxen in harness are preferred to oxen yoked. I very much wish to see the account in your work, of some actual experiments on the French method of yoking this animal, a plate and description of which you gave in your publication for August last; some observations on which were subsequently made in the same work for November, under the signature of *Agricola Meridionalis*.

I am, Sir, yours, &c.

CHOROGRAPHUS.

Nov. 12, 1803.

ON SUPERFICIAL DRAINING AS APPLIED TO ARABLE LAND
IN CONTINUATION OF THE SAME SUBJECT, AS CON-
NECTED WITH GRASS LAND. BY "A LITTLE FARMER."

To the Editor of the Agricultural Magazine.

SIR,

"A Little Farmer" from Oakham, in page 178, of your present volume, has given an account of a method of superficial draining as applicable to grass lands, with great perspicuity. I am sure he was aware that his expedient might, with as much convenience, be applied to laying up the stubbles dry for the spring ploughing, and my not having communicated my thoughts on this matter immediately after the perusal of the paper to which I have alluded, is perhaps owing to the expectation I formed that this "Little Farmer" would have adverted to this subject which he would have treated with correctness and judgment.

We live in a rainy climate where we have a prodigious extent of flat country, which, without proper precautions would be in a constant state of inundation. Nearly the whole tract on our eastern shores, from the English channel to the North Seas, and almost all the middle counties of the king-

dom are of this character, and the loss is immense to this country from the quantity of seed which perishes in the oozy beds to which it is consigned. It is therefore very important to ascertain what means will most successfully relieve it from this destructive abundance of the aqueous deposit. It may be expected, that the improvements in hydraulics, and hydrostatics, will be extensively applied to this subject: it is discovered in the aqueducts at Versailles, that the declivity of a few inches is sufficient to convey off water through a distance of several miles, and it is exactly on the same principle, that the business of superficial draining is conducted. If between the two extremities of the same field, the smallest difference of elevation be noticeable, it is obvious, that this scheme for draining may be adopted, and that all the inconveniences of this aquatic exuberance may be avoided.

The general directions given by "A Little Farmer" on grass land, is equally adapted to arable land, but some peculiarities in the latter require distinct notice.

It is a prejudice existing with ordinary farmers, that no land remains so dry between the interval of reaping and spring ploughing, as that which is untouched by the plough from the time of harvest, and they conceive that whatever mode of draining may be adopted, it conduces to carry off the nutritive properties of the manure with which the soil is impregnated.

Both from theory and practice I am convinced of the error of these notions, and I shall notice them as I proceed.

The method of superficial draining most convenient on arable ground, is to open the furrows between each land, by passing the plough once down them. Connected with these, diagonal furrows should be made in the way, and with the caution almost constantly employed when winter corn has been sown. In this business, the principal attention should be directed, that the depth of the diagonal furrow which crosses the lands, should not be more raised than that part of it which crosses the furrows, and to effect this, it will sometimes be necessary to load the beam with the weight of a boy, as the plough passes the middle, or more elevated part of the lands, or it may be expedient to guide the plough two or three times through these transverse furrows, that the inclination may be uniform from one extremity to the other. Care must likewise be taken, that the intersecting furrows between the lands are somewhat shallower than the diagonal or water furrow. Two, three, or twenty of these should be made according as the declivity and dimensions of the field may render necessary.

After the business of the plough is completed, a labourer with a spade should be employed, to correct the little inequa-

lities, and to open the furrows in the way practiced with winter corn.

If the farmer should be unwilling to apply his team in this way so long as the operation will require, most of the purposes will be answered by merely opening the diagonal furrows, by which means he will easily drain with a single plough 50 acres in the course of one day, and the following advantages will be derived from this attention.

When the farmer enters on the duty of the spring sowing, in February for beans, and in the succeeding months for other produce, he will find his land sound and firm, and whether he farm by drill, or broad-cast, he will be able to perform the operations of husbandry with regularity and success, on that very ground, where under other circumstances, his horses would have to wade up to their knees in mire, and where harrowing would be impracticable.

But he supposes the constant current of water rolling down his land on the plan of superficial draining would carry with it all the cherishing qualities of his manure.

Precisely the contrary is the fact. Of all the modes of draining, superficial draining is least liable to this inconvenience. Great as are the advantages of land-ditching (which I readily acknowledge) the decomposition and solution of the nutritive properties both of the manure and of the soil, is one of the disadvantages with which it is attended; but in superficial draining the inconvenience cannot arise. The land is hardened by the dry condition to which it is brought, and the water rolls over it as on a superficies of marble, and has very little more effect in dissolving the fertilizing principle of the one, than in extracting the beautiful colours with which nature has embellished the other.

Reflecting on the annual reduction in the quantum of produce in this humid country, from these egregious mistakes, I have presumed these few observations would be acceptable.

I am, Sir, yours, &c.

Foulmere, Dec. 4, 1803. A CAMBRIDGE FARMER.

THE EXAMINATION OF THE COMPONENT PARTS OF SOILS.

To the Editor of the Agricultural Magazine.

SIR,

I Have seen with great pleasure, that some of the papers in your late numbers, have been directed to those essential principles in which Agriculture must ultimately depend. Without being at all disposed to depreciate the knowledge of the experimental farmer, I may be permitted to say that I am fatigued and oppressed with the vain and idle rhapsody

dies of emperical writers, who neither ground their opinions on the sure guide of experience, or on the luminous maxims of science.

It is, perhaps, a painful truth, at least I feel it as such, that the most valuable information on the constitution of soils, and on the means of estimating their fertility, is to be derived from the French, German, and Italian mineralogists, rather than from the students of our own country. But it is some consolation, that if we are the worst theoretic agriculturists, the English are the best practical farmers in the known world. To fix the bounds of useful knowledge attained in any particular state, is of no inconsiderable importance: it instructs the members of the community to what objects their attention may be usefully directed, and it promotes that diffidence and modesty which is the infallible presage of improvement.

But, Sir, I should abuse your indulgence, if I were to continue to detail such general observations; your work is fitly confined to matters of daily business, and substantial improvement, and would be grossly misapplied in moral and philosophic speculation. These few introductory remarks I designed as an apology for availing myself of the information of certain learned foreigners on the subject of this paper, to which I have been led by an ingenious letter in your number for October last, dated from Pentridge, on the delightful shores of the Derwent. That writer, I have no doubt, is perfectly aware from his observations, cloathed in a garb of needless humility, that the analysis of a fertile soil in a very rainy climate, where the fall of rain is 40 inches, and in a situation where the fall is only 24 inches, must be widely different.

With a soil of that description in the neighbourhood of Turin, where it rains annually, above 40 inches on the square foot. Mr. Giobert has made us accurately acquainted. He found 1lb. of it to contain from 20 to 30 grains of extractive matter, which flamed and burned, and therefore was a coal soluble in water; 26 lbs. of it contained 1808 grains of water. The simple earths were in the following proportion per cwt.

Silex from	.	.	.	.	77	to	79
Argill	.	.	.	.	9		14
Calx	.	.	.	.	5		12

Hence the pound should contain

						grs.
Carbonic matter	.	.	.	.		25
Water	.	.	.	.		70
Silex from 4362	.	.	to	.		4475
Argill	509	.	.	.		793
Calx	283	.	.	.		679

He also found it to contain a great deal of air (about 19

grains) of which one-third was fixed, and the remainder heavy inflammable air; but no volatile alkali.

In less fertile soils, Mr. Giobert determined the proportions of

Silex, from	48	to	80
Argill	7		22
Calx	6		11

Hence the troy pound contained, of

Silex, from	2716	to	4528	grs.
Argill	396		1245	
Calx	339		622	

Allowing 100 grains for moisture; as either the calx or argill exceeds the proportions in more fertile lands.

In barren soils he found

The proportions of Silex from	42	to	88
Argill	20		30
Calx	4		20

Hence the troy pound contained, allowing for water, 120 grains.

Silex, from	2368	to	4963
Argill	1128		162
Calx	225		620

The specific gravity of these soils is not given; but it probably is either much above, or much below that of the former, as they are either too close, or too open. Mr. Fabroni found that of barren sandy land, 2, 21.

Mr. Bergman discovered that a fertile soil, situated on a plain, where the yearly fall of rain amounts to 15 Swedish, (that is 23,9 English) inches, contained four parts clay, three of silicious sand, two of calcarious earth, and one of magnesia, (in all ten parts;) but the last not being of absolute necessity, may be annexed to the calcareous.

The silicious sand, mentioned by Mr. Bergman, is what we call gravel (consisting of stone from the size of a pea, or less, to that of a nut; and thus he himself explains it.*

This amounts to 30 per cwt.

Hence we may state the proportions thus:

Coarse Silex	30
Finer	26
	—56 parts
Argill	14
Calx	30
	—
	100
	—

* Bergman, 102, 103.

The use of the gravel is to keep the soil open and loose: a circumstance absolutely necessary, as I have before observed.

The specific gravity is not given, but should not much exceed, I suppose, 1,600. Muschenbrook found that of garden mould 1,630. The carbonic matter was not known to Mr. Bergman.

The proportion in a troy pound, supposing the quantity of water and coal not to exceed 100 grains, stands thus, omitting fractions:

Gravel	. . .	1698
Fine Sand	. . .	1471
		— 3169
Argill	. . .	792
Calx	. . .	1698
		—

I have submitted these curious estimates to the attention of the numerous experimental farmers who peruse your work; they will know how to avail themselves of the knowledge resulting from these calculations, and to diffuse it among the less informed, but not less useful yeomanry and peasantry by whom they are surrounded.

I am very glad to see that a correspondent of yours has commenced a course of Veterinary Essays, I shall vigilantly attend to the contents of his papers, and shall occasionally make such remarks as my professional habits and pursuits may enable me to suggest.

I am Sir,

Your's, &c.

Warwick-lane, Dec. 10.

LUCUS MEDICUS.

ENUMERATION OF PATENTS LATELY ENROLLED.

October 31, **R**OBERT ATKINS, of Fenchurch-street, in 1803. the city of London, mathematical instrument-maker; for improvements in the construction of hydrometers, for ascertaining the strength of spirituous liquours; and a sliding rule of correction for temperature to the hydrometer, and various improvements thereof.

— 31, Edward Thomason, of Birmingham, in the county of Warwick, button and toy-manufacturer; for a new mode of making hearth-brushes.

CRITICAL CATALOGUE.

Blaine's Outlines of the Veterinary Art.

(*Concluded from our last Number.*)

HAVING already made our readers acquainted with the plan and division of the present work, they will perceive from the variety of the contents, that any epitome of them would, within the limits to which we are confined, be utterly impossible. We shall therefore select for an extract, what the author says on a very important branch of Veterinary Economy, the art of shoeing. He there takes a survey of the various kinds of shoes that have been recommended and used within the last sixty years, noticing the defects and advantages of each, so that this chapter of his work may be considered a complete treatise on that useful art.

“ We have many treatises on shoeing of an old date : the Italians, the Germans, and the French, offered many of them ; some few appear in our own language : but the art was but clumsily managed, even on the Continent, when La Fosse began his career, and gave his celebrated treatise on that subject, which if it did not offer a perfect shoe as a model, at least taught us to consider the physiology of the foot in a better point of view, and the proper management of it previous to shoeing. This author taught the impropriety of cutting the foot away ; he considered the pastern as pressing on the coffin and navicular bones, and the navicular as resting on the flexor tendon, and the tendon on the fleshy frogs which was intended as a point of support to it ; hence in all cases the frog should be opposed to the ground.

“ *La Fosse's shoe.*—La Fosse considered long heavy shoes as useless and liable to drag off ; that they lessened the animal's points of support, and that thick shoe heels were no assistance to weak heeled hoofs : he was hence led to recommend what he called the half moon shoe, which was short, and reached only to the middle of the foot. La Fosse's shoe has been found useful in many cases of diseased feet ; it is useful likewise for strong feet when contraction is likely to take place or has began, provided they are not worked on the worst roads ; but it is not generally applicable to the majority of horses in the present state of our roads ; for the heels are found to wear too fast ; and in hunting horses slip with it, and suffer injury. This shoe, or one something similar to it, was adopted by the veterinary college, but not being found perfectly to answer, it was very properly abandoned ; which has occasioned much petulance and illiberal abuse to be cast on the institution : but with all its merits and defects the half moon shoe was not La Fosse's invention : it had been used for contracted feet for more than a century before, but was not in general use ; but as it was found a remedy for contractions, La Fosse deemed it might, by general use, prevent them.

“ *Osmer's shoe.*—Mr. Osmer was originally a surgeon possessing a strong mind, with great marks of originality : his thoughts on shoeing were offered about 1760. Osmer very properly considered the frog and bars as essential parts, and particularly insisted on the

propriety of the soft elastic part remaining uncut. the loose ragged portions only being removed. He likewise observes, that some persons, mistaking La Fosse (who blamed the improper cutting away the sole and frog,) had gone into the contrary extreme, and suffered the feet to grow to a preposterous length. The feet of all horses, he remarks, ought to be pared according to their length; the crust being made perfectly plain and smooth round the outside, in strong feet, by paring; but in broad fleshy feet by rasping alone. The shoe he recommended was to be made quite flat on the under surface, of an equal thickness all round, and open backwards, as well as most narrow there: and to prevent pressing on the sole it was to be seated; that is, bevilled away, not from the edge, but from about half its width, by which means it would leave a flat surface for the crust. His further directions were, that every shoe should stand wider at the heel than the foot itself, and that every foot should be kept as short at the toe as possible, so as not to affect the quick.

“*Mr. Clark's shoe*—Not very long after La Fosse and Osmer had awakened the attention of the public to shoeing, Mr. Clark's sensible treatise on this subject appeared. This gentleman's shoe did not materially differ from the one recommended by Osmer, and used by many of the most intelligent of our farriers at present: but his remarks more forcibly painted the improprieties generally practised. It is plain likewise that Lord Pembroke borrowed many of his ideas from him. Mr. Clark appears to be no friend to hollowing the surface of the shoe next the foot; but with regard to this the form of the foot must dictate; when it is broad and flat, if the shoe is not hollowed it must press upon the sole, for most of these authors were not aware of the sole's descending every time the horse treads, which is now proved by experiment; therefore, if they only applied the shoe so that when nailed it did not press on this part, they thought it sufficient. Nevertheless in concave well-formed soles a flat shoe would not press in action. But the circumstance that has always struck me most in favour of hollowing the inner surface of the shoe is, that by this stones and dirt are less likely to be retained; for when the upper surface is directly flat, whatever stones are on it, on the descent of the sole, are then pressed between two flat surfaces, and thus indented into the sole; but when the surface is hollowed, this same pressure must tend to throw the stones out, by making them slip towards the inner edge of the shoe in a line obliquely with their own gravity. Mr. Clark's principles rested on recommending no paring or cutting, either of the hoof or frog, unnecessarily, nor ever raising the heels with calkins: but when any farther stay was required, to use an ice nail: but nevertheless he seems aware of the necessity of making small sharp calkins in hilly countries.

“*Lord Pembroke's shoe*.—The noble earl, to an unbounded love of the animal in question, added very considerable attention to his domestic management, and hence was led to form some very just censures on the prevailing modes of shoeing in use. This took place in a few years after Mr. Clark's work appeared; but whose good sense had not prevailed upon the generality of farriers to adopt his more rational mode. His lordship says, that farriers all agree in one point, that of making an excessive heavy, clumsy, ill-shaped

shoe, with many nails, to the total destruction of the foot. The cramps they put on, tend to destroy the bullet, and the whole shoe being made in the shape of a walnut-shell, prevents the horse from walking upon a firm basis. He adds, farriers first pare and cut away the heels, and then put on a long shoe, by which all the pressure is lost. The frog, he observes, should never be cut; but the general crust, when too high, must be so brought down as that the frog may be opposed to the ground. The shoe in size and weight must depend on the iron: so that it does not bend or wear too fast, it cannot be made too thin. The heels of the shoe should be narrower than any other part, that stones may not harbour under. The outer surface should be quite flat and the inner likewise; there should only be space left for the introduction of a picker. Four nails on each side are sufficient; the toe should be shortened and made square, by which means, this noble author considered more nourishment would be thrown behind. The hinder feet were to be treated in the same way as the fore, and a similar shoe put on, except, that in hilly countries they might be slightly turned up: but in the fore feet, he remarks, calkings would only throw horses down, by stopping the fore legs when the hinder were rapidly pressed forwards. On a plain surface the foot with cramps or calkings is always thrown forward, and gains an unnatural bearing. From the race to the cart horse the same system is to be observed, with the sole variation of weight. But in this the noble Earl is wrong, for some elevation of the shoe by calkings is found absolutely necessary in heavy draught horses in all situations, and this particularly in shaft horses. Thus far his lordship appears to be correct: but when he considers that as nothing more is requisite than a cover to the crust, horses should have a very narrow webbed shoe, he does not appear to have considered the matter rightly; for though it is probable that when the roads are very soft, or horses are only exercised on downs or grass plats, these might be found the best kind of shoes, as giving the animal only those points of bearing nature designed; yet it must be remembered that a shoe thus narrow very soon wears, and either a horse must be shod too often, or the shoe must be made too thick, by which the feet would be elevated too much above the ground. The earl's shoes therefore, which were copied from some of the German cavalry, have never come into very general use.

“*Mr. Taplin's shoe.*—Though from this gentleman's professions we are led to expect much originality in his shoe, yet on examination it will be found to be the very same that has been made by the better kind of smiths for this century past. The plates in his *Multum in Parvo*, which are intended to represent an “unerring and invariable standard.” appear to represent a contracted foot with the heels, as the farriers term it, neatly opened, that is, with the binders cut away and part of the returns of the heels likewise, a practice now so generally regarded as destructive, that it has lost many of its advocates even among the common smiths. That Mr. Taplin's mode may be with him an invariable one, is easily believed; but that it is an unerring one is perhaps not altogether so clear.

Monsieur St. Bell's shoe.—In consequence of the situation this

gentleman held, every attempt he made at improvement excited the public attention; and though he was certainly not well informed with regard to the general pathology of the animal, and in knowledge of the animal economy was grossly defective; yet he possessed many excellent ideas on the mechanical arrangement of the foot, and his principles of shoeing were ingenious. The late professor's shoe was intended to present a concave surface to the ground which would more closely imitate nature, and this was a mode he offered as entirely new; and though it is very probable he considered it as such, yet the same form was as strenuously recommended three hundred years ago, in a treatise written professedly on the subject by Cæsar Fiaschi, an Italian. There is no doubt but that this mode of shoeing is infinitely more consonant to nature than any other, and is by much the most firm, but unfortunately it will not remain so; this thin edge will wear immediately down, and by which means the shoe will become thin soon after it is put on, and thus be liable to bend or break. If shoes could be so formed as to be at once ductile and yet durable, we might then advantageously use this pattern. The breadth likewise of Mons. St. Bell's shoe was less than that of the common shoe, and it was directed to be half as wide at the heels as at the toe.

“He also gave directions for the number of nails, and a table of weights for the several shoes; but it is evident no precise rule can be followed in either of these respects.

“*Mr. Morecroft's shoe.*—This ingenious professor of the veterinary art has rendered himself eminent by his invention of casting shoes, or moulding them by means of machinery, which is done by sinking them in dyes. Mr. Morecroft, in consequence of the good effects he has observed it to have upon feet in general, and from the simplicity of its form, has recommended Osmer's seated shoe, which is, as we have described, one that has a flat surface opposed to the ground, but a concave one towards the sole, by which means all chance of pressure is avoided; but this concavity does not in Mr. M.'s shoe begin, as in the common shoe of country blacksmiths, at the edge, but about the centre, or rather from more than half of the width, by which means a flat surface is left as a seat for the crust: the heels are likewise to be the general width of the web and not narrowed. This is the shoe in use by Mr. Morecroft, and which he argues very ingeniously upon the use of. He very properly observes, that calkings were not so pernicious in former times, when the public roads were less solid; but in the present when the calkings cannot sink into the ground, they raise the heels so as scarcely ever to allow the frog to touch it, and thus prevent that degree of friction and pressure which is essential for keeping this part in a healthy state; for if the perspirable matter be not rubbed from off the frog occasionally, it becomes putrid and produces what is called the running thrush. That the use of the calkings is liable to produce this, there can be no doubt; but surely Mr. Morecroft cannot suppose it is brought about by this means. The frog is an elastic insensible part, and perfectly incapable of producing pus, which in every instance is the product of the sensible frog beneath, from where the horny frog is generated: for if the thrush was pro-

duced from a want of friction to wipe off the perspiration, it would not proceed from the cleft alone, but from the whole surface; and by a parity of reasoning, thrushes ought to ooze through the sole likewise which is equally removed by these means from friction, and is as likely to have perspirable pores as the frog.

“ For heavy draught horses, Mr. Morecroft permits calkings, two on each shoe; in the lighter ones, one on each shoe on the outside. In hackneys their use is never advised; but in hunters, one is recommended on the outside of each; when on the inner, it is apt to wound the foot. But from what we have said with regard to splent, it is perhaps better to have one on each side, or it may be still more proper to follow Mr. Coleman’s mode. The hind foot, Mr. M. says, as being more hollow than that of the fore foot, a shoe with a flat upper surface may be generally applied. The nails should for a saddle horse be eight, but for those employed in heavy draught, ten: these nails should not be placed laterally, as they prevent the expansion of the heels, and promote the contraction of the foot; but they should be placed all round at equal distances, except at the heel, where there should be a space of from two inches to two and a half. Instead of making calkings in frosty weather, Mr. Morecroft recommends “ nails with a lozenge-head, or a double countersink, terminating in an edge instead of coming to a point, which greater breadth of surface prevents its being rubbed away as fast as a point; the thickness in the middle gives it strength, and the regular taper to the shank causes it to apply exactly to the side of the hole in the shoe, by which it is equally supported, and prevented from bending or breaking.” But instead of making extracts, I would recommend the whole treatise to the attention of the curious on this subject. The plan of casting shoes has been perfected at an immense expence, and I believe the public are now supplied with shoes of a determinate pattern in various sizes of good iron, on very advantageous terms.

“ Mr. Morecroft’s ingenious remarks on horses who cut, are particularly deserving of notice. When horses cut from turning out their toes, which is by much the most common cause, they are observed to have the inner quarter of the hoof lower than the outer, and the fetlock joints are thus nearer each other than those of horses with their limbs straight. These facts led farriers to a conclusion, that if the inner quarters were raised to a level with the outer, and especially if made even higher, the fetlock joints would be thrown farther apart so that the foot would pass the supporting leg without striking: accordingly it has been usual to make the inner quarter of the shoe higher than the outer, and this has been the common practice for a great length of time. Mr. Morecroft first made trial of a shoe the reverse of this, with the outer quarter thick and the inner one thin, which entirely prevented the horse it was tried upon, from cutting; and other cases have since occurred, which evince the propriety of this practice.

The principle on which this is supposed to act is, that when a horse is at rest, he supports his weight equally on both feet; but having the inner quarter much raised, in the common mode of attempting to remedy the defect of cutting, when one foot is elevated

he must be supported obliquely on the other, and hence have a tendency to fall outwards; to prevent which, he brings the moving foot nearer the supporting one, by which he strikes it. Considering it in this point of view, it is not difficult to account for our author's mode of reasoning on his method, which by elevating the outer instead of the inner side of the supporting foot must necessarily give it a disposition to lean inwards and fall to the inside, which will throw the moving farther from the supporting foot. But ingenious as this mode of reasoning may be, it is to be feared that by thus throwing an increase of weight on the inner side, we shall sometimes be in danger of producing evils that will counterbalance the prevention of cutting.

“ *Mr. Freeman's shoe.*—In 1796, S. Freeman, Esq. a very intimate friend and old associate of the late justly celebrated Sir Sidney Meadows, gave to the world a very elegant publication on the mechanism of the foot of the horse, and the proper mode of shoeing. It is saying much too little of this gentleman's mode, to say he has considered the subject very rationally: many very ingenious ideas may be gained, and some excellent practical hints derived therefrom. In Mr. Freeman's opinion, many horses that are now shod might with propriety go without shoes; as all those with very strong feet, particularly when they inhabit a sandy or simply a rocky soil; and to this kind of feet, when any shoe is used, it should be one as much approaching a plate shoe as possible. His general principles are, that in every instance as little iron should be made use of as possible; and that the narrower the shoe the better, consistent with safety; and that whenever it is necessary to use a shoe wider than a plate shoe, it should be bevilled off on the inner surface to admit a picker. The outer surface should be perfectly flat, and the web narrower at the heels than at the toe. With regard to the length of the shoe, Mr. Freeman very judiciously observes, that whatever projects at the heels, and is not attached to the crust, only acts as a lever to tear the shoe from the foot; and as fullering only weakens the shoe, he advises the practice of counterfinking. The hinder shoes may be made rather longer than those before, and when necessary may be slightly turned up; but calkings before should never be allowed.

“ *The shoe of the Veterinary College.*—The shoe first used by the Veterinary College was that recommended by Monsieur St. Bel; but when the present professor took this situation, he adopted another, not very different, which was similar to that of La Fosse: but a more extensive experience convinced him, that in the majority of instances in the present state of the roads, this shoe was not eligible, and from which he was led to abandon it and adopt that in present use.

The college shoe is three times as thick at the toe as at the heels; for it is alleged, the wear is three times as great there as at the heels, and the frog is by this means brought to the ground. It is likewise much lighter than usual; for it is with propriety observed, an ounce at the heels is more than a pound on the back. This shoe is, therefore, recommended on three principles: first, that by it the wear at the toe should be equal to the heels; secondly, that the weight should be

diminished; and thirdly, that the frog should come in contact with the ground.

“ In the preparing the foot for the shoe, Mr. Coleman insists much on removing a portion of the sole between the whole length of the bars and crust with a drawing knife, to remove the possibility of pressure on this part, by which the horse will always be free from corns. He very justly observes, that the removal of the bars is the very occasion of corns, though farriers say it prevents them, and that the heels of the shoe should rest on the junction of the bars with the crust. This has always to me appeared a very material point, yet it is very little attended to. But the part in these shoes that constitutes the principal deviation from others, is in the heels: for Mr. Coleman thinks the bringing the frog to the ground so essential, that his shoe is only a third the thickness at the heel to what it is at the toe. It is likewise left plain on both its surfaces, and in its application, the toe should be pared down, but the heels left undisturbed; by which means the thinness of the heels will not influence the horse in his tread.

“ When the heels of the foot exceed two inches in depth, and the frog is equally prominent, and the ground dry; a short shoe, and thin at the heels, may be applied. But Mr. Coleman does not recommend this shoe in wet ground. With regard to the nails, he applies them as near the toe as possible, with none at the heels: for when placed far back, they bind the foot in its action, and tend to contract it; they therefore should be kept as far as possible from the heels, particularly of the inside quarter. The nails of the college shoe are conical, and the nail holes stamped with a wedgelike punch, which farriers call countersinking; and when this can be done, it is certainly a matter of very material import, as by this means so long as any part of the base of the nail remains, the shoe is held firm; whereas, by the usual custom of fullering, they are received into a groove, but no part of the head enters, and as soon as that is removed, the shoe frequently comes off. A shoe and nails for a moderate-sized horse, should weigh from eighteen to twenty ounces; and this size may be an inch wide at the toe, and three fourths of an inch at the heels. For a light saddle horse, the shoe should weigh from twelve to fourteen ounces, and be proportionally less wide. Cart horses should have more in proportion to their size. For horses which hunt, or are in shafts, Mr. Coleman recommends the outer heel to be turned up, but that there may be no inequality of position, the outer heel of the foot is recommended to be lowered, and the inner heel of the shoe somewhat thickened; by which means cutting is avoided, and yet the horse gains a firm support. The Professor recommends the bar shoe upon horses with low weak heels, as it produces pressure on the frogs without wearing the heels, and when they are sufficiently grown, then the thin heeled shoe may be used.

The Patent artificial Frog.—Mr. Coleman, convinced of the necessity of the pressure of the frog, has invented a means whereby he gives this pressure to it in those cases, where, by bad shoeing, or by disease in the feet, it is elevated from the ground; in which cases, if the heels are lowered to bring the frog down, the tendons are, as it is termed, strained; and to wait for the growth of the frog, is only increasing the evils already brought on: therefore, the patent frogs are intended

to produce pressure on the natural frogs while in the stable, by which means the evils arising from this want of pressure are relieved, and in time the proper shoe may be used. The ingenuity of this invention is without doubt, but I have not had any opportunity of witnessing its utility: there are likewise few inventions that have any thing like complexity in their composition, that persons will persist in; and, it is probable, that it is to this cause that they are not in very general use. A similar reason has likewise formed a very material objection to the college shoe, for unless horses could always be shod under the eye of the college smiths, or by persons immediately taught by them, the owners are fearful of the changes that the feet must experience under the hands of the country smiths; therefore, though convinced of its propriety, fear prevents its adoption.

From what has been said of the different shoes in use, it will be evident that nature is to be the first guide; and as such, there are some principles indispensable, such as removing no parts but those that, if the foot was applied to the ground, would remove naturally; to bring such parts in contact with, or opposed to the ground, as are opposed to it in a natural and unshod state; and above all, to preserve the original form of the foot. But, as from the effects of great exertion on hard roads, and in many instances from an injudicious management in shoeing, there is a vast variety in the form of feet; so it is evident, no one shoe can be invariably recommended, but perhaps every one of the shoes mentioned are adapted to some particular feet. This shews clearly, that the art of shoeing is a very important one, and embraces many more points than the mere forging the iron for a shoe, or rasping the horn."

HISTORY.

National Transactions.

GREAT BRITAIN.

THE political situation of this country is in no respect changed since our last. The same preparations for a vigorous defence are still continued; and the same uncertainty whether our spirit will be put to the test still prevails. To relax, however, while a chance of probability exists, would be the height of impolicy.

If we look at home, the present state of the country must fill us with exultation. By the accounts submitted to the House of Commons it appears, that the number of Volunteers whose services have been accepted by Government, amounts, in Great Britain, to little short of 400,000; and in Ireland, to about 70,000. With regard to our finances, we find in the documents laid before the same assembly, that the produce of the permanent taxes exceeds that of the former year, by the sum of nearly five millions sterling.

FRANCE.—The First Consul returned rather unexpectedly to Paris, from his review of the preparations on the northern coast. These, however, are stated to continue with unabated activity, both in the ports of France and Holland.

A coolness has taken place between the Courts of the Tuileries and Petersburg; the recal of the Russian Ambassador, Markoff, and the activity manifested in the naval and military departments of that empire, wear a hostile appearance. To counterbalance the loss of his influence with Russia, we are told that Bonaparte, either by intrigue or by menaces, has induced the Court of Spain to become a partner in the war against England.

The requisition of a loan from Hamburgh, has been complied with by the Senate of that City; and similar demands have been made of several German Princes: with what success we are not informed. These circumstances, together with the detention of Hanover, begin, it is said, to excite the jealousy of the Prussian Monarch.

In the mean time, the blockade of all the ports of the Republic, by our vessels, still continues; and while the vaunting Corsican fills all Europe with his threats of invading Britain, scarcely a boat dares to venture from one harbour of his dominions to another.

GERMANY.—A singular and unexpected piece of intelligence has been received from Vienna. It is stated, that the Imperial troops having been driven from the castle of Oberhaus, in the vicinity of Passau, by the Bavarians; Austrian troops, to the number of 46,000, including 12,000 cavalry, have been ordered to march against the Bavarian territories. The cause of this strange proceeding on the part of the Elector of Bavaria, remains unexplained. The Hamburgh letters state a supposition, that he had been led to this measure by the instigation of Prussia. It is no, however, probable, that he would venture to commit himself in so open and avowed a manner with Austria, if he was not sanctioned either by Prussia or France; in which case this circumstance may eventually lead to much more important consequences. The French minister, Champagny, is stated to have made remonstrances upon this subject to the Imperial court, which were however unattended to. All the Ambassadors and Ministers resident at Vienna, immediately on receiving intelligence of these movements, dispatched couriers to their respective Courts.

The Emperor, it is said, still refuses to acknowledge the new constitution of Switzerland, notwithstanding the most pressing applications from the French Minister for that purpose.

RUSSIA.—The accounts from Russia seem to encourage the report which has been for some time in circulation, that the Emperor of Russia is exceedingly offended at the oppression and injustice which the First Consul exercises wherever his power and influence extends.—An Imperial Ukase is stated to have been published, ordering an immediate addition of 60,000 men to the Russian army; the reason for which measure is said to be, “that in the peculiar circumstances of Europe at the present crisis, his Imperial Majesty thinks it right to be prepared for any possible result.”

The reported changes in the Russian Cabinet are also confirmed. The Minister at War has been dismissed; or in the diplomatic phrase, “has been permitted to retire.” The Generals Rosenberg, Essen, and Apraxin, who commanded the last war against the French, have been appointed to the important governments of Cherson, Kaminiac, and Smolinsk. The arrival of Count Markoff from Paris, and the departure of the French Minister, General Hedouville, are also mentioned as circumstances hourly to be expected; and the Russian fleets, both in the Baltic and the Black Sea, are ordered to be immediately equipped for service. The Emperor has also signified his approbation of the dignified resistance made by Count Markoff, to the arrogance of the First Consul, by sending to him the Blue Ribbon, one of the first orders in Russia. There is therefore sufficient ground to believe, that the First Consul must either put some restraint on his licentious system of plunder in the north of Germany, or involve France in another war on the Continent; which, if once begun, will be as extensive as the last.

TURKEY.—It is stated, in letters from Constantinople, that the Emperor of Russia has directed his Ambassador there to notify to the Porte, that he will take no part in any scheme for the partition of European Turkey. This declaration has afforded the utmost satisfaction to the Turkish Government: it is important likewise, as it seems to shew, that the attempts of the First Consul to bribe the Emperor of Russia into an acquiescence in his violence and oppression, by offering him a share in the spoils of Turkey, have not been attended with success.

The Captain Pacha has been ordered to protect the Archipelago and Adriatic with eighteen sail of the line.

SPAIN AND PORTUGAL.—Our future relations with Spain and Portugal are again become matter of great uncertainty; and serious apprehensions are again entertained, that the hollow and delusive neutrality of the former is shortly to end in open and confirmed hostility.—The Spanish fleet is in motion; and two ships of the line have passed the Straights of Gibraltar, and put into Cadiz. It is likewise said, that the most active exertions are making at Cadiz, Carthagena, Ferrol, &c. for the equipment of a fleet of 20 sail of the line, together with several frigates; which it is added, are to be placed at the disposal of France, and to act in concert with the Toulon Squadron.

UNITED STATES OF AMERICA.—The speech of Mr. Jefferson, the President of the United States, upon the opening of the Congress, completely refutes the reports which have been circulating here for some time past, of the probability of an approaching rupture between this country and the United States. The President, indeed, takes notice, that “some contraventions of the rights of the American nation have taken place, both within their jurisdictional limits, and on the high seas; but,” he adds, “the friendly disposition of the governments, from whose agents they have proceeded, as well as their wisdom and regard for justice, leave us in reasonable expectation, that they will be rectified and prevented in future; and that no act will be countenanced by them which threatens to disturb our friendly intercourse.” These expressions are very satisfactory to the commercial interests in this country; as they not only shew that no disagreement of any moment has taken place, but that none is likely to take place. The President deplores the renewal of war between England and France, and expresses his determination to preserve the strictest neutrality. His advice is that of a wise statesman and a benevolent man.—“In the course of this conflict, let it be our endeavour, as it is our interest and desire, to cultivate the friendship of the belligerent nations, by every act of justice and of innocent kindness; to merit the character of a just nation, and maintain that of an independent one, preferring every consequence to insult and habitual wrong.” The revenue of the United States is represented as extremely flourishing; and the actual receipt of the last year, ending the 30th of September, has exceeded the estimate.—The price to be paid for Louisiana is thirteen millions of dollars.

Agriculture.

SHEW OF CATTLE IN SMITHFIELD.

FOR the particulars of the prizes of this grand annual shew, we refer our readers to the front of our Magazine

A heifer, fed on grass only, by Mr. Barrington, of Rochford, in Essex, was universally admired, as one of the completest beasts ever exhibited; but being spayed, she was not admissible in the prize classes. A fine pen of Gloucestershire-bred wethers attracted much notice, for their size, symmetry, and condition.

The Duke of Bedford's Suffolk hog was preferred to all of its kind; to which an Essex-bred one, fatted by Mr. Wakefield, was deemed by the judges very little inferior.

Owners of horses were not entitled to premiums, notwithstanding some very fine ones were exhibited. Two in particular excited attention; a beautiful blood mare, bred by Sir. H. V. Tempest, and a capital blood horse, bred by Mr. Robinson; which for figure, bone, and symmetry, can scarcely be exceeded.

Most of the prize cattle were sold to the principal butchers at high prices; though the close weather was much against the slaughtering of the largest oxen, the flesh of which, without a drier and cooler air, cannot possibly stiffen.

The judges and committee met on Friday at the Crown and Anchor, where they dined. The Duke of Bedford was, in the first instance, in the chair.—Mr. C. C. Western, member for Malden, took the chair after his departure, and the business of the evening terminated with much hilarity.

A notice was fixed up in the yard, that Mr. Arthur Young, of Sackville-street, would pay the premiums, on the owner producing a certificate of the dead weight of the animals; distinguishing the quarters of butcher's meat, and the several offals, viz. hide, head, feet, tongue, pluck, fat, entrails (not emptied) heart, liver, and the blood.

Among the unsuccessful candidates for prizes, were some excellent animals.—We noticed a remarkably tall red ox of Mr. Westcar's; a brindled cow of the French and Scotch breed, belonging to Mr. Crook; and two very excellent new Leicester sheep, belonging to Mr. Duffield, which missed the prize by his sending only two, instead of three sheep, as required. Mr. Pickford shewed two very fine large pigs, of a Hampshire mixed breed, and on the whole it seemed agreed, that the shew of pigs this year much excels the last; but that the same could not be said with certainty of the oxen.

On Monday the annual dinner took place, at the Crown and Anchor tavern: about one hundred members were present. His Grace the Duke of Bedford was in the chair. After the cloth was removed, the chairman rose and gave as the first toast—the KING: it was drank with suitable demonstrations of attachment. The second toast was, Success to good grazing. 3. The plough. 4. The fleece. 5. Breeding, in all its branches. These toasts were all drank with great applause.

The chairman then rose to state to the company, the manner in which the prizes for the last year had been adjudged. The noble Duke said, that he had not much to trouble the meeting with on the present occasion. He congratulated them, that the object of the society had been already proved by experience to be highly successful and important. In the first place, much useful information on the most advantageous mode of feeding, and the best state of bringing cattle to market, had been communicated to the public. Much information had also been obtained with respect to pigs; the result of which would be shortly laid before the public. He adverted to several alterations in the classes of prizes; observing, that the object of the society was, to promote the introduction into the market of cattle and pigs at a moderate rate. He considered the practice of keeping up beasts a considerable length of time, for the purpose of fattening them, as injurious, not only to the graziers, but to the public. It was the object of the society only to encourage what was most material for supplying the public markets. The premiums were before the meeting, and they were best able to judge of the propriety of them. He could not avoid congratulating the society on the progress it had made in so short a period. He thought the public would be benefited by its exertions, and that the clamour raised against the institution would subside, and be succeeded by general approbation. His Grace concluded by giving a toast—Success to the Smithfield Society.

Mr. Gray, of Tracy Park, near Bath, rose to mention to the company, a remedy for the disease of scouring in cattle, which he had found to be of

the most efficacious kind. Several of his cattle had been attacked with this disease, and he had applied various remedies: all of them had, however, proved ineffectual, till he made trial of Mr. Bellamy's Buth powder, the effect of which had been so direct and immediate, that he felt it his duty to recommend it to the attention of the public.

Lord Somerville corroborated this opinion, of the efficacy of Mr. Bellamy's powder, for the cure of the disease in cattle which had been referred to. He thought it deserved the serious attention and support of all those who composed the society. His Lordship then proposed -- The health of the noble chairman, which was drank with three times three, and every demonstration of regard.

His Grace, in a few words, expressed his gratitude to the society for the kind manner in which they had drank his health.

The next toast was---Small in size, but great in value. The chairman then gave the health of Mr. Coke, of Norfolk, which was drank with every mark of respect. The health of Lord Egremont, Mr. Western, and the Earl of Winchilsea, were severally drank with great applause. The meeting broke up about ten o'clock.

The remedy for epidemic diseases in cattle, alluded to by Mr. Gray, was proposed to be made public, if 500 guineas were subscribed. The majority of the members immediately paid down one guinea each.

Farming Society of Ireland.

Deeply sensible of the utility and practical patriotism of such institutions as the Farming Societies in civilizing the great mass of the people, and improving their social condition, we shall be happy from time to time to lay before our readers the adjudications at the different Premium Shews. The following took place at the late Dublin November Shew.

NEAT CATTLE.

CLASS		£.	s.	d.
1.	For the best fat ox, six years old, or upwards, in Spring 1803	10	0	0
	For the second best,	5	0	0
	NO CLAIMANT.			
2.	For the best fat ox, five years	10	0	0
	For the second best,	5	0	0
	NO CLAIMANT.			
3.	For the best fat ox, four years old,	10	0	0
	For the second best,	5	0	0
	Andrew Walsh, Esq. co. Meath	1		
	John Garnett, Esq. co. Dublin	2		
	First premium adjudged to A. Walsh, Esq.			
	Second premium withheld for want of sufficient merit.			
4.	For the best fat ox, three years old,	10	0	0
	For the second best,	5	0	0
	NO CLAIMANT.			
5.	For the best fat cow or heifer, six years old, or upwards,	10	0	0
	For the second best,	5	0	0
	Sam. Garnett, jun. Esq. co. Meath	1		
	Rev. T. Radcliff, co. Roscommon	2		
	John Gerrard, Esq. co. Meath	3		
	First premium, adjudged to Samuel Garnett, jun. Esq.			
	Second premium adjudged to the Rev. Thomas Radcliff.			
6.	For the best fat cow or heifer, five years old	10	0	0
	For the second best	5	0	0
	M. L. M'Causland, Esq. co. Dublin	1		
	J. Fetherston, Esq. co. Westmeath	2		
	Lord Castlecoote, co. Dublin	3		
	Gust. Lambert, Esq. co. Meath	4		

First premium adjudged to M. L. M'Caulland, Esq.

Second premium adjudged to John Fetherston, Esq.

7. For the best fat cow or heifer, four years old 10 0 0
For the second best 5 0 0

Henry Garnett, Esq. co. Meath 1

Charles Mulvany, Esq. co. Dublin 2

John Garnett, Esq. co. Dublin 3

First premium adjudged to Henry Garnett, Esq.

Second premium adjudged to Charles Mulvany, Esq.

8. For the best cow or heifer, three years old 10 0 0
For the second best 5 0 0

Henry Garnett, Esq. 1

John Garnett, Esq. 2

First premium adjudged to Henry Garnett, Esq.

Second premium withheld for want of sufficient merit

9. For the best prize cattle.—The Silver Medal.

Samuel Garnett, jun. Esq. 1

M. L. Caulland, Esq. 2

Rev. Thomas Radcliff 3

John Fetherston, Esq. 4

Henry Garnett, Esq. CLASS 7 5

Charles Mulvany, Esq. 6

Henry Garnett, Esq. CLASS 8 7

The medal adjudged to Samuel Garnett, jun. Esq.

SHEEP.

LONG OR COMBING WOOL.

10. For the best fat wether, two years old 10 0 0
For the second best 5 0 0

James Dowdall, Esq. co. Meath

Joseph Bernard, Esq. King's Co.

Rev. Thomas Ratcliff, co. Roscommon

First premium adjudged to J. Bernard, Esq.

Second premium adjudged to Rev. T. Ratcliff.

Mr. Dowdall disqualified for not complying with the conditions published.

11. For the best fat wether, one year old 10 0 0
For the second best 5 0 0

First premium adjudged to Rev. T. Ratcliff.

NO COMPETITOR.

Short or Clothing-wooled.

12. For the best fat wether, two years old 10 0 0
For the second best 5 0 0

NO CLAIMANT.

13. For the best fat wether, one year old 10 0 0
For the second best 5 0 0

NO CLAIMANT.

14. For the best of the prize sheep—Silver Medal.

Rev. T. Radcliff—CLASS 11 1

Joseph Bernard, Esq. 2

Rev. T. Radcliff—CLASS 10 3

The Medal withheld for want of sufficient merit.

SWINE.

15. For the best pig, 3 years old, or upwards 10 0 0
For the second best 5 0 0

Hon. Sir E. Crofton. Bt. co. Roscommon 1

R. Reynell, Esq. Killinan, co. Westmeath 2

Premium withheld for the want of sufficient merit.

16. For the best pig, two years old 10 0 0
For the second best 5 0 0

- R. Reynell, Esq, Reynella, co. Westmeath 1
 Rev Geo. St. George, co. Roscommon 2
 First premium adjudged to R. Reynell, Esq.
 Second premium adjudged to Rev. G. St. George.
17. For the best fat pig, one year old 10 0 0
 For the second best 5 0 0
 Mr. Edward Unthank, Dublin 1
 Mr. T. M. Bates, Dublin 2
 Premium withheld for want of sufficient merit.
18. For the best fat pig, six months old, but not exceeding twelve months 10 0 0
 For the second best 5 0 0
 Thomas Faris, Esq. co. Cavan 1
 Mr. T. M. Bates 2
 First premium adjudged to Thomas Faris, Esq.
 Second premium adjudged to Mr. T. M. Bates.
19. For the best of the prize swine—Silver Medal:
 Thomas Faris, Esq. 1
 Richard Reynell, Esq. Reynella 2
 Mr. T. M. Bates—CLASS 18 3
 Rev. George St. George 4
 The Medal adjudged to Thomas Faris, Esq.

The following were the Judges for the Cattle, Sheep, and Swine;

John Browne, Esq. co. Roscommon.
 Richard Smyth, Esq. co. Kildare.
 John A. Drought, Esq. King's Co.
 Bernard Mahon, Esq. co. Galway.
 Mr. Robert Thompson, butcher, Dublin.

Ploughing Match.

The annual ploughing march of the parish of Eddleston and county of Peebles, was held on Saturday the 19th of November, upon a field of close lay, on the farm of Borland, possessed by Mr. William Anes. The ground being marked off by Mr. William Cochran at Wormeston, Mr. Adam Bryden at Marcus, and Mr. James Thomson at Nether Falls, managers chosen on the occasion, 23 English ploughs started for the different premiums, and each ploughman having ploughed two ridges, the whole were inspected by Mr. John Paterson, of Wyndelaws, Mr. Thomas Ronaldson, at Skiprig, and Mr. Gideon Needham, at Dan Hall Mains, judges appointed to determine the same, when, after the most minute examination, they adjudged the first premium, being 11. 1s. to Robert Davidson, servant to Mr. Anes above-mentioned; the second, being 16s. to Alexander Forsyth, also servant to Mr. Anes; 2 third, being 12s. to Robert Lawson, servant to Mr. Thomas Noble, at Langoore; the fourth, of 8s. to Robert Veitch, servant to the Rev. Mr. Robertson, at Eddleston; and the fifth, to David Purdie, servant to Mr. Anes.

The first premium of 7s. 6d. for the straightest furrow drawn across a field, to Robert Lawson before mentioned; the second ditto, being 5s. to Robert Cochran, son to Mr. William Cochran, at Wormeston; and the third ditto, being 3s. 6d. to William Smith, servant to Alexander Forsyth, at Cloich.

It would be doing much injustice to the different competitors not to mention, that in general the ploughing was executed in a most masterly stile; and the judges can with the strictest truth aver, they found the greatest difficulty in determining the different premiums.

The exemplary regularity and good behaviour of the ploughmen is beyond all praise, and fully entitled to this public mark of approbation.

After the business of the day was over, the managers, judges, and other farmers present, dined with Mr. Anes, at Borland, by whom they were most

kindly and hospitably entertained. Many loyal and appropriate songs and toasts were given, and the evening spent with harmony and good humour, arising from mutual regard and good will among the guests, forming at once a complete contrast to, and abhorrence of the character of that unmerciful tyrant, who presumptuously wishes to subjugate this happy country, and which excited the unanimous determination by all present to resist his attempts for that purpose, and to stand or fall together.

Each unsuccessful candidate received one shilling. Although they met at Eddleston in the evening, and no doubt "fought their battles over again," yet they parted at an early hour in the most orderly manner.

This is the fourth ploughing match that has taken place in the parish of Eddleston; the good effect of it in the astonishing improvement in that truly essential art of good ploughing is so evident, that the promoters have resolved to continue it, and can with confidence recommend the adoption of it to every neighbouring parish.

The Price of Oats now greatly exceeds that of Barley, which is strongly recommended by Lord Somerville, and other agriculturists, as food for horses. In Portugal it is their common food; and the experiments which have been made as to its use in this country, are represented as having been highly favourable. It is more nutritive, and for horses of moderate work, would unquestionably answer well, and be palatable to the horses in two or three days.

At Gloucester fair on Monday last only few fat cows were bought, and sold high; pigs were plentiful, from 8s. 6d. to 9s. per score; good horses were scarce and dear; sheep gained rather more money than they have lately fetched; poor cattle, for straw, were enquired for, but not much advanced in price.

At Marlborough fair, sheep were in greater abundance than ever known, amounting to upwards of 15,000, and sold on the average 20s. a head less than last year.

On the first day of Bury fair, there was a very considerable shew of lean stock, which in general sold at rather reduced prices. Horses of the nag kind were very scarce and dear. On the second and third days prime dairies of butter were sold from 69s. to 70s. per firkin. Cheese much the same as at the October fair, viz. best two-meal 7½d. to 8d. and flat 3½d. to 4d. per lb.

At Shrewsbury fair, fat pigs, of which great quantities were at market, sold at an average of 5d. per lb. Sheep nearly as last fair. Fat cattle about ½d. per lb. advance. Cheese from 55s. to 68s. per cwt. Salt butter from 13s. to 13s. 6d. per gawn of 12lb.

Worcester toll-free fair had a tolerable good supply of fat and lean cattle, &c. which went off at nearly the same prices as at our last fair.

Saturday last 558 pockets of hops were weighed in our market, and on Monday (the fair day) 475 pockets were weighed. Current prices, from 5l. to 5l. 12s. per cwt.

Hereford annual great market was lately held, when cattle of every description, on account of the small number exhibited for sale, were disposed of at advanced prices; pigs, however, fell considerably. Very few horse were bought. Hops sold from 4l. 10s. to 4l. 16s.

Bath Agricultural Meeting.

ON Tuesday the 13th, the annual meeting of the Bath and West of England Agricultural Society commenced, with an exhibition of some very fine specimens of Devonshire cattle, some most excellent pigs of the improved Chinese breed, and a variety of other stock, not inferior to those exhibited on former years. At the dinner, his Grace the Duke of Bedford was in the chair; and amongst other distinguished agriculturists, breeders, and encouragers of these most useful pursuits who were present, were the Marquis of Bath, Lord Somerville, Mr. Northey, Sir John Hipplesey Cox, Sir Richard Hoare, William Gore Langston, William Wyndham (of Dynton)

Charles Gordon Grey, John Gale Everet, Thomas Joyce, Lewin Tugwell, Rev. Dr. Randolph, Rev. B. Richardson, Rev. J. Townsend, R. v. Mr. Bowles, Rev. Mr. Barter, Dr. Cogen, Messrs. Billingsley, Davis, Croke, Peffer, Golton, Langham, Hewer, Ludlow, E. Pickwith, Mathews, Bartley, R. Richardson, W. Smith, W. Cruse, Hazard, Ashley, &c. Besides the appropriate toasts which are usually given, his Grace, in the course of the afternoon, gave many of the most celebrated agricultural characters in the West of England, who were absent, as toasts, which gave great satisfaction to the company.

Some very curious double ploughs were exhibited; and, among many other useful implements, a new invented engine for watering gardens. Mr. Smith had the honour of exhibiting to his Grace of Bedford, and several of the distinguished characters present, his cabinet of extraneous fossils, from the different strata of England. Several most useful communications were made to the Society, of recent experiments and inventions, and the premiums offered last year were adjudged.

At this meeting the stock of cattle, sheep, &c. were not so numerous as on some former occasions, but for a variety and excellence perhaps inferior to none.

In the articles of neat cattle and sheep, a capital Devon bull, its sire and dam was produced by Mr. Parker, and obtained the premium. Also, a cow and her offspring of the same breed, by Mr. Wintle of Weston. A bull, its sire and dam, (a favourite kind of stock) by Mr. Ludlow, of Winterbourn. A curious heifer with her offspring, between the Indian bull and a Devon heifer, by J. White Parsons.—Of sheep, twelve prime South-down shearling rams, by J. G. Everett, Esq. Four choice breeding ewes, descending from Wiltshire ewes and deep crossings with Leicester rams, by W. Jones, Esq. of Wellington, and four remarkably fine cloathing woolled shearling rams, by Mr. Bartley, the secretary. In fat stock all the competitors possessed a very great degree of merit; a South down wether, the property of his Grace the president, particularly was considered to have been the best ever exhibited to the Society. Three two-year old sheep of the Ryeland and South-down breed with a single cross of the Spanish ram, the property of Lord Somerville, were eminently distinguished, as having acquired at so early a period the ultimate degree of ripeness, or maturity of growth and fatness. A very capital Leicester wether, the property of C. Gordon Gray, Esq. also obtained the premium, as did a fat ox of the Devon breed, shewn by G. Webb Hall, Esq. The fat pigs exhibited were all excellent in their kind, and served clearly to evince the vast improvement which has been effected in this species of stock.

His Grace of Bedford was reluctantly obliged to leave the meeting before its conclusion, in order to be present at the exhibition of prize cattle in Smithfield, and deputed Mr. Billingsby to officiate for him. Though this meeting was not so fully attended in point of numbers, as it has been on some occasions; yet it wanted nothing of that useful spirit and zeal for the encouragement of Agriculture and Rural Economy, which has always distinguished it.

The following Premiums and Bounties were awarded, viz.

To his Grace the Duke of Bedford, for exhibiting a fat South-Down wether, adjudged to have been the best ever exhibited to the society, bounty	£. s. d.
To the Rt. Hon. Lord Somerville, for three four-tooth wethers of the Ryeland and South-Down and a cross of the Spanish, complete in growth and fatness	4 4 0
To William Dyke, Esq. for the greatest number, and most profitable sort, of sheep; the comparison between South-Down and Wiltshire, premium	3 3 0
To Charles Gordon Gray, Esq. for the best fat sheep, premium	21 0 0
	5 5 0

	£.	s.	d.
To J. G. Everett, Esq. for twelve capital South-Down rams	10	10	0
To W. Jones, Esq. of Wellington, for four choice breeding ewes, descending from Wilts ewes, and deep crossings with Leiceister rams, bounty, accompanied with vote of thanks	5	5	0
To Mr. Bartley, the secretary, for four fine clothing woolled shearling rams, premium	5	5	0
To ditto, for a piece of very fine navy blue broad cloth, manufactured from wool of his own growth, i. e. fleeces of said rams and their associates	8	8	0
To S. Eldridge, Esq. for two prime fat sheep, bounty	3	3	0
To E. Pelter, Esq. for a prime Devon bull, its sire and dam, premium	21	0	0
To E. Ludlow, Esq. for a very fine bull, its sire and dam	5	5	0
To J. White Parsons, Esq. for a curious heifer, with her offspring, Indian and Devon admixture	5	5	0
To Mr. A. Wintle, for the best cow, and her offspring	5	5	0
To G. Webb Hall, Esq. for the best fat ox	5	5	0
To Messrs. Ludlow, Andrews, Smith, and Ewen, for fat pigs, valuable breeds, two guineas each	8	8	0
To J. Waldron, Esq. for manufacturing a piece of navy blue broad cloth, premium	10	10	0
To Benjamin Gray, jun. Esq. of Henstridge, for ploughing in a new district the greatest quantity of land by a pair of horses abreast, without a driver	5	5	0
To Mr. J. B. Cholwick, of Faringdon, near Exeter, for raising apple-trees (bearing fruit) from the kernel	5	5	0
To Mr. S. Bamford, for an improved apparatus in the business of wool-combing, so constructed as to supersede the use of charcoal, premium	5	5	0
To the inventor of a horse-scraper for cleaning turpikeroads, bounty	3	3	0
To Mr. W. James, for models of a ridging plough	2	2	0
To Edward Godwin, of Winterbourn, for hoeing 18 acres of turnips in a workmanlike manner, premium	3	3	0
To amount of premiums, &c. paid at the last ploughing match, 25th May, 1803	20	2	6

N. B. The premiums for the improvement of Swine are discontinued, it having been thought the views of the society in that respect were accomplished. The following Premiums were awarded to Labourers and Servants in Husbandry, viz.

	£.	s.	d.
To Richard Marsh, Chifelden, Wilts, for having brought up seven out of eight children, without parochial assistance	3	3	0
To Samuel Cullena, Higham, Somerset, ditto seven out of eight	3	3	0
To Thomas Watkins, Westbury-upon-Trym, Gloucestershire, seven; i. e. all his children	3	3	0
To Abraham Ford, Box, Wilts, seven out of eight	3	3	0
To Anthony Cook, Grittleton, Wilts, for 63 years faithful servitude in husbandry	3	3	0
To J. White, Donhead-St.-Andrew, Wilts, 49 years ditto	3	3	0
To Robert Hunt, Dewlish, Dorset, 56 years ditto	3	3	0
To John Lolis, Crewkerne, Somerset 38 years ditto	3	3	0
To Mary Taylor, Stoke-Abbot, Dorset, 38 years ditto	3	3	0
To Ann Gay, Grittleton, Wilts, 28 years ditto	3	3	0
To Ann Marsh, Maypowder, Dorset, 24 years ditto	3	3	0
To Joan Forward, Sampford-Arundel, Somerset, 26 years ditto	3	3	0

Total £.209 2 6

RESOLVED, That in case of the death of labourers and servants in husbandry, the bounties awarded shall be granted to their families.

The thanks of the society were unanimously voted to the Rev. Thomas Owen, for his excellent translation of *Marcus Portius Cato*, and *Marcus Terentius Varro*, on the Ancient Husbandry; and it was ordered that the work be referred to the committee of correspondence and enquiry: to Sir Charles Warre Mallet, bart. for an Indian hand corn mill, obligingly sent to the society, and which on trial promises to be of considerable utility for the purpose intended; and to Mr. J. Exter, for his communication on feeding cattle with oat-chaff, and on drilling clover between the rows of corn; also ordered, that such communication be published in the next volume of the society's Select Correspondence.

RESOLVED, That the secretary be requested to correspond with Arthur Young, esq. secretary to the Board of Agriculture, in conformity with the purport of his circular address.

BEDFORDIAN PREMIUM.

The Bedfordian gold medal will be presented to the author, who, at or before the first meeting in November 1804, shall produce to the society the best Essay, founded on practical experience, on the Nature and Properties of Manures, and the mode of preparing and applying them to various Soils; in which Essay shall be pointed out the best and cheapest manner of collecting and preparing the different kinds of Manures, and of the state, season, and quantity in which they should be applied.

The thanks of the society were severally presented to the Rev. Mr. Broughton, C. Gordon Gray, esq. and W. Dyke, esq. vice-presidents, for their ready and valuable assistance in the chair at the previous meetings; as well as to the several committees, for their various attentions through the year, and to all unsuccessful exhibitors of live stock, implements, &c.

The secretary's current accounts were examined, approved, and signed by the president; and the funds of the society having been stated, were found considerably to have increased against accumulating expences, and the unprecedented amount of premiums awarded in the current year.

The following were announced to have been added to the list of members since the last annual meeting; being many more than have been lost by death, resignation, &c.

The Right Hon. Lord Porchester, Sir Hugh Smith, bart. the Rev. Mr. Falconer, Rev. Mr. Hammond Foxcroft, Josiah Wedgewood, esq. Alexander Brodie, esq. Francis Eyre, esq. W. Parker Hammond, esq. J. Fowmes Luttrell, esq. M. P. W. Sheppard, jun. esq. Robert Smith, esq. J. Enfor, esq. Wm. Dyke, jun. esq. Henry Blunt, esq. Philip Sheppard, esq. John Jekyll, esq. James Templar, esq. Robert Davis, esq. Valentine Jones, esq. Mr. John Hodding, Mr. John Harding, Geo. Tate, esq. Arthur Forbes, esq. J. S. Andrews, esq. Dr. Archer, and Mr. Creaser.

The president having at this time left the chair, which then being taken by J. Billingsley, esq. it was unanimously resolved, on the motion of that gentleman, that his Grace be requested to accept the most cordial thanks of the meeting, for the honour conferred, and for his zealous, discriminating, and impartial attention, so eminently displayed at the several sittings of this anniversary.

By order of the Society,
NEHEMIAH BARTLEY, Secretary.

N. B. The Secretary will have two or three Merino Rams to dispose of.

Manufactures and Useful Arts.

Premiums to be paid to Manufactures.

THE commissioners and trustees for fisheries, manufactures, and improvements, in Scotland, have given notice, that the gentlemen who

acted as judges, in examining the various articles of Scottish manufactures, lodged with G. Thomson, their principal clerk, in competition for the premiums offered for the present year, having ascertained the preferences, and given their opinion upon each article; and the sealed notes, containing the names of the respective manufacturers, being then opened, in presence of a committee of the trustees, it was found that the premiums are gained as under, viz.

LINENS.

For the best and most elegant suit of damask table linen, the pattern not repeated; James Thomson, at Drumsfugh, near Edinburgh, the full premium of

£.30 0 0

For the best and most elegant suit of damask table linen, of a repeated pattern; Robert Plenderleath, Edinburgh, the full premium of

15 0 0

For the best two suits of diaper table linen, woven in a loom of parts, in imitation of damask; David Cuthbertson, at Sciennes, near Edinburgh, the full premium of

9 0 0

For the best two suits of diaper table linen, the patterns not exceeding three designs; Messrs. Macvicar, Allan & Co. of the Linen Hall, Edinburgh, the full premium of

6 0 0

For the best 12 pieces of huckaback, or towelling, in imitation of that made at Darlington; the before-mentioned Robert Plenderleath, the full premium of

16 0 0

For the best 12 pieces of yard-wide plain linen, from a nine to a twelve hundred; Bernard Thomson, in East Weems, Fifeshire, the full premium of

16 0 0

WOOLLENS.

For the best ten pieces of forrest, or dressed woollen cloth, the general price 5s. 6d. per yard; and for the second best ten pieces of the same, 2s. and 1s. were offered, and two parcels produced in competition being found equal in merit, the premiums were divided between the manufacturers, viz.

William and David Thomson & Co. at Galashiels 16 10 0

And George Murray, at Darlinghaugh, near Galashiels 16 10 0

For the best 10 pieces of forrest, or dressed woollen cloth, the general price 4s. 6d. per yard; William Brown, in Galashiels, the highest premium of

18 0 0

For the second best ten pieces; Andrew Clapperton, Galashiels 9 0 0

For the best ten pieces of dressed woollen cloth, at 3s. 3d. per yard; Hugh Sanderson, in Galashiels, the highest premium of

13 0 0

For the second best ten pieces; William and John Robert, jun. and Co. also in Galashiels 6 0 0

6 0 0

For the best ten pieces of dressed woollen cloth, at 2s. 3d. per yard; the before-mentioned George Murray, in Darlinghaugh, the full premium of

10 0 0

For the best eight pieces of flannel, in imitation of the Welch, not exceeding 2s. 6d. per yard in value; James Hillson & Sons, Jedburgh, the highest premium of

16 0 0

For the second best eight pieces; John Archibald & Co. in Tulliebody, Clackmananshire, the sum of

4 0 0

COTTON, SILK, AND OTHER ARTICLES.

For the best ten pieces of muslin handkerchiefs, in imitation of the Indian fabric called Mull-mull; Laurence Philips & Co. in Glasgow, the full premium of

18 0 0

For the best two dozen shawls or scarfs, plain and worked, in imitation of the Indian; B. Bowie & Co. in Edinburgh, the full premium of

12 0 0

For the best two dozen of fancy silk handkerchiefs; James Mitchell, Leith Wynd, Edinburgh, the full premium of

12 0 0

For the best two pieces of black farfnets, the premium was equally divided, because of the equal merits of two parcels produced in competition, viz. to

Allan Barr, in Canongate	8	0	0
And the said James Mitchell	8	0	0

For the best drawing on design paper, of a pattern for diaper table linen, in imitation of damask; Adam Mitchell, weaver, Canongate, Edinburgh, the highest premium of

	4	0	0
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For the second best drawing of the same description; John Cook, sen. weaver, in Dumferline

	2	0	0
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For the best two drawings on design paper for diaper table linen, not exceeding three designs each; William Howden, weaver, in Canongate, the highest premium of

	2	0	0
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For the second best two drawings; John Cook, sen. above mentioned

	1	0	0
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Of the various other articles, for which the trustees offered premiums, none were produced.

Mr. Lazarus Beach, of Connecticut, in America. has presented to the Museum, at New York, a quire of paper made of the asbestos at his paper mill at Daubury, in March, 1792, which the hottest fire will not consume.

The following is a correct statement of the exportation of British manufactures and produce for the five years preceding 5th January, 1803:

1798	—	33,148,682
1799	—	38,942,498
1800	—	39,471,203
1801	—	41,770,354
1802	—	48,500,683

The following receipt for preventing contagion, is communicated by a respectable naval officer, who frequently witnessed its efficacy in the West Indies. Take of rue, wormwood, sage, lavender, mint, and rosemary, each one handful, and put them with one gallon of the best vinegar into a stone jar, which must be covered over with paste, and set them within the warmth of a fire to infuse for eight days; then strain the liquor off, and put into every quart bottle, three quarters of an ounce of camphor, which must be dissolved in a little of the liquor before it is put into the bottles. Rub the temples and loins with this preparation before going out in the morning, wash the mouth with it, snuff some up the nostrils, and carry a piece of sponge that has been dipped in it to smell at pretty often. With this precaution, the above gentleman asserts, that the crew of his vessel were preserved from the yellow fever, though frequently engaged in burying the dead.

An American chemist, at New York, likewise announces a discovery which he positively asserts to be a specific remedy for the same dreadful disorder. It is rock salt, to be chewed by the patient, and the spittle to be swallowed, and copious doses of molasses to be afterwards taken; the drink to be pure water. He denies that the fever is contagious, or that it proceeds from the excess of bile in the habit. On the contrary, he maintains that a deficiency of bile is the prevailing cause, and that the infection proceeds principally from the effect of gas arising from animal putrefaction; which gas he says is neutralized by the rock salts.

A gentleman lately exhibited in the bath at Brexton, a curious apparatus which he calls a Neutilus; by the use of it, any person may walk across the deepest river without danger of sinking. The experiment was made in the presence of a great number of spectators, who were highly gratified in witnessing the complete success of an invention, which must be of such importance to mankind, as we understand the apparatus may be applied to either boats or ships of the largest dimensions, which will render them incapable of sinking, even if the bottoms were beaten out.

LONDON PRICES OF GRAIN for December, 1803.

MARK-LANE, Monday, November 28.

Price of Grain, on board Ship, as under.

OUR supply of Wheat, to-day, from the coast of Essex and Kent, is very considerable, and the quality, in general, good; but the quantity exceeding the demand, the sales have been at 2s. and 3s. per quarter cheaper than last Monday. Barley, likewise, has come to hand in plenty, and is 2s. per quarter lower, which caused, as a matter of course, a like depression in Malt. Peas and Beans are all ready sale, and with little variation from last week. Oats are a good supply, and remain at former stated prices. Flour has given way a trifle, there being plenty on hand.

Wheat	42s to 56s	Malt	52s to 58s od	Grey Peas	35s to 38s 6d
Fine	57s to 59s od	Oats	23s to 28s	Small Beans	37s to 42s od
Rye	31s to 33s	Polands	29s to 30s od	Ticks,	35s to 39s od
Barley	23s to 27s 6d	White Peas	50s to 55s		

Monday, December 5.

WE have very considerable arrivals of all Grain to-day. Wheats, of the ordinary kind, continue on the decline: but the fine nearly keep last Monday's prices. Barley is likewise further depressed by the large influx: and Malt, of course, falls with it. Peas, of both sorts, are also a trifle cheaper; but Beans keep our last currency. In consequence of the arrival of many cargoes of Oats that article has fallen 1s. per quarter. Flour is in plenty, and cannot be stated at higher than 50s. per sack.

Wheat	44s to 57s	Barley	21s to 26s od	White Peas	50s to 55s od
Fine	58s to 59s od	Malt	52s to 59s od	Grey Peas	35s to 38s od
Rye	30s to 32s od	Oats	22s to 26s	Sm. Beans,	26s to 40s od
		Polands ditto	27s to 28s od	Ticks,	33s to 37s od

Monday, December 12.

WE were well supplied with most Grain to-day; although the Markets of Wednesday and Friday are always trifling compared with Monday's, yet Barley and Oats had a start on Friday; but to-day, have both fallen back to the prices of this day fortnight. Fine White Wheats, of prime quality, fetch nearly the same as last Monday; but the middling and ordinary sorts do not sell in proportion, they being 2s. and 3s. per quarter cheaper. Small and Tick Beans, as well as Peas of both sorts, stand nearly as last. Little doing in Rye, and rather lower. Flour, the highest 50s. per sack.

Wheat	43s to 56s	Malt	52s to 58s od	White Peas	48s to 54s od
Fine	57s to 58s od	Oats	19s to 24s	Grey Peas	37s to 41s od
Rye	29s to 31s	Polands	25s to 26s od	Sm. Beans,	36s to 40 od
Barley	20s to 26s od			Ticks	34s to 37s od

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of November, and the 20th of December, 1803.

BANKRUPTCIES.

The Solicitors' Names are between Parentheses.

ALDERSON, Thomas Middleton, York, corn-factor. (Allen and Exley, Furnival's-inn)
 Algar, John, Threadneedle-street, boot and shoe-maker. (Duff, Thavies'-inn)
 Atkinson, William, Wortley Mills, merchant. (Allen and Exley, Furnival's-inn)
 Bell, Carley, Sampson's-gardens, Wapping, mariner. (Swaine and Stevens, Old Jewry)
 Bawtree, Samuel, Jun. Crescent, London, corn-factor. (Parrotier and Lee, London-street)
 Binns, John, Kirk-urton, clothier. (Baliye, Chancery-lane)
 Beaver, George, Tavistock-place, Pancras, stone-mason and builder. (Edwards, Red Lion-square)
 Binns, William, late of Kirkburton, clothier. (Sykes and Knowles, Bowwell-court)
 BIRBY, John, Yarmouth, shopkeeper, &c. (Thomas, Bear-binder-lane)
 Binchell, Thomas, Basinghall-street, factor. (Walton, Carr. Thomas. Gomer's-hall, cotton spinner. (Smith, Hatton-garden)
 Bennet, William, Halesworth, malster and coal-merchant. (Robins, Gray's-inn place)
 Blyth, Thomas, Birmingham, factor. (Baxters and Martin, Furnival's-inn)
 Blaylock, George, Newcastle-upon-Tyne, merchant. (Bainbridge, Newcastle)
 Buck, William, St. Mary-at-Hill, merchant, and hop and rum dealer. (Martin, Vintner's-hall)

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Bennett, John Wotton, Exeter, dyer. (Sanfum, Ely place)
 Boardman, Peter, Bolton, manufacturer. (Milne and Parry, Temple)
 Barwell, William, Yarmouth, brandy merchant. (Whitaker, Broad-court, Long Acre)
 Burcham, Charles, Stowmarket, butcher. (Evans, Furnival's-inn)
 Buisigny, Victor and James Rothwell, Liverpool, merchants. (Blackstock, Temple)
 Bradbury, Samuel, Alderigate-street, banker and broker. (Adams, Old Jewry)
 Bonnell, Obadiah, Bell-yard, Carey-street, tailor. (Earle-street, Blackfriars)
 Blacklock, William, Rathbone-place, (partner with Joseph Tunnal of Burlington, dealers in glass and earthenware.) (Wilson, Crown-office-row, Temple)
 Clayton, Joseph, Southwark, chiefe-monger. (Wood, Bartholomew hospital)
 Coleman, John, Liverpool, biscuit-baker. (Windie, Bartlett's-buildings)
 Cohen, Lewis, Gower's-row, Goodman's-fields, merchant and leather manufacturer. (Howard, Jewry-street)
 Clifton, Hieronymus John, America-square, merchant. (Mayo and Pearce, Cloak-lane)
 Cramer, John, Spa Gardens, Bermondsey, victualler and musical instrument-maker. (Whitton, Great James-street, Bedford-row)
 Cooper, William, Nottingham, grocer. (Maddougall and Hunter, Lincoln's-inn)
 Clarke, Thomas, Liverpool, fadler. (Egerton, Gray's-inn)

3 P

- Curtis, John, Boston, innholder. (Marshall, Boston)
- Curtis, Thomas, Radford, bleacher. (McDougal and Hunter, Lincoln's-inn)
- Clark, John, Holton, merchant. (Bicknell, Spring Garden-terrace)
- Cullimore, Thomas, Bristol, merchant. (Blandford and Sweet, Temple)
- Denton, George, Kingston, Hull, currier. (Ellis, Curfitor-street)
- Dutton, Samuel, Manchester, merchant. (Milne and Parry, Temple)
- Duckett, George, Middlesex street, Somers' Town, timber-merchant. (Evans, Birch-lane)
- Dowling, Thomas, John Low, and Samuel Bishop, Wood-street, hatters. (Wild, Warwick-square)
- Dawes, John, Camomile-street, mariner. (Toulmin, Union-street, Southwark)
- Downie, John, Old Broad-street, merchant. (Haynes, Fenchurch-street)
- Davis, John, Wallingford, wine and brandy-merchant. (Passmore, Doughty-street)
- Elkington, William, Birmingham, grocer. (Swain and Stevens, Old Jewry)
- Fisher, James, Lancaster, late of Trinidad, merchant, now, or late, partner with Abraham Zimon Doncker Culveric. (Mason and Wilson, Lancaster)
- Fuller, Daniel, Woodbridge, maltster and merchant. (Robbins, Gray's-inn-place)
- Fletcher, William, late of Gray's-inn, now of Hoxton, money scrivener. (Pullen, Fore-street)
- Fell, William, St. Martin's-lane, taylor. (Leeson, Staples'-inn)
- Felton, William, Leather-lane, coachmaker. (Williams, Curfitor-street)
- Finist, Robert, Tavistock-street, Bedford-square, money-scrivener. (Griffith, Secondaries-office, King's Bench-walk, Temple)
- Fisher, Frederick George, Brighthelmton, bookfeller. (Rippon, Bernonday-street)
- German, Anthony and John Jephson, Nottingham, hosiery and cotton-sellers. (Rider, Fetter-lane)
- Gardner, William, Newent, baker and maltster. (French, and Williams, Cable-street, Holborn)
- Gell, John, Naburn, draper and taylor. (Freame, Little St. Martin's-lane)
- Groves, Henry, Merthyrtydvil, shopkeeper. (Price and Williams, Lincoln's-inn)
- Henderlop, Thomas, Milk-street, warehousman. (Coren, Cliford's-inn)
- Hale, Henry, Birch-lane, oilman. (Noy, Mincing-lane)
- Henry, Isaac, Liverpool, shopkeeper. (Windie, Bartlett's-buildings)
- Hansford, Mary, and Susanna Leonard, Dover-street, milliners. (Sherwin, Great James-street, Bedford-row)
- Hay, James, Church-lane, St. George, bricklayer and builder. (Keeks, New-road, Wellclose-square)
- Hodgson, Thomas, Stamford Bridge-lodge, bead jobber. (Lambert, Hatton Garden)
- Holden, George, jun. Kingston Hull, merchant. (Roffer, Kirby-street)
- Handley, John, Manchester, carrier. (Ellis, Curfitor-street)
- Jenkins, David, Salver, linen-draper. (James, Gray's-inn)
- Jones, Thomas, Moonmouth, shopkeeper. (Price and Williams, Lincoln's-inn)
- Jameison, Archibald, Robert Claffon, Burr-street, merchants. (Birket, Bond-court, Walkbrook)
- Jolley, Nathan, Woodstock-street, warehousman. (Moran, Gray's-inn)
- Jackson, William, J. Hungerford, grocer and shopkeeper. Berry and Kings Meard street, Soho
- Jackson, John, William Lowe, Charles Johnson, James Shuffebornham, John Johnson, and James Leigh, Manchester, merchants. (Milne and Parry, Temple)
- Kennedy, John, Broad-street, merchant. Partner with Angus Kennedy of Jamaica. (Palmer and Tomlinson, Warfurd court)
- Knowles, Henry, Rushworth, cotton-spinner. (Hobrew, Bolton)
- King, John, Berkeley, cordwainer. (Jenkins, James and Co. New Inn)
- Knight, John Brooke, Camomile-street, cordwainer. (Collins, Spital-square)
- Lewis, Thomas, Bristol, merchant. (James, Gray's-inn)
- Leveridge, William, Shore-ditch, cabinet-maker. (Hudson, Winkworth-buildings, City-road)
- Mours, George, Long-alley, Shoreditch, leather seller. Goodchild, Camomile-street
- Monteath, James and James Sequeira, Gracechurch-street, druggists and chymists. (Pearce and Son, Swithin's-lane)
- Mariden, John, and John Heywood, Marsden, cotton-spinners. (Ellis, Curfitor-street)
- Monk, Francis, Folkestone, tanner. (Webb, Folkestone)
- Moore, Hugh, ironmonger-lane, merchant. Partner with Thomas Moore, Baltimore, America. (Willis, Warfurd-court)
- McClure, David, Woodbridge, brandy-merchant. (Robins, Gray's-inn-place)
- Moore, James, Milden-hall, cordwainer. (Giles, Shire-lane)
- Martin, Thomas, Coleman-street, and John Henry Ford, Coleman-street-buildings. (Dann, Threadneedle-street)
- Merritt, William, Blackman-street, Southwark, Rationer. (Noy, Mincing-lane)
- Murray, James, Portsmouth, fadler. (Bracket, Clement's-inn)
- Newlove, Edward, Great Driffield, vintner. (Willis, Warfurd-court)
- Noble, Mark, Narrow-wall, Lambeth, merchant and iron-founder. (Williams and Rawlison, Chatham-place)
- Pearce, William, Bunhill row, victualler. (Fois, Effex-street, Strand)
- Pearson, John, Maryport, Cumberland, mariner. (Clen-nell, Staple's-inn)
- Pickerfill, Thomas, Little Turnstile, Holborn, baker. (Mills, Ely-place)
- Parke, Joseph, Hereford, brandy-merchant. (Williams, Bedford-row)
- Poppleton, Paul, Almonbury, dry-falter. (Sykes and Knowles, Botwell-court)
- Pitts, William, Little Wild-greet, Lincoln's-inn-fieNs, silver-smith. (Lodington and Hall, Temple)
- Pollington, Charles, Havant, shopkeeper. (Williams, Upper John street, Fitzroy square)
- Richmond, Emanuel, Charlotte mews, Pancras, stable-keeper. (Mawley, Tottenham street)
- Robinson, James, Liverpool, provision merchant. (Atkinson, Chancery lane)
- Richings, Stephen and Somerset, Oxford, breeches maker and glover. (Richings, Thavies-inn)
- Shelley, John, Mile End-road, mariner. (Incles, Billiter-square)
- Sherriff, Joseph, Blackfriars road, linen draper. (Adams, Old Jewry)
- Selway, James, Broadway, Westminster, grocer. (Rigby, New City Chambers, Bishopsgate street)
- Taylor, Thomas, Beal, Leicester square, shoemaker. (Newcomb, Vine street, Piccadilly)
- Thomas, James, Spread Eagle court, Finch lane, and Walworth, merchant. (Rawlison, Chatham place)
- Townsend, John, Ludgate hill and Lambeth, laceman. (Field, Friday street)
- Tutcher, Thomas Parry, Holborn hill, linendraper. (Brown, Little Friday street)
- Thompson, William, Dean street, Southwark, and Ebenezer Leadbeater, Moor place, Lambeth, merchants, and also surviving partners of William Atkinson, under the firm of William Atkinson and Co (Wadefon, Barlow, and Grosvenor, Austin friars)
- Tovey, Edward, North Bradley, Wilts, clothier. (James, Gray's-inn)
- Tinkler, George, and John Risk, Mead's court, Soho, leather-sellers. (Brown, Little Friday street)
- Tanner, Nicholas, St. Deceunan's, maltster. (Blake, Cook's court, Car-y street)
- Tench, William, Belton Mill, miller. (Sanderfon, Palfgrave-place)
- Thompson, William, Manchester, dealer. (Willis, Warfurd court)
- Thompson, Anthony, some time since of Whitley Wood, afterwards of Selley Hall farm, and now of Birmingham, merchant and manufacturer. (Blagrove, Salisbury street)
- Whitehead, Edward, New road, Tottenhamcourt road, merchant. (Flahman, Ely place)
- Webb, Joseph jun Charles street, Covent Garden, tailor. (Taylor, Mortimer street)
- Weaver, Thomas, Manchester, cornfactor. (Ellis, Curfitor street)
- Whitehouse, Edward, Fenton, earthenware dealer. (Price and Williams, Lincoln's-inn)
- Wheeler, Joseph, Blackheath, miller. (Harvey and Robinson, Lincoln's-inn)
- Walford, Mary, Old street, soap boiler. (Ward, Bennetts, and Greaves, Henrietta street, Covent Garden)
- Warwick, John, Long Buckley, tailor and shopkeeper. (Mandricy, Long, and Ince, Symonds-inn)
- Watson, Edmund Utting, Tooting, second officer of the Glaxton East Indiaman. (Wright and Holdsworth, Sherborne-lane)
- Windett, James, Norwich, grocer. (Harmer, Norwich)
- Whittaker, James, Haslingden, grocer and woollen manufacturer. (Clarke and Richards, Chancery lane)

DIVIDENDS ANNOUNCED.

- Abbot, Thomas, Wisbeach, liquor merchant, January 24
- Andrews, Cesar, Green Hamerton, spirit merchant, December 23
- Anderfon, Robert, Guildford street, and of the Old Pay office, Broad street, merchant and insurer, December 3
- Anderfon, Christopher, Newcastle, cheesemonger, January 4
- Brewer, William, Rochester, coachman, January 17
- Bury, John, and Samuel Barnes, Manchester, manufacturers, December 13
- Bradley, Samuel, jun. Leicester, grocer, December 19
- Blyth, Thomas, Birmingham, factor, December 19
- Balshen, Michael, and Jeremiah Herman, Watling street, merchants, December 22
- Barlow, John, Manchester, grocer, December 30
- Billet, George, Southwark, linendraper, January 14
- Beaumont, Thomas, Wakefield, ironmonger, January 7
- Beaton, William, the elder, Robert, John and William the younger, Masborough, chemists, brewers, and glassmen, January 24
- Bird, Mertens, and Benjamin Savage, Jeffries square, merchants, January 17
- Beare, Shirley, David, Kennington, distiller, January 21
- Beaumont, Thomas, Wakefield, ironmonger, January 14
- Corbett, Robert, and Samuel Affech, Liverpool, merchants, December 30
- Corbet, John, Milk Greet, warehousman, January 7
- Clegg, John, and John Prince, Watling street, warehousmen, December 24
- Cook, John, Warren street, Tottenhamcourt road, linendraper, January 3
- Cooke, George, and Joseph Kilner, Nicholas lane, merchants, December 24

Calderwood, John, Clarence place, Pentonville, wine merchant, December 24
 Cadwell, William, Maidstone, upholsterer, January 3
 Chater, William, Charles Street, Long Acre, coach spring maker, January 17
 Clark, John, Shoe lane, carpenter, January 17
 Dorset, George, John Johnson, John Wilkinson, William Berners, and James Tilton, New Bond street, bankers. Separate estates of Dorset and Tilton, December 31
 Dunn, William, Greenbank, Wapping, baker, December 17
 East, Robert, Weybread, butcher, December 22
 Eccles, Thomas, and Richard Thomas Holbrook, Watling Street, warehousemen, January 24
 Early, James, Chelmsford, coal merchant, January 21
 Fowler, William Shrefford, and Mathew Samuel Haynes, Greville street, Hatton Garden, (carrying on trade in Walbrook as merchants and insurance brokers) January 14
 Fearon, James, Peter, Upper Grafton street, Fitzroy square, late Captain of the Belvidere East Indiaman, January 11
 Galton, Galton, Edward, Iford, innkeeper, December 20
 Gulley, James, Frome sitwood, innholder, January 21
 Giddons, Thomas, Abingdon, currier and sackcloth maker, January 14
 Hogg, James, and Edward Holmes, Sherborne lane, December 24
 Hambly, William, Falmouth, and of Great Bell alley, London, merchant, December 20
 Hughes, Harry and Michael Moorhouse, Manchester, dealers, December 20
 Huller, Thomas, Weston Covile, farmer, January 10
 Hendy, Christopher, Falmouth, mariner, December 29
 How, Peter, Whitehaven, merchant, January 10
 How, Peter, John Younger, and John Wilkinson, Whitehaven, merchants, January 20, final
 Hagne, Jonathan, Warkley, merchant and cutter, deceased, January 4
 Hittcock, Thomas, Frome, clothier, January 6
 Heuchan, John, Liverpool, dealer in muslin, January 6
 Harris, Charles, Bristol, fruiterer and wine merchant, January 16
 Jeffery, John, Bristol, cutter, January 4
 Jackson, Thomas, Manchester, silk manufacturer, December 31
 Jones, Joseph, Wood street, Leghorn hat warehousen, December 17
 Johnson, Anthony, Chelsterfeld, grocer, January 4
 Johnson, Thomas and Christopher, Newcastle, linendraper, January 27
 Jones, Joseph, Wood street, Leghorn hat warehousen, January 28
 Knibb, William, Maidenhead bridge, innkeeper, December 24
 Kemp, John, Mark lane, wine merchant, December 24
 Lathy, John, Honiton, serge maker, December 28
 Lewis, Thomas Weston, Falmouth, merchant, January 21
 Lawrence, James, Eltham, baker, December 24
 Lemon, John, Saffron Walden, breadman, January 14
 Larkin, Charles, Rochester, coachmakers, January 28
 Manning, James, Thomas Heavyside, and Thomas Borman, Barge yard, Manchester warehousemen, January 10
 Mottram, Thomas, Atherton, woolcomber and grocer, December 23
 Morphew, William, Rotherfield, dealer in corn, February 7
 Moses, Samuel, Brighthelmston, linendraper, &c. January 14
 Morley, Samuel, Fleet street, tailor, January 7
 Mitchell, Thomas, Hatton court, Threadneedle street, merchant, January 14
 Miller, George, Bodmin, vintner, January 7
 Mottram, Thomas, Atherton, woolcomber, January 18
 Nesbitt, John, Edward Stewart, and John Nesbitt, jun. Aldermanbury, merchants, January 21
 Parkins, John, Sheffield, cast steel maker, January 4, final
 Pourtalis, Andrew Paul, and Andrew George, Broad street buildings, merchants, January 21
 Peplow, John, Shrewsbury, linendraper, January 4
 Probert, James, Leadenhall street, victualler, January 14
 Perfort, Martin Waller, and Augustus William Bodecker, Little St. Helens, merchants, February 18
 Paley, Richard, Leeds, soap boiler, January 30
 Pratt, Charles, Cambridge, hair dresser, January 9
 Porter, Richard, Great Driffield, spirit merchant, &c. February 6
 Richardson, Jasper, Carlisle, grocer, December 26
 Rogers, William, Dipley Mill, miller, &c. December 27
 Rogers, Richard, Calcon, dealer, deceased, December 27
 Russell, George, Birmingham, merchant, January 11
 Rowland North, and Peter Rowland, Great Coggeshall, blanket makers, January 12
 Shaw, John, Ann, Sarah, and Barbara Woodhouse, Lancaster, merchants, partners with Theophilus C. Shaw, of Jamaica, December 30
 Scott, James, Stratford, lime burner, January 3
 Simpkins, Robert Law, Leicester, hofer, December 30
 Sutcliffe, John, York, chemist, &c. December 23
 Smith, John, Wakefield, harter and haffer, December 19
 Spalding, Henry, wetfield, grocer, December 12
 Stainbank Christopher, Old Bond street, printer, (partner with Charles Random Heringer) December 24
 Smith William, and John Ashton, Newgate street, linen drapers, January 4
 Siplon Charles, Masborough, boat builder, January 3
 Spraggon William, Graveling, floptellers, January 14
 Spalding Henry, Melfield, grocer, December 22
 Smith William, Newcastle, tobacconist, January 24
 Taskock James, Finch lane, broker, January 21
 Tweddell William, Tarraby, carrier, December 25
 Tooley Thomas, Pancras lane, tailor, December 6
 Towle Thomas and Joshua Jackson, Newgate street, warehousemen, December 31
 Tetley William, Arnly, maltster, January 4
 Thomas Richard King, Ewellham, mercer, February 3
 Wheldale William, Oxford street, linen draper, December 24
 Warren George, Coventry street, upholder, January 17
 Ware Robert and Philip Francis, Lawrence lane, Cheap side wholesale glovers, January 14
 Wood Thomas, Robert Wood and William Troughton, Smitham bottom, brewers, January 21
 Wilmot Daniel, Whitecross street, wine and brandy merchant, January 17
 Woodward Jonathan, Derby, calic manufacturer Jan. 11

Prices of Raw Hides, Hay and Straw, &c. for December, 1803.

	1st Week	2d Week	3d Week	4th Week	5th Week
Raw Hides.	s. d.	s. d.	s. d.	s. d.	s. d.
Best Heifers & Steers, pr ft.	4 0 to 4 2	4 0 to 4 2	4 0 to 4 2	4 0 to 4 2	4 0 to 4 2
Middling — —	3 6 to 3 8	3 6 to 3 8	3 6 to 3 8	3 6 to 3 8	3 6 to 3 8
Ordinary — —	3 0 to 3 4	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2
Market Calf — —	10 6	10 6	10 6	10 6	10 6
Eng. Horse — —	14s to 16s	14s to 16s	14s to 16s	14s to 16s	14s to 16s
Sheep Skins — —	3 0 to 6 0	3 0 to 6 0	3 0 to 6 0	3 0 to 6 0	3 0 to 6 0
Lamb Skins — —	2 6 to 4 0	2 6 to 4 0	2 6 to 4 0	2 6 to 4 0	2 6 to 4 0
Prices of Hay and Straw.	l. s. d.	l. s. d.	l. s. d.	l. s. d.	l. s. d.
St. James's—Hay —	5 — 6	5 4 0	5 5 0	5 — 6	5 5 0
S raw —	1 8 6	1 9 3	1 9 3	1 9 3	1 7 0
Whitech.—Hay —	5 2 0	5 3 0	5 — 0	5 — 0	4 18 0
Clover —	6 7 0	6 5 0	6 0 0	6 3 0	6 — 0
Straw —	1 11 0	1 12 0	1 12 0	1 14 0	1 10 0
Newbury.					
Wheat — — —	45s to 62s	48s to 62s	46s to 61s	44s to 62s	37s to 61s
Barley — — —	23s to 26s	22s to 25s	21s to 24	20s to 23s	20s to 23s
Oats — — —	17s to 24s	20s to 24s	20s to 25s	19s to 25s	20s to 23s
Beans — — —	—s to —s	—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	—s to —s
Peas — — —	—s to —s	—s 10 —s	—s to —s	—s to —s	—s to —s

Prices of Hops, Meat, Seeds, Leather, Tallow, &c. for December, 1803.

Price of Hops.	First Week		2d Week		3d Week		4th Week		5th Week	
	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Kent — —	90 to	108	90 to	108	90 to	108	90 to	108	90 to	110
Suffex — —	90 to	100	88 to	100	90 to	104	90 to	104	90 to	100
Effex — —	90 to	100	88 to	100	90 to	104	90 to	104	90 to	100
Pockets.										
Kent (new) — —	105 to	126	105 to	126	106 to	126	106 to	126	108 to	126
Suffex — —	104 to	116	105 to	120	106 to	118	106 to	118	108 to	120
Farnham — —	140 to	189	160 to	189	140 to	189	140 to	189	108 to	186

Seeds.										
Red Clover per cwt. —	40 to	100	40 to	100	40 to	100	40 to	100	25 to	100
White Clover, ditto —	70 to	112	70 to	112	70 to	118	70 to	118	70 to	190
Trefoil, ditto —	30 to	56	20 to	56	25 to	65	25 to	50	20 to	60
Caraway ditto —	60 to	65	60 to	65	60 to	65	60 to	65	60 to	65
Coriander ditto —	16 to	17	16 to	17	16 to	17	16 to	17	16 to	17
Turnip, (per bushel) —	20 to	28	20 to	30	20 to	30	20 to	30	20 to	30
Canary Seed (per last.) —	70 to	74	65 to	70	65 to	70	65 to	70	65 to	70
White Mustard Seed —	12 to	13	10 to	12	10 to	13	10 to	12	10 to	12
Brown ditto —	16 to	18	10 to	14	10 to	14	10 to	14	10 to	16
Rape Seed, (per last) —	361 to	381	361 to	391	351 to	381	361 to	391	351 to	381

Meat at Smithfield.										
To sink the offal, p. ft. 8lb.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
Beef — —	4 4 to	5 8	4 4 to	5 8	4 0 to	5 6	4 0 to	6 0	4 0 to	5 4
Mutton — —	4 6 to	5 6	4 0 to	5 4	4 0 to	5 4	4 0 to	5 4	4 0 to	5 6
Veal — —	5 0 to	7 0	5 0 to	7 0	5 0 to	6 6	5 0 to	6 6	6 0 to	7 6
Pork — —	3 4 to	5 4	3 0 to	4 4	3 8 to	4 8	3 4 to	4 4	3 4 to	5 0
Lamb — —	4 8 to	5 4	0 to	0	0 to	0	0 to	0	0 to	0
Head of Cattle—Beasts about	2,500		2,500		2,700		3,000		1,500	
Sheep and Lambs	14,500		18,000		14,000		12,500		7,000	

Price of Leather.										
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Butts, 50lb. to 56lb. each	19½ to	20½	19½ to	20½	20 to	21	19½ to	21	20 to	21
Ditto, 60lb. to 65lb. each	22 to	23	22 to	23	22 to	24	22 to	23	22 to	23
Merchants Backs —	20 to	20½	20 to	20½	20 to	20½	20 to	—	20 to	—
Dressing Hides —	20½ to	21½	20½ to	20½	21 to	22	21 to	22	21 to	22
Fine Coach Hides —	21½ to	23	21½ to	23	22 to	24	22½ to	24	23 to	24
Crop Hides for cutting	20½ to	21½	20½ to	21½	21 to	22	21 to	22	21 to	22½
Flat Ordinary —	19½ to	20	19½ to	20	19½ to	20½	19 to	20	19½ to	20½
Calf Skins, 30 to 40lb. p. doz	28 to	32	28 to	32	28 to	32	28 to	32	28 to	32
Ditto, 50lb. to 70lb. do.	27 to	31	27 to	31	28 to	32	28 to	32	29 to	33
Ditto, 70lb. to 80lb. do.	26 to	28	26 to	28	27 to	28	27 to	29	27 to	29
Sm. Seals (Greenland)	42 to	45	42 to	45	42 to	45	42 to	45	42 to	45
Large do.	51 to	71	51 to	71	51 to	71 10s	51 to	71	51 to	71
Tanned Horse Hides	18s to	28s	18s to	28s	18s to	28s	18s to	28s	18s to	28s
Goat Skins per doz.	—s to	—s	—s to	—s	—s to	—s	—s to	—s	—s to	—s

Price of Tallow.										
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
St. James's Market —	4	10	4	10	4	11	4	10½	4	8½
Clare Market —	4	10	4	10	4	11	4	10½	4	8½
Whitechapel Market —	4	10	4	10½	4	10½	4	9½	4	8½
Per stone of 8lb. Average	4	10	4	10	4	10½	4	10	4	8
Town Tallow — —	82	0	83	0	83	0	82	0	80	0
Russia ditto (Candles) —	77	0	79	0	79	0	79	0	78	0
Russia ditto (Soap) —	71	0	73	0	76	0	74	0	73	0
Melting Stuff — —	65	0	65	0	65	0	65	0	65	0
Ditto rough — —	44	0	44	0	44	0	44	0	44	0
Graves — —	14	0	14	0	14	0	14	0	14	0
Good Dregs — —	12	0	12	0	12	0	12	0	12	0
Yellow Soap — —	84	0	84	0	84	0	84	0	84	0
Mottled ditto — —	92	0	92	0	92	0	92	0	92	0
Curd ditto — —	96	0	96	0	96	0	96	0	96	0
Candles, per dozen, —	12	6	12	6	12	6	12	6	12	6
Moulds — —	13	6	13	6	13	6	31	6	13	6

AVERAGE PRICES OF CORN, by the quarter of eight Winchester bushels; and of OATMEAL, per boll, of 140 pounds Avoirdupoise:

From the Returns received in the Week, ended DECEMBER 17, 1803.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Middlesex	56	11	34	4	26	0	26	11	39	10	46	3		
Surrey	56	10	34	0	25	5	26	6	39	6	42	9		
Hertford	50	11	35	6	22	3	24	1	37	6	38	6		
Bedford	52	11	33	7	20	9	22	4	31	8	40	0		
Huntingdon	47	11			19	10	19	10	29	7	33	7		
Northampton	53	0	32	0	21	4	21	8	32	6			57	3
Rutland	57	0			24	0	22	0	36	6			36	7
Leicester	55	2			23	1	22	8	37	6				
Nottingham	61	0	36	0	26	10	25	8	40	0	42	0		
Derby	59	0			29	8	23	6	42	2	44	0	23	4
Stafford	55	6			28	3	26	9	44	3			34	4
Salop	48	1	35	4	25	8	23	8	44	5	44	10	63	7
Hereford	47	4	32	0	25	7	24	8	43	8	42	4	59	3
Worcester	47	4	34	4	26	0	26	6	41	7	46	3		
Warwick	53	4			26	4	26	0	42	7	51	4	46	8
Wilts	50	4			23	8	22	2	41	8	39	0		
Berks	55	8			23	6	25	8	39	3	39	10		
Oxford	52	1			21	6	23	3	35	3	37	11		
Bucks	54	5			24	4	24	6	35	7	41	0		
Brecon	50	8	32	0	26	0	21	4			37	4	36	0
Montgomery	49	2			25	3	16	10			37	10	44	6
Radnor	46	10			25	9	21	10			37	4	67	10

Maritime Counties.

Essex	55	2	30	6	23	2	27	6	35	0	36	0		
Kent	59	5			27	4	29	7	38	10	44	0		
Suffex	54	10			29	6	29	4						
Suffolk	51	3	32	5	21	7	22	6	32	9	36	4	44	6
Cambridge	47	9			22	5	18	1	30	2				
Norfolk	50	10	30	1	21	3	21	1	32	9	35	7		
Lincoln	54	10	30	0	26	2	21	3	34	5	35	9		
York	51	9	36	9	24	0	22	3	38	8	69	4	41	7
Durham	52	8			25	5	23	8						
Northumberland	50	5	38	0	28	9	23	0	28	0	40	0	17	0
Cumberland	55	2	33	6	23	6	22	0						
Westmorland	56	2	33	6	27	10	22	8					22	10
Lancaster	58	3			27	8	26	7	44	4			22	1
Chester	53	1			29	3	24	6						
Flint					30	6								
Denbigh	57	6			30	10	20	10	51	3	44	10	40	8
Anglesea					29	0	18	0						
Carnarvon	57	4	36	0	22	6	19	6					42	1
Merioneth	59	4	48	0	26	0	20	0			44	0	36	6
Cardigan	54	6			30	6	16	3						
Pembroke	49	11			20	6	17	6						
Carmarthen	58	8			21	11	17	2						
Glamorgan	55	1			23	8	21	2						
Gloucester	50	8			26	6	23	0	41	5	40	0		
Somerfet	55	6			24	8	24	6	41	8				
Monmouth	52	8			25	2								
Devon	59	11			28	1	23	7						
Cornwall	57	5			30	2	23	6						
Dorset	52	1			24	11	25	1	44	0				
Hants	52	10			25	9	24	1	38	9				

A TABLE of the Prices of STOCKS in December, 1803.

	Bank Stock.	3 per Ct. Red.	3 per Ct. Conols.	4 per Ct. Conols.	5 per Ct. Navy.	5 per Ct. Loyalty.	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Ann.	Irish 5 pr. Cent.	Omnium.	India Stock.	Engliff Tickets.	Conols for Account
Nov. 28		53½	54½	69½	88½	88½	15½		51½	9		8½	168½	17	55
29	144	53½	54½	69½	88½	90	15 11-16		51½	1-10		7½	168	17	55½
Dec. 1	143½	53½	Shut.	69½	89	90½	15 13-16	3 1-16	52½	80		7		17	56
2	143½	53½	71½	71½	89½	92	16½	3 1-16	53½	9½		5½	172	17	56½
3	146	54	71½	71½	90	91½	16 1-16	3 1-16	53½	9½		5½	172½	17	57
5	145½	55	70½	70½	90½	91½	16	3 1-16	52½			5½		17	57½
6	147	54	70½	70½	90½	91½	15 15-16		53½			5½	163	17	58
7	146	54	70½	70½	91	91	15 7-16		53½			6	162½	17	58½
8	145½	54	70½	70½	90½	90½						6		17	59
9	145	54	70½	70½	90½	90½	15 1-16					6		17	59½
10	145	54	70½	70½	90½	90½	3 1-16		53			6		17	59½
12	145	54	70½	70½	90½	90½						6		17	59½
13	145	54	70½	70½	90½	90½	15 1-16					6		17	59½
14	144½	54	70½	70½	90½	90½						6		17	59½
15	144½	54	70½	70½	90½	90½	15 15-16	3 1-16	53	9½		6		17	59½
16	144	54	70	70	90½	91			52½	9 15-16		6		17	59½
17	144	54	70	70	90½	90½	15					6		17	59½
19	142	54	70	70	90½	90½	3 1-16					6		17	59½
20	145	54	69½	69½	90	90	3 1-16					6		17	59½
21	145	54	69½	69½	90	90	3½					6		17	59½
23	145	54	70	70	90	90	15 15-16	3½				6		17	59½
24	145	54	70	70	90	90	15 15-16	3½			8½	5½		17	59½
29	145½	54	70	70	90	90	15 15-16	3½	53½			5½		17	59½

T. BISH, STOCK-BROKER, Old State-Lottery Office, No. 4, Cornhill, London.

TO OUR CORRESPONDENTS.

WE are extremely sorry that the late period of the month to which the exhibition of prize cattle was postponed has prevented our artist from taking a drawing of the animal, sufficiently early to admit the plate to accompany this number. It is now under the hands of the engraver, and we hope will appear in our next publication, executed in a style that will meet with the approbation of our readers. The Hog is the subject we have chosen, the Ox having been given with our observations on the exhibition of last year.

We observe with concern that some communications designed for the present month, must be postponed until the ensuing, not being received at the office on or before the 18th, agreeably to request we made to our correspondents in the last number.

We thank our friend Lucas Medicus, in Warwick Lane, for his promised attention to the Veterinary article, although we are convinced that our correspondent Veterinarius will acquit himself in a way not only to give information to the ordinary reader, but to impart satisfaction to the medical fraternity.

Chorographus will observe that his postponed letter has been inserted, and we hope it will attract some attention from our connections in Shropshires, whose local situation will give them the best opportunity of enlarging the body of intelligence on this department of provincial agriculture.

P. Y. R. G. and Arbustivus, have been received.

Mercator Tarraconensis, on the mode of washing Spanish Wool in the establishments of Segovia, will be inserted by the first opportunity.

The communication from Castor is just received.

We have not had an opportunity of seeing Mr. Lester since the receipt of the letter from Agrico Norfolciensis, but the matter shall not be neglected.

ALPHABETICAL INDEX
TO THE
NINTH VOLUME
OF THE
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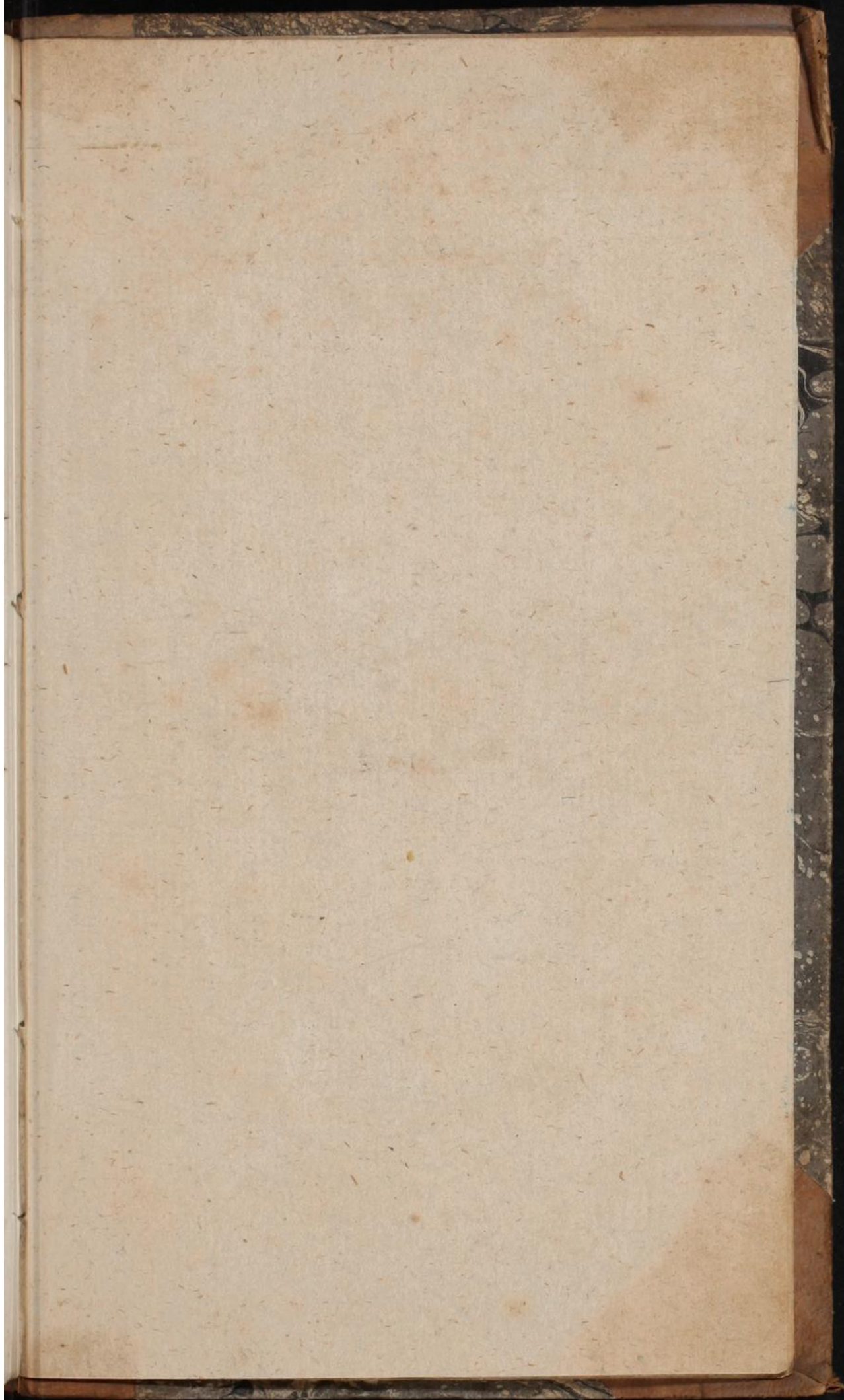
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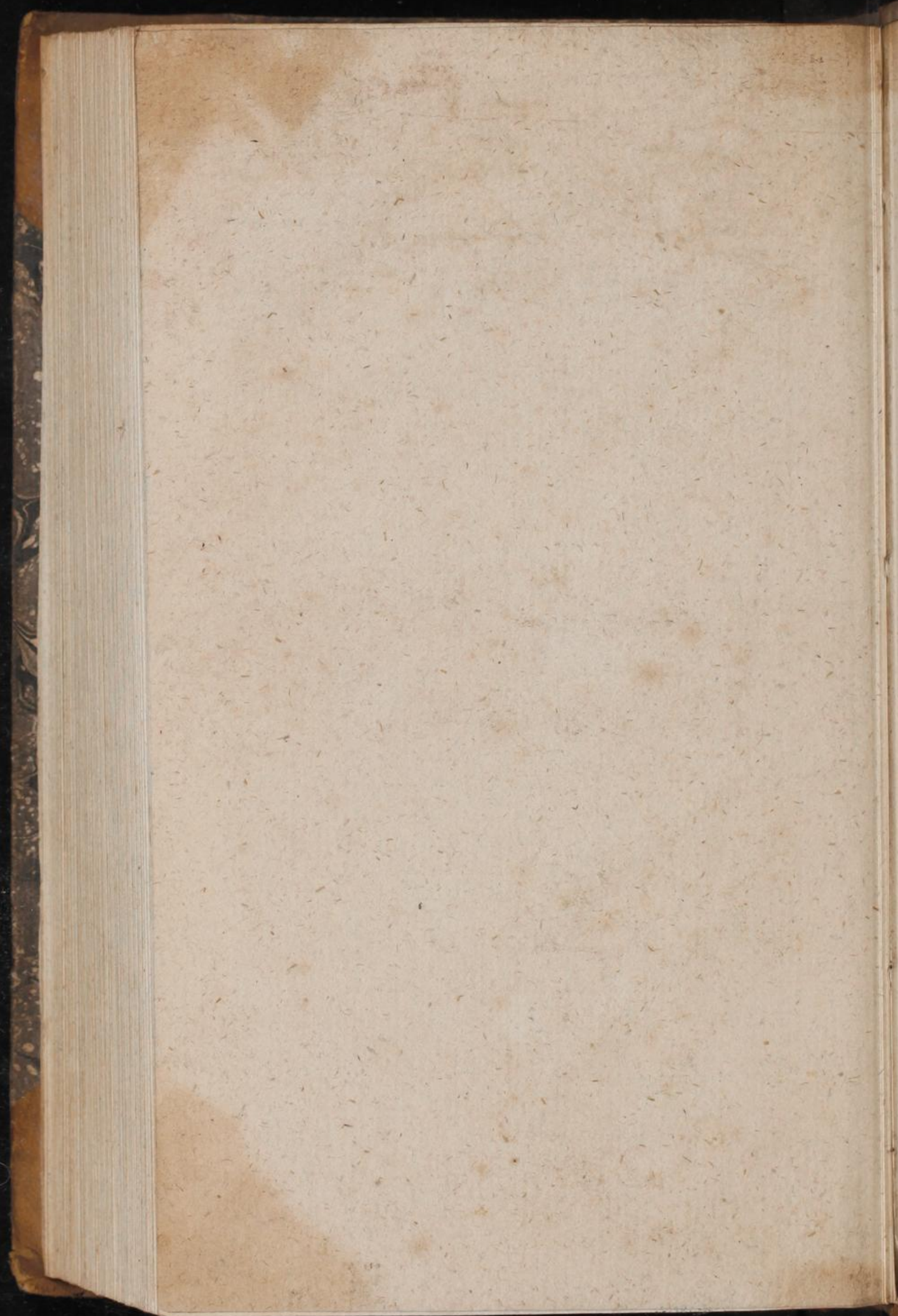
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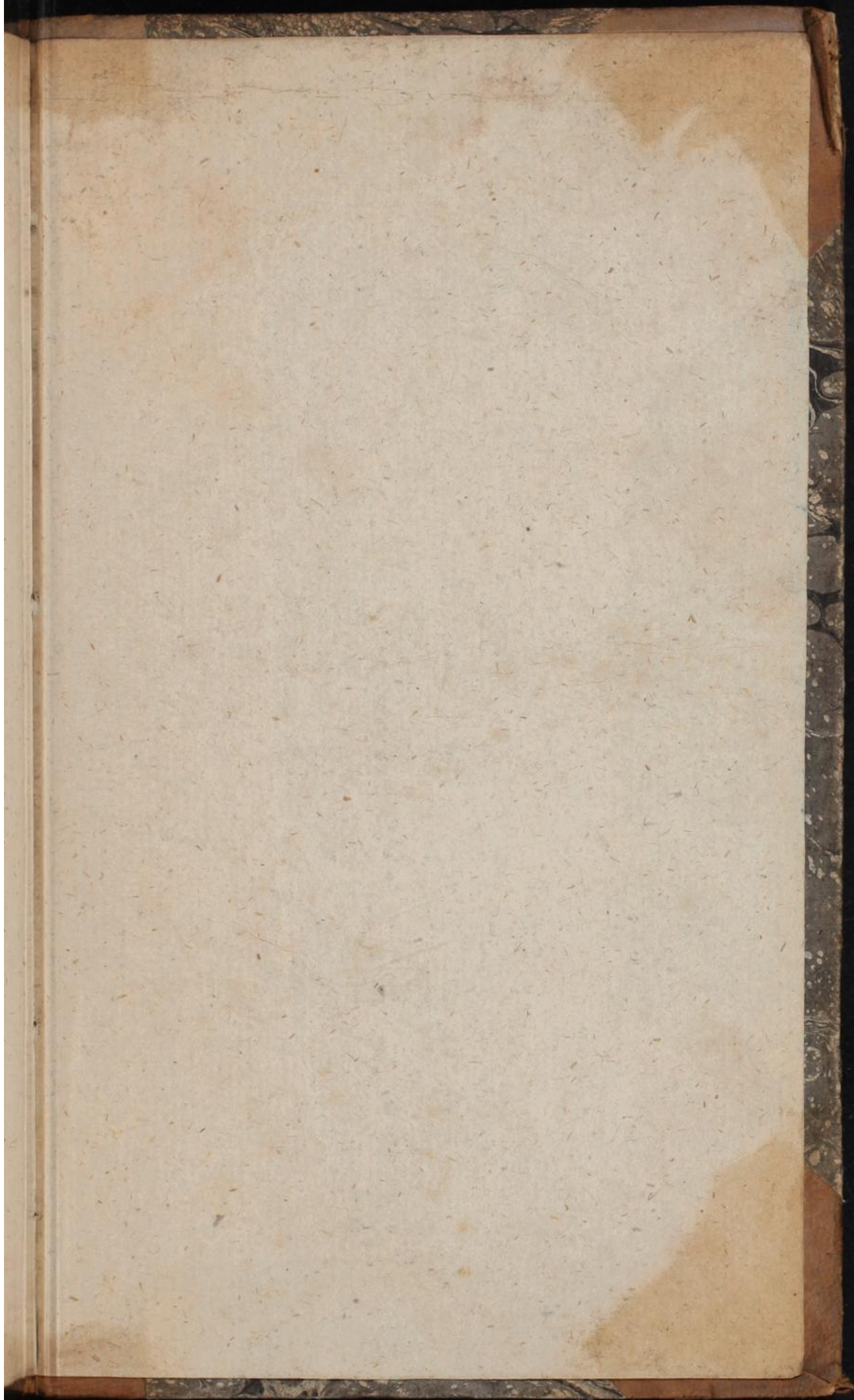
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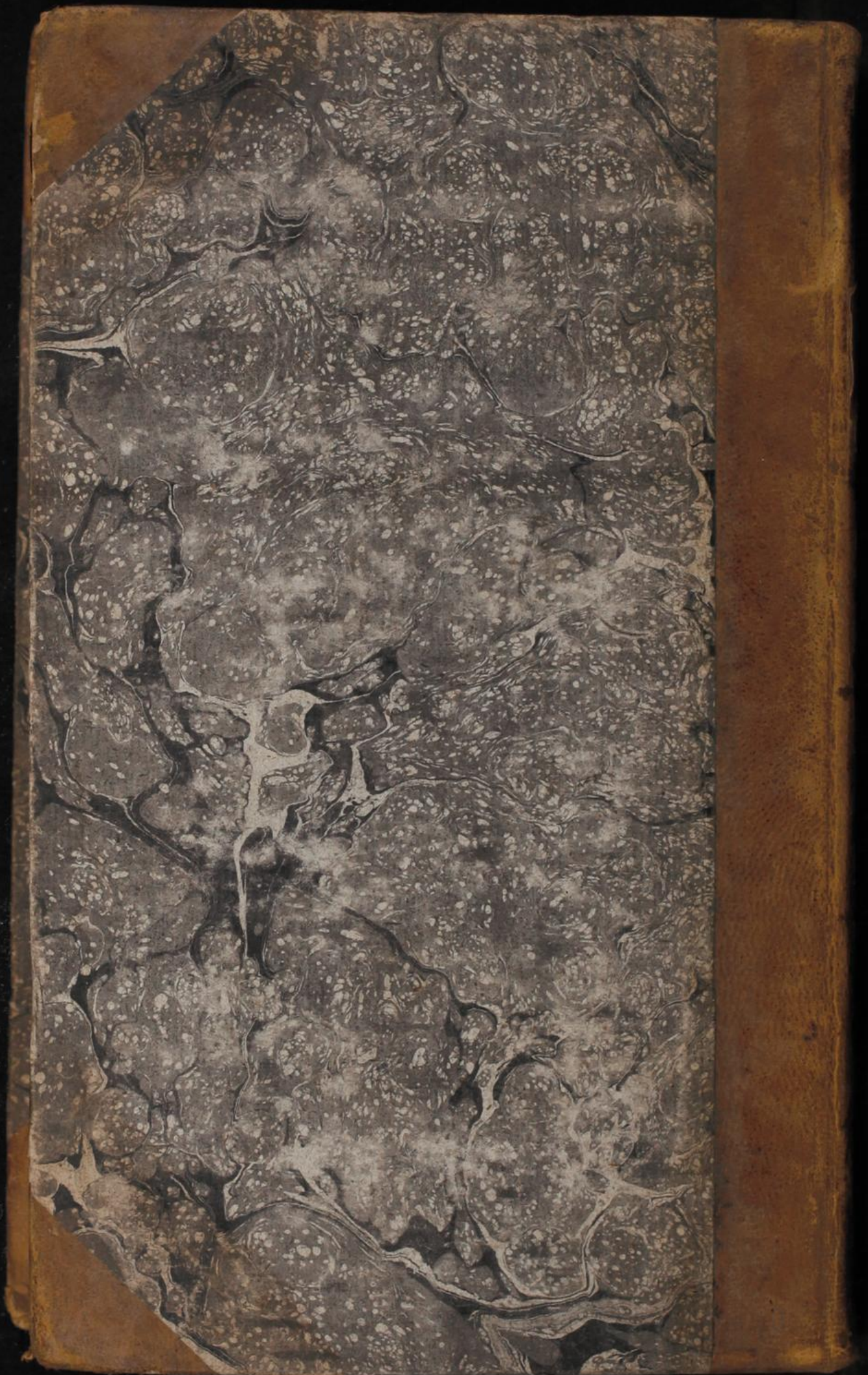
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