

THE
AGRICULTURAL MAGAZINE.

No. LI.]

OCTOBER, 1803.

[VOL. IX.

DESCRIPTION OF MR. COOKE'S PATENT HORSE-HOE, FOR
HOEING CROPS SOWN AT VARIOUS DISTANCES, BY THE
DRILL MACHINE.

WITH A PLATE ANNEXED.

IN our last Number we gave the description of a Patent Drill Machine, invented by the Rev. James Cooke, and we stated "this drill comprises two different engines, the one is exclusively for sowing the land, the other for hoeing it at the different periods, from the formation of the first shoot to the approach of the vegetable to a state of maturation."

The part of this machine applicable to horse-hoeing is the subject of the plate attached to the present number. The shafts, the axis, and wheels, the coulter-beam, with the handles, are the same as in the preceding plate, but six shares or horse-hoes are here added A A A A A A, in the places of the coulters, and the following parts are taken away, as being useless for the purpose to which it is now applicable, viz. the seed-box E E, the cylinders H H, the funnels I I, and the coulters K K, for which our readers may refer to our last Number.

C C is a guide projecting from the hoe-beam, which is useful in influencing the direction of the hoes, so as to avoid cutting up the rows of corn.

For horse-hoeing a crop of any kind of corn, drilled at nine inches apart, the horse must be conducted along the third row or drill, beginning to number the rows, from the left hand side of the six rows drilled at one operation of the machine. And the person who attends the hoes must keep the pin B directly over the third row of corn, and so long as he does this, it will be impossible for him to injure it in the least.

For horse-hoeing corn at twelve inches apart, the horse must be conducted along the second space, between the rows or drills, beginning to number the spaces from the left hand side of the five rows drilled at one operation of the machine. And the person who attends the hoes, must keep the pin B directly over the middle of the second space, described as above; the same rule will hold good for hoeing at different distances.

Where the spaces between the two adjoining outside drills shall happen to be irregular, as being too narrow at some places for the hoe to pass, it may be advisable to take out the share, which would otherwise hoe that place, and leave it to be hoed by hand.

Soils of different textures, will require to be hoed with shares of different sizes; nothing but experience can point out the size which is best adapted to any particular soil. In all light sandy soils, or loams, or any other soils sufficiently pulverised, shares from five to six inches broad, for nine inch drills, and eight inches broad, for twelve inch drills, will work safely and effectually. In strong clays intermixed with pebbles, the hoe shares must not be so broad; and it may not be impossible to find some such soils as will bid defiance to all flat hoeing whatever. If, nevertheless, the texture of the soil in the spaces of the rows of corn, is torn to pieces by long narrow plates of iron, resembling points or chissels, being introduced in the hoe share shanks A A A A A A, instead of the hoe plates, the advantages resulting from such a process will be very considerable.

The hoe plates or shares, may be set to enter the soil deeper or shallower, by lowering or raising the shanks A A A A A A, in the respective mortices in the beam, or by lowering or raising the hooks applied to the shank C C, on the axis of the wheels, by which the hoes are drawn.

Lands cannot be too level on the surface, for practical, effectual, and expeditious horse-hoeing: but where lands, or ridges, are formed so round, that all the hoe plates cannot be brought to work at equal depths in the soil at the same time, so many as cannot be brought into use, may be laid aside.

As this method of horse-hoeing is perfectly new, it is recommended to take the horse-hoe with the machine coulters fixed in the hoe-beam, instead of the hoe-shares, over several acres of drilled corn; by which means, the person who is to attend the horse-hoes, will, by seeking the coulters in the middle of the spaces, become familiarized to the method of influencing the direction of hoes, so as to avoid cutting up any of the rows of corn.

This horse-hoe may be applied to many useful purposes, besides hoeing crops of drilled corn, particularly for cutting up the rows of stubble as soon as the crop is carried, with such weeds as might escape the hoe; and for stirring fallows, &c. at the rate of ten acres a day, with one man and a boy, and two horses, particularly in the busy time of harvest, when it would be impossible to spare as many men and horses as would be required to stir the land with common ploughs, so as to answer the intended purpose. And by means of the same expeditious method of cutting up stubbles (in Kent, called *shimming* and *spudding*) immediately after the crop is carried, or rather before it is carried, as soon as it is cut and set up, in order to gain time for sowing grass seeds a second time, where they may have missed, or cole, or rape, or turnip for food of sheep or cattle in winter or spring, extraordinary advantages may be derived.

One great benefit of hoeing is, that it keeps plants moist in dry weather, the advantage of which to their growth is easily seen. This good office it performs on a double account.— First, as they are better nourished by hoeing, they require less moisture, and consequently carry off less; for those plants which receive the greatest increase, having most terrestrial nourishment, carry off the least water, in proportion to their augment, as is proved by Woodward's experiments. Thus barley or oats being sown on a piece of ground well divided by tillage and dung, will come up and grow well without rain; when the same grains, sown on another part of the same land, not thus dunged, or tilled, will scarcely come up at all without rain: or if they do, will wait wholly for the rain, for their growth and increase.

The horse-hoe procures moisture for the roots of plants, from the dews which fall most in dry weather; and these dews seem to be the most enriching of all moisture, as it contains in it a fine black earth, which will subside from it in standing, and which seems fine enough, to be the proper pabulum or food of plants.

A demonstration that the tilled earth receives an advantage from these dews, which the untilled does not, is this: Dig a hole in any piece of land, of such a depth as the plough usually goes to, fill this with powdered earth, and after a day or two examine the place, and the bottom part of this earth, and the bottom of the hole, will be found moist, while all the rest of the ground at the same depth, is dry. Or if a field be tilled in lands, and one land be made fine by frequent deep ploughings, while another is left rough by insufficient tillage, and the whole field be then ploughed across in dry weather, which has continued long, every fine land will be turned up moist, and every rough land as dry as powder from top to bottom.

Although hard ground when thoroughly soaked with rain, will continue wet longer than fine tilled land adjoining to it, yet this water serves rather to chill, than to nourish the plants standing in it, and to keep out the other benefits of the atmosphere; it leaves the ground much harder than before, when it is finally exhaled out of it: and when at length the earth is then hardened, it can receive no benefit from any thing less than a deluge of rain, which seldom falls till the season of vegetation is over.

As fine hoed ground is not so long soaked with rain, so the dews never suffer it to become perfectly dry, this appears from the flourishing state of plants in hoed ground, while others near them, but in ground not hoed, are starved for want of nourishment. The common opinion is against this, but observation proves the error of the common opinion; the vulgar are guided by this, however, and will not hoe their ground in dry weather, for fear of letting in the draught, as they call it;

whereas hoeing this is the only method of keeping away the draught, and without either this or watering, they must perish in these seasons.

Practical Remarks on the Employment of Mr. Cooke's Patent Drill Machine, over an Extent of about 250 Acres.

HAVING in the first articles of the present and preceding number attempted to give a minute and clear description of the sowing machine and corresponding horse-hoe of the most ingenious artizan in agricultural machinery, it may perhaps be of some use both to him and to the public if we make some observations on its practical application, over an extent of about two hundred and fifty acres, in our own farms.

The farms to which we allude, were situated in a part of Essex, where the employment of this machinery was wholly unknown, and of course we had to encounter all those difficulties from the ignorance of labourers, which in Norfolk and Suffolk, and the greater part of Kent, would not have existed. But we will venture to affirm that the use of these machines, under all such disadvantages, afforded us double the produce we could have reasonably expected without their assistance.

It is usual in the wet grounds of Essex, to throw up the lands extremely high, so that the moisture may pour down into the intervening furrows, and thus the part assigned to the growth of the vegetable is not injured by the superabundant aqueous deposit. The consequence of throwing these lands so high, is, that the wheels of the sowing machine descending on both sides into the furrows, the coulter we have described which press on the middle of the lands are thrown up so, that the beam to which they are attached interferes with the progress of the machine, and it is rendered useless.

To remedy this inconvenience, it is requisite to have two sets of wheels; the diameters of the one being six or eight inches longer than the diameters of the other, and by this means the elevation in the middle of the lands will be found to be no material inconvenience, the farmer will retain the advantage of the roundness of his lands, and enjoy all the benefits of this curious contrivance.

The machine is intended either to sow a narrow land at once, or to sow a broad land by going once down and once up the same land. It will immediately occur to the experienced farmer, that in the latter case the wheel which goes on the middle of the land will be considerably higher than that which goes in the furrow. The consequence of this is, that the canvas or flexible part of the funnels II (see the plate of the last number) were thrown so much out of the perpendicular, that the seed in consequence lodged in the folds of the canvas.

instead of being regularly delivered in the proportions required. This inconvenience will be easily remedied by the expedient to which we have just alluded. One of the larger and one of the smaller wheels may be employed at the same time on the machine, the latter being applied to that part of the axis which proceeds about the middle of the land, and the larger one to proceed in the furrow, and thus by going and returning on the same land, the larger one will be always in the furrow, and answer the purpose designed.

By the precautions we have now explained, the flatness of the lands Mr. Cooke supposed necessary for the use of his machine will be avoided; the farmer in wet countries, where all his seed would perish from the flatness of the superficies, will be able to adhere to the ancient method which long and painful experience has discovered to be necessary in the process of vegetation.

It is said that the machine cannot be employed when the land is so wet that the mould adheres to the feet. In some instances, in order to recover a late season in the uncertain climate to which we are exposed in this country, it is necessary to employ the machine at unfavourable times, and in such cases the mould will attach itself to the coulter, the seed will be thrown off from its right direction, and the lower aperture of the funnels will be filled up. In this difficulty a boy should attend with the conductor of the machine, he should be provided with a small spud, and as soon as one or more of the coulters become clogged or incumbered, he should disengage the earth from it, and be particularly cautious to prevent its ascending to the funnels. It will likewise be found convenient under these circumstances when the machine stops at the end of every land, carefully to clear the coulters of the adhesive mould.

In going over land in too wet a state, we have sometimes found it necessary to employ two boys in this sort of duty; the one to be engaged as we have explained, the other to be employed with the same instrument on the wheels. It is found when the rim of the wheels begins to be clogged, that the earth accumulates upon them like a snow ball, and the machine can no longer proceed. If as soon as the earth connects itself to the wheel, the boy apply his spud to it and remove it, this obstruction is avoided, and likewise the inconvenience of the mould falling into the funnels adjacent to the wheels, which would in course prevent their delivering the seed.

It is observed in the account we have given, that "if weeds accumulate upon the coulters, they must be displaced by a paddle; if the land be dry, weeds will not be very troublesome; but if wet and clammy, and full of twitch, it will be troublesome, and more or less prevent the seed being distributed regularly in the drills." We agree with Mr. Cooke that some-

times such lands had better be made a fallow of in order to clear them from weeds than drilled with any corn whatever, and that this would be productive of great profit to the cultivator, and more credit to the drill system at large. There are, however, gradations in the condition of land in this respect; and ground that is very fit for the use of the drill, will often be found so far incumbered with weeds, as to make it useful to employ an attendant boy with a paddle or spud, who by an active exertion will remove the whole or the greater part of the inconvenience from this cause, and thus the season and the rent will not be lost to the industrious farmer.

It is said in the account we have given, that "when a piece of land has been drilled, it should be harrowed once in a place with common light harrows." It is not always convenient to the farmer to employ his team in this way, and frequently a shower follows so close upon the operations of the drill, that the harrows are rendered useless, and the seed is exposed to the voracity of the feathered tribe, until the land is in a fit state to receive the harrows. To avoid this, we contrived a small harrow, in breadth about twelve inches, and nearly the length of the coulter beam. This harrow was attached to that beam by small cords and rings, and from its narrowness was found to be no obstruction to the attendant at the handles of the machine. When the lands were flat, and in fine tilth, the coulters were found sufficient to bury the seed, but when they were not in that condition this harrow was frequently found completely to answer the purpose, and for lands that are considerably higher in the middle it may be made with a curve so as to correspond, or be formed parallel with the surface of the soil. We, however, recommend in favourable weather, and where animal labour is no material object, that the ground should be harrowed afterwards once in a place, particularly because it will facilitate the use of the horse-hoe, and we have before said if the harrows are taken in the direction the drills are made, there will be no danger of displacing the seed.

What we have now said applies particularly to the employment of the sowing machine, what we have to remark on the peculiarities of the horse-hoe, from our own practical experience, we shall reserve for the next number. E.

ON THE MEANS OF ESTIMATING THE VALUE OF LAND
BY DISTILLATION.

To the Editor of the Agricultural Magazine.

SIR,

AMONG the numerous experiments of Mr. Young, there is one of a very singular, and even of a sort of empirical character. He says he found the equal weights of different soil being dried and reduced to powder, afforded quantities of

air by distillation, wonderfully corresponding with the ratios of their values.

He discovered an ounce of dry soil of the value of 5s. an acre, produced ten ounce measures of fixed and inflammable airs mixed together. Land of a value above 5s. and under 12s. produced twenty-eight ounces. Above 12s. and under 20s. forty-two ounces. Above 20s. sixty-six ounces.

I have no doubt of Mr. Young's faithful relation of these eccentric experiments, but admitting their accuracy, I shall be glad to see that he or any other gentleman, through the medium of your Magazine, will explain the rationale of this curious test of the comparative value of land.

By some observations I have seen in the works of an ingenious chemist, I have been led to suppose that these ærial extracts proceeded from the decomposition of water from the coaly matter in the soil, but I think it will very much gratify the wishes of your readers, if some of your intelligent correspondents would take the trouble to multiply facts and experiments on this subject, to establish some general theory which might be extensively applied to the most important enquiries in agriculture.

I am, Sir, &c.

Doncaster, Oct. 3, 1803.

S. R.

CURIOUS IMPROVEMENT ON THE FLOAT-BOARDS OF THE WATER WHEEL, APPLICABLE TO ANY PURPOSE IN WHICH THE WATER MILL MAY BE EMPLOYED.

To the Editor of the Agricultural Magazine.

SIR,

I Presume your work is designed particularly to detail all useful discoveries connected with the management of rural affairs. While you reject what constitutes the amusement of the drawing-room, and what agitates the fever of the public opinion in populous cities, you are disposed to divulge and to proclaim those inventions of the ingenious artist, which can lessen the cares and diminish the labours of the useful and respectable body of British peasantry.

Many of your late papers have been devoted to the consideration of the sort of preference to be given in animal labour. I have a great respect for all those gentlemen who are concerned in this curious controversy between *Equus* and *Taurus*, but as I neither wish to goad the one, or to be goaded by the other, the attention of my mind has been chiefly directed not to the selection of animals for labour, but to the exclusion of all animal labour by the application of the mysteries of mechanics to the ordinary duties and business of life.

One of the most valuable discoveries that was ever made for the application of inanimate force is the construction of the Water-Mill. In this country, this useful machine is applied

in a very limited way, but those of your readers who have pursued their journey, or rather voyage, along the dykes of Batavia, will have seen the impulse of water employed in a thousand forms to avoid the employment of animals. *Errorem in consilium vertere*, is a familiar proverb, and the necessity to which the Hollanders have been exposed of avoiding the increase of animals on the narrow tract of country to which they are confined, has led them to the most ingenious contrivances in practical mechanics.

The objection to our common water-wheel is, that it does not receive the stream on above one third of its circumference, that it meets with a considerable opposition from the surface in the plunge, and that it is greatly counteracted in rising, from the weight of water its construction occasions it to raise.— Fortunately, Mr. Norton of this city, has invented an ingenious mode of avoiding these ill consequences of the common construction of the machine. He applies a screw, either horizontally, vertically, or obliquely, to the impulse of the water, and in such a way, that the screw may receive a motion from the water round its own axis; and being applied to, and connected with, any of the well known machinery used in mill work, shall produce and communicate to the said machinery, such motion and effects as may produce the general purposes of a water-mill. He makes the screw of wood, iron, copper, or any other material the circumstance of size, place, &c. may require, and either with single or double threads, and with one, two, or more threads, and deeper and less deep in the thread, as the circumstances may require.

It will be seen by this account that the wheel is calculated to meet the stream near the surface, and that the screw taking the bottom of the stream, which is heavier and stronger, and working under the vessel that carries the mill work, is not likely to be damaged.

From the screw of Archimedes to the screw of Mr. Norton, perhaps there has been no more ingenious contrivance for the construction of a water-mill of this kind. Mr. Parent of the Academy of Sciences, had in view the ordinary ladle boards, or float boards, when he “determined the greatest effect of an undershot wheel to be when its velocity is equal to the third part of the velocity of the water that drives it.”

It may be interesting to some of your readers, if they will refer to the account of water-wheels, in Desagulier’s *Experim. Phil.* vol. II. p. 422, et infra. And also to a variety of experiments and observations, relating to under-shot and over-shot wheels, by Mr. Smeaton, in *Phil. Trans.* vol. II. p. 100.— These are already before the public, and would therefore be improperly introduced on the instructive pages of your miscellany.

I am, Sir, &c.

London, 30, Sept. 1803.

O. N.

A COMPARATIVE STATEMENT OF THE EXPENCE, &c. OF
OXEN AND HORSES FOR DRAUGHT.

To the Editor of the Agricultural Magazine.

SIR,

Oct. 1, 1803.

IN your Magazine for August last, (page 77) much is asserted in favour of the ox, as preferable to the horse in farm labour, and particularly, that a powerful six years old ox may be purchased at a much cheaper price than a horse of the same description; that after the ox has been worked for five or six years, and supported at two thirds of the expence of the horse, he will obtain more than his first cost in the public market; that horses, when they become unfit for work, are a nuisance to the animal world, and that obtaining the highest balance in the comparison of expence and produce, is the criterion of agricultural talents, &c. This subject is of vast consequence to the occupiers and proprietors of the soil, and the community at large; and having already (in your number for the month above mentioned) advanced opinions very different from those just stated, I now beg leave to offer some remarks and calculations in their support. In this district, and I believe in most other parts of the kingdom, those who were engaged in stocking farms last spring, found that good six year old oxen, brought almost as high a price as four year old horses, whose *mettle and strength* rendered them fit for draught. I am not inclined to dispute that when six or eight oxen are used for one team, they will *generally*, after being worked a few years, (but five or six years is too long a time) bring more than prime cost; but that when two to four oxen only are employed for one team, and laboured against a pair of good horses, five to ten hours per day for 313 days in the year, they can be kept in proper condition for two thirds of the expence of the horse, I positively deny. It is believed by some, that ruminant animals, oxen for instance, consume much less food than horses, but that this theory will not stand the test of experience may be easily proved in most parts of the country. To overthrow it, however, I shall only adduce what is stated in the Northumberland Survey, the accuracy of which statement (as I am well acquainted with the gentlemen by whom the experiments were conducted, I can fully depend upon. By these experiments it appears, in the words of Messrs. Bailey and Culley—two deservedly distinguished agriculturists—“That three working horses, about fifteen hands and a half high, eat, in fourteen days, ninety-six stones of hay; which is, for each horse, at the rate of sixteen stones per week, with an allowance of oats, twelve gallons a week. Mr. T——’s eighteen horses in twelve days eat 430 stones of hay, which is fourteen stones per week each horse, allowance

of oats sixteen gallons per week; Mr.—A——'s horses eat per week, thirteen stones of hay, two bushels of potatoes, and sixteen gallons of oats, each, Mr. J——'s five year old working oxen, with a full allowance of hay, had, each ox, six quarts of oats per day. In fifteen days four of them eat 164 stones, 7lb. of hay, (which is after the rate, for each ox, of $19\frac{1}{4}$ stones per week) and of oats $10\frac{1}{2}$ gallons per week, three days after the same oxen were put to hay only, and in seven days eat 79 stone 10lb. or 20 stones each ox per week, which is only $\frac{1}{2}$ of a stone more than when they got $10\frac{1}{2}$ gallons of oats in the same time.* This is a singular circumstance, and deserving of farther investigation. An unworked ox three and a half years old was put to good old meadow hay the 29th of November, and eat forty-nine stones in twenty-one days, or per week, 16 stones 5lb. An idle horse (fifteen and a half hands high) eat of the same hay, twenty stones in ten days, or per week, fourteen stones; and had no corn." The latter part, namely, *that obtaining the highest balance in the comparison of expence, and produce, is the criterion of agricultural talents*, I admit to be just. Let us endeavour, then, to discover on which side this balance lies, whether on that of the ox or the horse?

In almost every district in which oxen are employed in the cultivation of the soil, the general practice is to yoke them when three years, and to work them till they are six years old; employing for the first year, when they are weak and unaccustomed to the draught, eight for each plough, and six, for the same work, in the two succeeding years. It is with this description of teams, therefore, that we should make our comparisons. I shall, not however, *entirely* overlook those for which fewer oxen are supported. In the first place it seems proper to endeavour to ascertain the

Expence of a labouring ox for one year.

	<i>£.</i>	<i>s.</i>	<i>d.</i>
Summering.—Pasture grass, with an allowance of tares, (two acres of the former, and about a quarter of an acre of the latter)		5	0
Wintering.—Straw	1	10	0
Good turnips about half an acre	2	15	0
	4	5	0

Most of the land in this kingdom being unfit for the turnip husbandry, work

* It is reasonable to presume that in the course of a considerable space of time, they would perform most work, and continue in the best condition, with the allowance of corn.

	£.	s.	d.
oxen are, in many districts, supported with hay and straw, (mostly with the former) and even where the straw is good, thirteen stones of hay, per week,* will be required to continue each ox in proper condition, which for thirty weeks, at five pence per stone, will amount to	8	2	6
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		
	12	7	6
One half of this is the average expence	6	3	9
Interest on the price of the ox at five per cent per annum	1	1	0
Harness, Shoeing, &c.	1	2	0
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		
	13	6	9
Deduct the increased value of an ox for one year	2	0	0
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		
Annual expence of an ox— <i>without corn</i>	11	6	9
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		
Expence of a labouring horse.			
Summering.—Pasture, grass, upwards of two acres	5	0	0
Wintering.—Straw	0	15	0
Hay fourteen weeks, fifteen stone per week, at five pence per stone	4	7	6
Oats, (partly small dressed out if those sent to market) 72 bushels at 1s. 11d. per bushel	6	18	0
Harness, shoeing, &c.	1	10	0
Annuity to pay off 26l: (the purchase price of a four year old horse) in fourteen years †	2	12	6½
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		
Expence of a working horse for one year	21	3	0½
	<hr style="width: 50%; margin-left: auto; margin-right: 0;"/>		

* This cannot, reasonably, be deemed too great an allowance, when we consider that the above experiments have proved that working oxen, supported on hay and a considerable quantity of corn, consumed weekly, nineteen stones and a quarter per ox.

† In several parts of the country good draught horses, four years old, may be purchased for about twenty-one to twenty-three pounds. I have, however, taken twenty-six pound as an average, reckoned on a horse working fourteen years, and allowed compound interest at five per cent per annum. Those who deem twenty-eight pounds necessary for the purchase of a good horse, to continue to work well for fourteen years, will of course, increase the annuity to 2l. 16s. 3¼d.

The expence for the ploughman (holder) being the same for an ox or a horse plough, it is unnecessary to include it in the estimates. Adverting, however, to the nature and situation of land in general, and to general practice, a driver for an ox plough, seems necessary. This will, perhaps, be disputed, but I presume that agriculturists in general, will concur in the opinion that, in order to plough nearly as much with oxen as with two good horses, it is necessary to yoke three or four of the former *at one time*, it seems fair, therefore, to add the expence of a driver for the ox ploughs; the account will then stand thus:

	£.	s.	d.
Expence of eight oxen for one plough	90	14	0
Wages, victuals, &c. for a driver	16	10	0
<hr/>			
Annual expence of a plough for which eight oxen are supported	107	4	0
<hr/>			
Expence of six oxen for one plough	68	0	6
Wages, victuals, &c. for a driver	16	10	0
<hr/>			
Annual expence of a plough for which six oxen are supported	84	10	6
<hr/>			
Therefore, the expence of an ox plough, being, the first year	107	4	0
And the second and third years	169	1	0
<hr/>			
That of three years will be	276	5	0
<hr/>			
And the average for one year	92	1	8
The expence of a two horse plough being, annu- ally*	42	6	0½
<hr/>			
The balance in favour of horses will be	49	14	7½
<hr/>			
If no three year-old oxen are employed, the account will stand thus :			
Annual expence of a six ox plough	84	10	6
Ditto, of a two horse ditto	42	6	0½
<hr/>			
Balance in favour of horses†	42	3	5½

But these calculations do not show the *total* loss sustained by the agriculturist from giving the preference to oxen; for

* A driver being unnecessary when proper reins are furnished for the holder.

† If we suppose three horses not more than a sufficient power, in some particular situations, for a few weeks, or even months, in the year, it is evident that the balance will still be greatly against oxen. I have, however, frequently seen two horses, driven by the holder with cords, plough more strong or hilly ground, in a given time, than four oxen, *yoked at one time*, six being allowed for one plough.

these animals, of a good kind, would, in grazing, increase in value to a greater amount than the value of their labour, calculating on the common prices per acre for ploughing, &c. and here I must again notice the popular argument which is stated in your August Number, namely: "oxen, after they have fed the hungry, will themselves become the first of human food. Horses, after they have eat the food of the fatherless, become a nuisance to the animal world; or buried in a corner,* lie a total loss to agriculture and to the community." It is by such arguments as these, and not by proper investigation, that the popular cry, during the late scarcity, was raised against the employment of horses in agriculture, but this method of cultivating the soil will not operate so as to render the quantity of beef in our markets less than it would be were horses superseded by oxen, for it cannot be denied that that system which offers the greatest encouragement to the breeders of cattle is the most likely to ensure a large supply of these animals, and the grazer having more profit than the labourer, of oxen, it follows that grazing is the greatest incitement to the breeder to increase the number of his cattle. But that the universal employment of two horse, in preference to six ox, teams, would greatly increase the quantity of beef in our markets, I shall endeavour to prove in another way.

It is easily deducible from the above estimates, that to maintain a working ox, requires the produce of about four, and to support a working horse, that of about five, acres of land; consequently a six ox team will require about twenty-four, and a two horse team about ten, acres of land: so that the community lose the produce of fourteen acres of land yearly by every six ox team in the kingdom. Suppose one half of this land to be under grass, and the remainder in tillage, viz.

7 acres of grass.
 2 $\frac{1}{2}$ ditto of oats.
 2 $\frac{1}{2}$ ditto of turnips and fallow.
 2 $\frac{1}{2}$ ditto of wheat.

The produce on a moderate computation would be yearly

90 stones of beef.

13 quarters of oats.

And 7 ditto of wheat.

* I am apprehensive that dead horses are not generally buried any where, but really lie a "nuisance to the animal world." They certainly ought, however, as well as other animals, and oxen which die of disease, lameness, &c. &c. to be buried in ten or twelve loads of the richest earth that can be found. Some time after putrefaction, the whole mass should be intimately mixed and applied as manure. Experience having proved that such manure is highly fertilizing. It is not true, therefore, that when an old work ox will bring prime cost, or more as human food, an old horse is fit for dogs only. Besides the force of this popular argument is destroyed, when the above estimates are attended to. For by the annuity added in estimating the annual expence of a work horse, that animal actually costs his owner nothing at the expiration of fourteen years.

I understand that some eminent calculators have estimated the number of ploughs employed in the kingdom of Great Britain and Ireland at 210,000, now if we calculate on this number the account will stand thus :

<i>st.</i>	<i>cwt.</i>		<i>£.</i>
210,000 x 90 =	2,362,500	of beef, which at 3l. per cwt.	
		amounts to	7,087,500
210,000 x 13 =	2,730,000	quarters of oats, which at 16s.	
		per quarter amount to	2,184,000
210,000 x 7 =	1,470,000	quarters of wheat, which at	
		45s. per quarter, amount to	3,307,500

The amount of provisions which would be annually lost to the community were ox universally preferred to horse teams	12,579,000
---	------------

And the loss sustained by the occupiers of land would be precisely that profit which they receive on its produce. Some writers calculate this profit at one third, and others at one quarter of the produce. It is obvious, however, that estimates on this head, cannot be depended on, and that the profit will vary with the circumstances under which the cultivators of the soil pursue their important art. But it is, in some parts of the country, and ought to be in all parts of it, very *considerable*. But, say the advocates for oxen, it is almost admitted that it is necessary *occasionally*, to employ three horses in a plough,* and we can, in several situations, plough five or six acres per week, with only four oxen, I shall therefore estimate the expence of a four ox plough.

But here I must remark that in estimating the annual expences of a working ox, I have, thus far, not only *not* included the expence of corn, but deducted 2l. for his increase in value; but that when only four oxen are employed for one plough, they will at all increase in value, or maintain a competition against two good horses for a considerable length of time, even with a liberal allowance of corn and hay, I cannot admit; referring to the experiments already mentioned for the necessary quantity of corn.

The annual expence of a working ox *when only four oxen are employed for one plough*, will be (including corn, and making no allowance for an increase in value) 17 11 2½

* These gentlemen, however, should recollect that in several parts of the country eight oxen are occasionally employed for a plough, and that this would, in the estimates have stood against the admission that three horses are sometimes necessary for one plough. On land already improved, however, this number of horses is seldom, if ever, necessary, *where proper management is pursued*; but, in some parts, it is customary, instead of ploughing the land intended for fallow between Martinmas and April, to defer that operation till May, June, and even July, when it is comparatively as hard as stones.

	£.	s.	d.
Brought forward	17	11	2½
And that of a four ox plough, including the driver	86	14	10
Therefore the annual expence of a two horse plough being	42	6	0½
The balance in favor of horses will be	44	8	9½

Allowing then, *merely for the sake of argument*, that four oxen will, for a considerable length of time, plough as much land as two good horses, and that with a liberal allowance of corn and hay, the former can support the competition, without being impaired in value, it is clear that the work cannot be done at nearly so cheap a rate by the oxen as the horses.

It has, I understand, been contended by some advocates for oxen, that with four of the *best* of these animals, as much land may be ploughed within six to twelve months, as with three *middling* horses, and that the work may be as well executed, and at a cheaper rate, by the former than the latter. It is scarcely necessary to remark, however, that even if the oxen could perform the same quantity of work (which I will not admit) they could not perform it at so cheap a rate as the horses, by 6l. 15s. 9½d. per annum. Others assert that there is no occasion whatever to employ a driver for an ox plough, and that the most advantageous mode is to yoke *two at a time*, and furnish the ploughman with reins to drive them. Suppose we admit this *for argument's sake*, it is obvious that the balance will still be greatly in favour of horses.*

Now Sir, as it is universally admitted that the productive powers of the land are not, in the smallest degree, impaired, *merely* by employing horses in preference to oxen in its cultivation, "the balance in the comparison of expence and pro-

* I have just been informed that some very warm advocates for the superiority of oxen, who have been at much pain in selecting a few of these animals with particular qualifications, contend that two of them, driven by the ploughman, can perform nearly as much work as two good horses, and for a considerable length of time; that they can, however, really maintain such a competition, for a few months, even in a remarkably favourable situation, without being much reduced in value, or rather, without being reduced to skeletons, I do not believe. Supposing, however, that they were thus matched for six months (and for that time I cannot conceive that any quantity or kind of food *whatever*, would enable them to perform nearly as much work as two horses) surely their owners would not be so unmerciful to their *favorite animals* as to refuse them as much nourishing and strengthening food as labouring horses, under the best support, are allowed; and reckoning the quantity of corn equal, even two oxen to a plough, would be more expensive than two horses, for it has been demonstrated, by the experiments already quoted, that working oxen consumed more hay weekly, by near six stones each, than working horses.

duce" is greatly in favour of the former animals. It is fair, therefore, to conclude, that those who prefer horses to oxen in farm labour, display (as far as a judicious choice of animals for draught will go) the greatest "agricultural talents."

I am, Sir,

Yours, &c.

AGRICOLA NORTHUMBRIENSIS.

P. S. The method of yoking oxen in France, which is related in the Rev. Mr. Hughes's Tour in that country, and noticed in your Magazine, in terms of approbation, has not, I presume, been practised in any part of this kingdom; and therefore my opinion, *that the French mode of yoking will not answer on British ground*, may perhaps be imputed to prejudice and the force of habit, notwithstanding this, however, I must beg leave to say, that I think our own mode, either with the collar, or the yoke, is much superior to the practice of the French, and that if they succeed in destroying the independence of this country, (an idea I have too high an opinion of my countrymen, to entertain) they will but ill support the character they have established in Holland, Italy and Switzerland, if they do not display greater judgment in putting the yoke upon *us*, than in yoking their oxen. The French are more distinguished for destroying the harvests of their weak and inoffensive neighbours, than for good ploughing on their own lands, and if they enjoy tolerable plenty, it is owing, in a much greater degree, to the natural fertility of their soil, and the excellence of their climate, than to their abilities in the management of rural affairs. Most of our British farmers would behold, with the greatest contempt, the puny efforts of the cultivators of France. Hear what one of our Historians says, relative to French ploughing. "Here the farmer, meagre, dispirited and depressed, exhibits a spectacle of indigence hardly credible, ploughing the ground with a lean cow, ass, and a goat yoked together." If this power be sufficient for moving the ploughs of the French, their furrows, compared with ours, must be mere *scratching*. My surprize, therefore, is lessened at their fastening the yoke to the horns of their cattle.

I cannot conclude without expressing an ardent wish that the landed proprietors and law givers of Great Britain and Ireland, would, instead of imputing the sole *scarcity* to the employment of horses in preference to oxen in farm labour, attend to the effects of two adverse seasons in succession, and to other real causes; to the co-operating circumstances I have mentioned in former letters to you, namely restrictive covenants, tithes, and the want of long leases, a general inclosure bill, and proper laws for the regulation of the corn trade; and

that they would, *without delay*, so far adapt the latter to the present rents of land, prices of labour, and rate of taxation, as to maintain more steady and adequate prices for grain than those which I apprehend the British agriculturists will, within a few years, if not within the present year, be under the necessity of accepting. Low prices are not the proper means of ensuring improvements and plenty. In this county they have been, and will always be, attended with incalculable evils — They not only lessen aration and put a stop to improvements, but destroy the industry and morality of the lower orders of the people, whose wages are now far above that proportion which they should always bear to the prices of corn. When four days' wages will purchase seven days' consumption of a family, the consequence is, that labourers, mechanics and manufactures, in general, spend three days in the week in idleness, drunkenness and dissipation, *instead of providing for that scarcity which almost always succeeds low prices.*

A. N.

ANSWER TO AGRICOLA MERIDIONALIS ON ANIMAL LABOUR.

To the Editor of the Agricultural Magazine.

SIR,

SINCE I wrote to you with a paper (dated the 1st, instant) on the comparative merit of Horses and Oxen for the purpose of the draught, I have received your magazine for last month, which, I observe, contains animadversions by "Agricola Meridionalis," on my letter in your August number. — That letter was principally intended to convey my ideas on Lord Somerville's statements on the above subject, but I particularly stated, that want of leisure at that time, prevented me from adducing many facts and calculations which I intended to transmit you in elucidation of my opinions. Besides, I had another object in view; a wish to acquaint you with my sentiments on other important subjects, e're you admitted me into the pages of your miscellany, and apologized for thus rendering my letter of too desultory a nature. When I consider these particulars, and that I was controverting the opinions of the noble Lord already mentioned, relative to the causes of our having become importers instead of exporters of grain, since 1754, and that his Lordship has attributed that change to the preference we had given to horses in farm labour, I cannot but think that several of your correspondent's observations are not candid. He contemns, and *endeavours* to turn into ridicule, the arguments I have advanced to show that the great importations we have made, cannot be imputed to the working of horses, and says I have "hurried from the field of industry

to the office of the lawyer, * from the bureau of the politician to the apartments of the statesman, from the counting-house of the merchant to the hall of the senate, &c." But where is the impropriety of imputing the importation of corn to the causes I have mentioned; namely, to an increase of population, wealth and horses for pleasure and trade, distilling, &c. That these causes, together with adverse seasons, have produced the effects which Lord Somerville patriotically deploras, and that these effects cannot be justly imputed to the preference which is given to horses in agriculture, I am fully convinced of, and shall be happy to discuss the subject with your correspondent, through the medium of your magazine, whenever I have leisure to do so; and here I must beg leave to refer him to my letter of the 1st instant, in which, I flatter myself your readers will find the investigation not altogether unaided by such experience and facts as he has called for. However great this correspondent of yours may prove, in point of ability, I confidently expect to prevail against him, *by the goodness of my cause. A cause sanctioned by the practice of nine tenths of the best agriculturists in the world—The Farmers of Great Britain.* Your friend calls my keeping corn from work oxen, "a singular privation." Here he seems, again, to have forgot the nature of the controversy, and that the advocates of oxen have contended that six of these animals to a team will raise much, and consume no corn. What he has stated relative to grain, however, (and no doubt as he calls so much for facts, it proceeds from experience) is much in favour of my arguments as to the superiority of horses, and will warrant the adding of a considerable sum to the annual expences of work oxen. He also says, "the first observation I meet with, of any importance, occurs after half the labour in the composition of my letter is performed, &c." I must, however, take the liberty of calling him back to the preceding page of my letter, where he will find it stated that our forefathers employed oxen in the draught to a much greater extent than the present generation, that experience is the solid basis, on which improvements should rest, and that the laying

* My letter does not contain the word *Lawyer*, and I cannot account for your correspondent introducing it, otherwise than by concluding that the covenants, term, &c. of a lease cannot, *in his opinion*, be fixed or adjusted without the intervention of a lawyer. I on the contrary cannot sufficiently condemn the employment of men of this profession as land agents, and in drawing up agreements between landlord and tenants, for farms. To them we probably owe a great part of those injurious regulations and restrictive covenants, which repress our agriculture in so mischievous a manner. In such matters, none but practical agriculturists of great judgment and ability should be employed. Nothing can be more absurd and detrimental to the best interests of the country, than the agency of lawyers and men ignorant of practical husbandry, in the management of landed estates.

oxen aside, and preferring horses in the cultivation of the soil, is a convincing proof of the comparative inutility of the former animals, &c. It is an undoubted fact that these animals have been laid aside, and horses employed in their room, in eighteen situations out of twenty, and if my stating this, is, as your correspondent says, of no importance, then almost universal practice, *founded on experienced utility*, must, in his opinion, pass for nothing. Yet this gentleman is calling for facts and experience, in almost every part of his letter, and accusing me with founding my arguments on conjecture and opinions unsupported by facts! Equally unfortunate, in my opinion, was your friend, when he asserted that the question of rent is of little consequence to the question on the species of animals best adapted to agricultural purposes, and that I might have availed myself of a conclusive argument from the very terms of the question as to oxen being, *notwithstanding the great additional expence in supporting a team of them*, preferable to horses in a *national point of view*. If I rightly understand him, he first supports the latter idea, and then maintains that "whatever tends to the loss of the individual farmer must conduce to the loss of the state, as the produce of the state is nothing but an aggregation of the profits of these individuals." How he will reconcile these discordant opinions, I know not. But waving, for the present, this part of the subject, is his position relative to national wealth tenable? It was, I think, advanced by a new set of French philosophers, and ingenuously and ably controverted by that profound reasoner, the immortal author on the causes of the Wealth of Nations, who successfully maintained that merchants, manufacturers, &c. &c. also contributed to increase the stock or wealth of the state. Notwithstanding the censure which your Correspondent hurls against me for not adverting to facts and experience, he has confessed that I am so fond of certain "observations," that within "the space of a few paragraphs," I have given such as have a reference to those pillars of truth "in three different ways." First, says he, "it is one pair of oxen, then it ascends to twenty oxen; and in the third instance to twenty-five oxen against an equal number of horses." This part of my letter (of August) contains some interrogatories put to you, and your Correspondents, as to the comparative merits of the two species of animals, which, Sir, is unquestionably an appeal to facts and experience. But has your friend "Meridionalis" answered them, or has he given us any comparative statement of the quantity of work and the attendant expences? No, but he has asserted that my way of proceeding is "obscure." Why then did he not enlighten it? Does he suppose that I, and your other readers, will be satisfied merely by his stating that an old ox will bring his first cost, or more, as food for

man, and that an old horse, "if knocked on the head, is worth nothing" and thrown to dogs? Can he suppose for a moment that such an argument will tend, in the smallest degree, to induce *practical men* to change their opinion relative to the superiority of horses? If the advocates for oxen rest the pretended superiority of these animals merely on their being used for the sustenance of man, I shall not be surprised to see a letter from some of them, in the course of this discussion, maintaining that the work done by Galloways and Asses should be performed by sheep; and that those huge, large boned, and long leged animals, of this species, which I believe are bred in some of the western counties, should be subjected to the bridle and the spurs.

The Creator of the universe gave to man the command and use of the horse, the ox, the sheep, the swine, goat, &c. some for his food, and some for other purposes, but the preference given by the Ancient Greeks, and Romans, to the ox in the culture of their grounds (as mentioned in H. G's quotation from Voltaire,) can no more be admitted as evidence of the superiority of this animal, than the practice of our ancestors, who, within the last century, gave him a similar preference. In proportion as Britons became more enlightened, they laid oxen aside, and *experience* has now so completely established the superiority of horses, as to render their employment in agriculture, almost universal. Under this system, improvements have advanced with more rapid strides than under oxen, rents of land have been doubled, trebled, nay, quadrupled, or more, within the last twenty to forty years, though corn on an average,* was not so much, if any thing at all, higher in price, than in the century preceding the last, and though the wages of labourers, taxes, and all other expences have greatly increased. After considering what I have advanced in this, and my letter of the 1st instant, I hope your Correspondent will not again accuse me with not bringing forward facts in support of this assertion—*That if horses were superseded by oxen in farm labour, a great reduction of rent would become indispensable.*† It is worthy of remark that scarcely any oxen are employed for the draught, in those districts where by far the greatest numbers of cattle are bred, and that the number of calves reared, have increased since the laying of oxen aside in agriculture. This confirms what I have before advanced, namely, that grazing, and not the team, offers the greatest encouragement to the breeders of cattle, and no judge of the matter will deny that

* Setting aside the two seasons of dearth, (1799 and 1800,) occasioned by a long continuance of the most unpropitious weather in the memory of any man living.

† Most of the advocates for oxen are either totally unconcerned in the management of rural affairs, or under no obligation to pay rent.

this encouragement is so ample that many more cattle have been reared in England, within the last twenty years, than in any former, and equal space of time; * a fact, which alone shows that the preference we have given to horses has not diminished, but on the contrary, greatly increased the quantity of beef, &c. in our markets. Compare the quantity of land necessary to support a sufficient number of oxen for one team, with that required for a two horse team, and the truth of this position will appear still more evident. Recollect also, that a three or four year old ox, put to graze, will, in one year, increase his quantity of beef, &c. to the amount of 11*l.* to 14*l.* or more; whereas a labouring ox will improve in value only thirty to forty shillings in the same space of time. I have now, Sir, given this subject that ample discussion its importance demanded, and must beg that your Correspondent will pardon me for treating his remarks with supercilious silence if he does not display greater knowledge of the subject than is evinced by his letter in your last number, particularly if he does not adduce other facts and arguments than such as this, *that an old ox is food for man, while an old horse is food for dogs.* Such arguments may make an impression highly favourable to the ox, on the minds of the great body of consumers of butcher's meat. But in the breasts of the great body of *practical farmers*, they will raise sentiments of a very different nature.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

* Judging from the best means of information the nature of the subject affords.

ON MR. COOKE'S DRILL, LUCERN, THE SWEDISH TURNIP, &c.
To the Editor of the Agricultural Magazine.

SIR,

Fakenham, Oct. 10, 1803.

I WAS sorry to observe that the Drawing which you gave us in your last Number of Cooke's Drill Machine, is taken after the original construction, and not according to the newest improved form. Many judicious alterations have taken place since they were first sold by Mr. Cooke: the number of cells in the seed-box is increased from *six* to *nine*, as also of the tin-funnels and coulters. The lever which elevates or depresses the seed-box, and which regulates the quantity of seed necessary to be sown, is much altered for the better, so that the drill-man can now without stopping, adjust the machine to an ascent or declivity, which he before could not accomplish in its original state. The scarificator is also, I believe, a late excellent addition to this very useful machine, of

which I hope to see a sketch in your next, and of any new appendage to it that has not yet become general in this country.

At page 170 is mentioned the Shim of the Isle of Thanet; will you favor us with a description of one, as being quite unknown to us East Anglians?

Page 174. The gentleman signing himself "An Experimental Farmer," quite mistakes my question, relative to the extent of Mr. Cooke's patent; I wished to know whether the small Hand-Drill, which I was then attempting to bring into use for all kinds of grain, and *not* the Hertfordshire Turnip-Drill, would be considered as infringing on Mr. Cooke's Patent. To which you, Mr. Editor, have already returned a satisfactory answer.

At page 175, is mentioned the surprize of a country workman, that one of Cooke's Drill-machines could be afforded at the price for which he usually sells them. Please to inform this correspondent, that he may make one himself, at the very reduced cost of *ten guineas*. *Probatum est*.

Page 176. F. E. recommends Lucerne, and very deservedly. It is much to be regretted that its culture is not more general; perhaps a greater weight is obtained by sowing it in equidistant rows, but I learn by experience, that the expence of keeping the intervals clean, even by horse-hoeing, (which however will not be sufficient without hand-weeding the drills) is an expensive and never-ending operation. If sown broadcast, it will last several years in very good state, and no expence is incurred. For soiling horses, I know nothing to equal it: for hay, Saint-foin is better: for both, Vetches are highly esteemed, and are found to be congenial to every kind of soil. The advantages of the latter plant are so apparent, that the cultivation of them has increased in this county an hundred-fold within the last ten years.

Page 182. Mr. Saunders, and his pigs, would do well to apply to the board of agriculture. If his discovery has any real value in it, I have no doubt but the worthy president would direct his talents for breeding pigs and fattening into a lucrative channel; it is a pity, however, that the public should lose the secret for want of encouragement.

Page 192. What has been observed of lucerne, will with equal justice apply to that valuable plant, the Swedish, or Lapland Turnip; it is not esteemed in general as it deserves.— A few spirited farmers near me, have grown it, but whether the sort is not strong enough or whatever be the cause, Norfolk although a turnip county, does not shine in the culture of these foreigners. I have seen none arrive at half the size which Mr. Weston mentions. Every season has been tried for sowing from April to July, but not with the success we could

wish. This year, indeed, must be altogether out of the question, as scarcely a plant has escaped that destructive and hitherto invincible foe, the fly. I speak of Norfolk only, whether other counties have been more fortunate, I have not been informed.

It would be gratifying to your correspondents in this neighbourhood, to learn through the medium of your Magazine, what counties, and what proportion of them as nearly as can be conjectured, have suffered by the mildew upon their wheats. The loss sustained by many individuals in this part of the kingdom will be severely felt: It is said, on good authority, that in many whole parishes, the crop will not repay the farmer the expences incurred solely in reaping, harvesting and threshing it!

I am, sir, &c.

AGRICOLA NORFOLCIENSIS.

P. S. The animadversions, which Agricola Northumbriensis felt inclined to level at me, upon my lesson (as he calls it) to Mr. Middleton, are happily stifled "in embryo." Had they seen the light, they must have passed me, unhurt, since I but ventured forth, a pymy, under the wing of that doughty champion of tithes, Mr. Howlett. I should be happy to find that these Numbers have fallen into Mr. Howlett's hands, and induced him to take the field, once again, in so just a cause.

ON SPANISH WOOL.

To the Editor of the Agricultural Magazine.

SIR,

I NOTICE in your Magazine for July last, a long letter from Mr. Nehemiah Bartley, of Bath, and I am very happy to see, however widely I may differ from that gentleman on most of his principles of logic, I perfectly coincide with him on most of his principles of agriculture. He is not quite correct in his account of the marks made on the several distinctions of Spanish wool. Those generally adopted are either R, S, and T, or R, F, and T: the R is a sort of corruption from *Primero*, (which is sometimes written 1 R O), the S implies *Segundo*, and the T *Tercero*. When the F is substituted for the S, the *Segundo* is distinguished as the *Fino*. Some of the most valuable experiments on Spanish wool have been made by his present Majesty in his farms in Berks, and I recollect with pleasure, that the sheep I myself imported about the year 1787, from Spain, were the commencement of the royal flock. It is a discovery of the highest importance that the quality of the wool depends almost wholly on the ram, and I particularly recommend to Mr. Nehemiah Bartley, and

to every gentleman extensively concerned in the breed of sheep, to use their utmost diligence to introduce the Spanish ram into their flocks.* When we see the gentleman we have just named, admits that the wool pays much more than the keep of the animal, and that the fleece sometimes exceeds 17 lbs; when we consider that English wool is occasionally not worth sixpence, and that Spanish wool of the first quality, exceeds the value of six shillings per lb; we shall acknowledge it requires a very small share of talent in calculation to shew the importance of the improvement of our English wools.

This subject is of growing magnitude, on account of the increasing difficulties of intercourse with Spain. It is highly probable that in consequence of the influence of the Consular court, the export of Spanish wool to this kingdom will be wholly interdicted, and every person acquainted with the value of this raw material not only to the west country, but to many branches of the north country trade, will be disposed to listen to every expedient by which a substitute may be found for the wool of the Spanish mountains.

It appears to me that we are deficient not only in the quality of our wool, but in our method of preparing it for the British manufactures. Having attended to the mode of washing this article in the immense establishments for that purpose in the vicinity of Segovia, I shall in a future letter make a comparison between the method here employed, and that adopted in the north of Europe, which I hope will not be unacceptable to the readers of your instructive miscellany.

I am, Sir, your most humble servant,

MERCATOR TARRACONENSIS.

London, Sept. 18, 1803.

Perhaps it may assist some of your Correspondents to form an estimate of the expences attending the importation of Spanish wool, if I subjoin an account of a pile consigned to this country by the well known firm of Francisco de Gorbea, y Sobrinos, of Madrid.

* Into our number for August last, are introduced the progressive rate of amelioration of wool by the Spanish cross, on the authority of Dr. Parry, of Bath, or rather from Sir Joseph Banks citation from the Doctor's work.

"The first cross of a new breed gives to the lamb half of the ram's blood, or 50 per cent."

The second gives 75 ditto.

The third 87½ ditto.

The fourth 93¾ ditto.

At which period it is said, that if the ewes have been judiciously selected, the difference of wool between the original stock and the mixed breed is scarcely to be discerned by the most able practitioners. E.

A pile of wool imported from Spain with all the expences incident to it in the time of peace.

Nt. Wool, Arrobas 2200 . 16½ lb.

Skim ditto . . . 75 —

Lambs ditto . . . 276 —

Arrobas 2551 . 16½ lb.

At 110 Rials of Vellon per Arroba.

	Rvn.	Mrs.	Rvn.	Mrs.
			280 .	682 . 20
118 Days wages to receivers, at				
8 Rvn.	944 .	—		
24 Ditto to factor of receiving				
15 Rvn.	360 .	—		
Making great and small bags, string, piling, and unpiling, pressing the bags of wool in the dirty state and rolling them	358 .	10.		
Carriage to wash-house, and wine to carriers	191 .	26		
Gift at commencement and conclusion, tobacco, wine, removing the low sorts washed, duty of Vudoris candles	546 .	2		
Washing factory, 20 days wages at 15 Rvn.	300 .	—		
Cleaning arrobas 932 at 7½ rs.	6 .	990		
46 Small lambs bags of double Marraga, at 10 rs.	460			
194 Bags exhausted in packages for wool	116			
In bandages	58			
In canal, field, &c.	20			
Bags	194-15 Rvn.	2.910		
			13060 .	4
			s 293742 .	24
2 per cent. commn on purchase and exp.			5874 .	30
			299 .	619 . 27
Deducted for bad wool			366	
			Rs. Vn. 299 .	253 . 27

	Rvn.	Mrs.
Rvn. 299253 . 27 mrs. which, at 37½d.	£.3229	. 4 . 10
	Rvn.	Mrs.
Carriage of 46 bags lambs wool from Pedrazah	1477	. 17
Duties paid agent of proprietor on lamb's wool	5765	. 23
Duties paid agent of proprietor on 116 bags of wool	43561	. —
Charges and carriage to Berber- ana	4473	. 26
Shipping 117 bags, at ½ rs. per bag	87	. 25
Loading, weighing, marking, and enlarging, at 3½ rs.	409	. 17
Thread end wrapper	132	. —
Public weight, duty of 162 bags, at ½ rs.	81	. —
Consulado duty of 117 bags, at 2½	292	. 17
Warehouse of 162 bags, at 1 rs.	162	. —
Commission on ditto, at 7½ rs.	1215	. —
	Rvn. 57657	. 23
	At 40d. per dollar	£.638 . 1 . 9
Insurance 2 guineas on 4000l.	£.84	. —
Average freight and primage 10s. per bag	67	. 10
Landing and all charges of ware- house	26	. —
Brokerage ½ per cent in London, on 4600l.	23	. —
		200 . 10 . —
		<hr/>
Total of cost and expences	£.4067	. 16 . 7
		<hr/> <hr/>

The Arroba of Spain is equal to about 24 lbs. English avoirdupois, and 105 lbs. of Spain is equal to about 100 lbs. English.

The immense loss on the import of foreign wool will be seen by the preceding account. Independently of the loss by fraud, the commission and charges on the washing only amounts to upwards of 6½ per cent. and the subsequent duties and charges, including shipping, insurance, and the various articles detailed, are an increase on the original cost of no less than 25 per cent. The view which this account gives is a great encouragement to the improvement of the English wools by the introduction of the Spanish stock, and no subject can more deserve the minute investigation of your correspondents.

ON GRASSES AND THEIR COMPARATIVE EXCELLENCE.

To the Editor of the Agricultural Magazine.

SIR,

PERHAPS there is no subject in agriculture of greater importance than a correct knowledge of the proportional value of the most useful kinds of grasses. At this time when the improvements in culture have occasioned the frequent alteration of the same land into arable and pasture; it is very material that in the change to the latter, a species of grass should not be cherished destructive of all the most desirable purposes of vegetation. On this account I submit to the attention of your readers a paper on the comparative utility of twenty-three kinds of grass, in which the priority in the number denotes the superiority of the species. It is given from the experiments of Mr. Sole, of Bath; the catalogue was introduced into the voluminous papers of the Bath Society; but blended with a great variety of other grasses not only useless but pernicious.

No. 1.	<i>Poa pratensis</i>	Great meadow Grass.
2.	<i>Festuca Duriuscula</i>	Hardish Fescue Grass
3.	<i>Festuca Pratensis</i>	Meadow Fescue
4.	<i>Lolium Perenne</i>	Ray Grass
5.	<i>Alopecurus Pratensis</i>	Meadow Fox-tail Grass
6.	<i>Festuca Ovina Vulgaris Tenuis</i>	Sheep's Fescue
7.	<i>Poa Trivialis</i>	Common Meadow Grass
8.	<i>Poa Palustris</i>	Marsh Meadow Grass
9.	<i>Poa Angustifolia</i>	Narrow Leaved Meadow Grass
10.	<i>Poa Compressa</i>	Compressed Meadow Grass
11.	<i>Cynosurus Cristatus</i>	Crested Dog's-tail Grass
12.	<i>Phleum Nodosum</i>	Knotty Cat's-tail
13.	<i>Lolium Bromoides</i>	Brome-like Ray Grass
14.	<i>Agrastis Palustris</i>	Marsh Bent
15.	<i>Alopecurus Genticulatus</i>	Floating Fox-tail
16.	<i>Anthoxanthum Odoratatum</i>	Sweet Spring Grass
17.	<i>Aira Flexuosa</i>	Purple Hair Grass
18.	<i>Aira Cristata</i>	Crested Hair Grass
19.	<i>Avena Flavescens</i>	Yellow Oat Grass
20.	<i>Avena Pratensis</i>	Meadow oat Grass
21.	<i>Avena Elatior</i>	Tail Oat Grass
22.	<i>Poa Annua</i>	White Meadow or Suffolk Grass
23.	<i>Phleum Pratense</i>	Meadow Cats'-tail

I am, Sir, yours, &c.

Boston, Sept. 7, 1803.

K. J.

THE PABULUM VEGETATIVUM.

To the Editor of the Agricultural Magazine.

SIR,

OF all the difficulties that have attended the subject of vegetation, there is none which has excited more difference of opinion among the learned in the chemical art than the *pabulum vegetativum*. As early as the time of Mr. Boyle, water was considered in this country the sole food of vegetables, and that distinguished and amiable writer quoted the authority of Van Helmont in confirmation of this theory.* Mr. Hassenfraz and Mr. Foureroy have contended on the contrary, that coal is the essential ingredient in the food of all vegetables.† Coal, however, cannot constitute this food in a solid state, and the means of rendering it soluble on the great scale of nature for the support of her vegetable kingdom is not understood. Mr. Tillet found corn would grow in pounded glass; Mr. Succow, in pounded fluor spar, or ponderous spar; and on such experiments a variety of theories have been attempted to be erected. I shall be happy to see in your work, from the pen of some experienced chemist the elucidation of this difficult question, that while he is analyzing every pebble he can procure from the summit of the Alps and the Andes, we may see that the most important uses to which his art can be applied are not neglected.

St. Thomas's Borough,
Sept 8, 1803.

TYRO.

* Shawe's Boyle 240. † 14 An Chy. 56.

INFORMATION ON THE ECONOMY OF BEES TO BE COLLECTED FROM FOREIGN *rather than* FROM ENGLISH NATURALISTS.

Principio sedes apihus statioque petendæ.

Virg. Georg. lib. 4. l. 8.

To the Editor of the Agricultural Magazine.

SIR,

MANY enquiries in natural history are so immediately connected with agriculture, that I conclude you will not deviate from the general design of your work if you insert some observations on the Bee.

No doubt can be entertained that all subjects of entomology have met with a very inadequate attention in this country. If we admire and applaud the labours of the Linnæan Society, which has been instituted expressly to supply this national deficiency, yet when we turn over the pages of its volumes, and compare them with the elaborate researches of the French

Naturalists, we are constrained to include them among the most obvious and prominent indications of the general neglect to which these subjects have been consigned.

I should be happy to see, therefore, some papers introduced into your miscellany on the history and management of Bees, not drawn from the dull routine of practice established among the poorer farmers of this country, but from the practice and experiments of learned foreigners, who have improved their knowledge of the economy of this insect by consulting the theories of Reaumur, Schirach, De Tigny, and the celebrated naturalists of Geneva.

I shall content myself with concluding this paper with an account I have seen of the method M. Proutaut adopted, by which swarms of bees like flocks of sheep, may be conducted from mountain to mountain, and valley to valley, wherever subsistence is abundant, and best suited to render the industry of this valuable insect productive.

The situation of M. Proutaut is such that almost all the flowers disappear when the corn of the country is ripened. If the season has been favourable and there is sufficient quantity of rain, he sends his bees into Beauce or the Gatinois, which is about three posts, or twenty miles, distant from his home. If the weather has not been favourable they are sent to the shores of the Loire among the fields of Sologne, where the Buck Wheat flower will afford them abundant subsistence till the end of September. It is needless to follow him through the various situations to which he conducts his numerous family, but it is material to point out the method in which the hives are conveyed; and I will explain it in the words of an ingenious naturalist.

“ His first care is, to examine those hives, some of the honey-combs of which might be broken, or separated by the jolting of the vehicle: they are made fast one to the other, and against the sides of the hive, by means of small sticks, which may be disposed differently as occasion will point out. This being done, every hive is set upon a packing-cloth, or something like it, the threads of which are very wide: the sides of this cloth are then turned up, and laid on the outside of each hive, in which state they are tied together with a piece of small pack-thread, wound several times round the hive. As many hives as a cart, built for that purpose, will hold, are afterwards placed in this vehicle. The hives are set two and two, the whole length of the cart. Over these are placed others, which make, as it were, a second story or bed of hives. Those which are stored with combs should always be turned topsy turvy. It is for the sake of their combs, and to fix them the better, that they were disposed in this manner, for such as have but a small quantity of combs in them are placed in their natural situation.

Care is taken in this stowage, not to let one hive stop up another, it being essentially necessary for the bees to have air; and it is for this reason they are wrapped up in a coarse cloth, the threads of which were woven very wide, in order that the air may have a free passage, and lessen the heat which these insects raise in their hives; especially when they move about very tumultuously, as often happens in these carts. Those used for this purpose in Yèvre, hold from thirty to forty eight hives. As soon as they are thus stowed, the caravans set out. If the season be sultry, they travel only in the night; but a proper advantage is made of cool days. You will imagine that they do not ride post. The horses must not be permitted even to trot; they are led slowly, and through the smoothest roads. When there are not combs in the hives sufficient to support the bees during their journey, the owner takes the earliest opportunity of resting them wherever they can collect wax. The hives are taken out of the cart, then set upon the ground, and after removing the cloth from over them, the bees go forth in search of food. The first field they come to serves them as an inn. In the evening, as soon as they are all returned, the hives are all shut up; and being placed again in the cart, they proceed on their journey. When the caravan is arrived at the journey's end, the hives are distributed in the gardens, or in fields adjacent to the houses of different peasants, who, for a small reward, undertake to look after them."

Leves, Oct. 12, 1803.

COLONUS.

THE ABSURDITY OF TEDIOUS AND INTRICATE EXPERIMENTS,
AND THE UTILITY OF SHORT, CHEAP AND EASY ONES TO
THE ORDINARY FARMER, WITH TWO OF THIS KIND EX-
PLAINED.

To the Editor of the Agricultural Magazine.

SIR,

I HAVE a small farm on the banks of the Derwent, and have constantly received from my bookseller at Derby, your Magazine, to assist myself in the conduct of it. It is not easy for me to procure either chemical utensils, or what they call the *materia chemica*, and if I had them, perhaps I should not know how to employ them. This is not only the case with me, but with a large proportion of farmers in the kingdom, who receive a little education at a country school, live afterwards a retired life, and seldom mix in society, excepting during the bustle of market days. What we want in our situation, are not tedious, expensive and intricate experiments, but something plain and concise in its operation, by which we can ascertain without difficulty, the nature of our soil and its produce. For example, it is a familiar experiment with us, when we wish

to know if earth contain any lime, to rub a little of it to the size and shape of a marble, to dry it by the fire, and to drop it into a wine glass full of vinegar: if a frothing take place, we know it contains lime. At Derby the other day, a friend of the late Dr. Darwin's, pointed out to me another method, almost equally easy to try an essential quality in one soil; and as I think it of importance that such simple experiments should be generally circulated, I am disposed to avail myself of the medium of your respectable publication.

It has been sometimes thought that the fertility or barrenness of a soil depended upon its retaining a fit proportion of water, and neither more or less for the support of the vegetables on its surface. Pure sand will hold one quarter of its weight in water, but before I proceed, I will shew how this is discovered. A tea-cup was filled with eight ounces of sand, on this sand (which was before perfectly dried in a shovel over the fire) two ounces of water were gradually poured, the cup was then inverted and a small drop was seen reluctantly to issue from the side of the earth, but until the whole two ounces were applied, no moisture could in this way be disengaged.— In the same manner, clay was tried, which was found able to hold with an equal quantity (eight ounces) of the earth, twenty ounces of water, and lime only four. So that the retentive power of these three species of earth, may be thus stated.— Sand one quarter of its weight. Lime one half its weight.— Clay two and a half of its weight.

Now my friend told me that the retentive power of fertile earth should at least be half its weight, and not more than three quarters of its weight: whatever earth possesses less than the one, or more than the other, is either too dry, or too wet for the purpose of vegetation. It seems then to me extremely easy for any clumsy farmer like myself to poke a bit of earth as large as his thumb out of two distant parts of the same field, to dry it, and to put it in a cup, first correctly ascertaining the weight, and to make two experiments by pouring in water, until, by the inversion of the cup, it shall be found to drop. The medium between the retentive power in the two trials, he may call the retentive power of his field.

The expert farmer (said my friend) will immediately see the important uses to which this discovery may be applied: he will be able by it to assist his judgment in determining the kind of manure most adapted to the improvement of his field, and the species of vegetable best suited to yield him an abundant produce.

I am, Sir,

Yours, &c.

A CONSTANT READER.

Pentridge, 28th August, 1803.

THE NECESSARY CONNECTION OF CHEMISTRY
AND AGRICULTURE.

To the Editor of the Agricultural Magazine.

SIR,

IN your number of June last, a Buckinghamshire farmer makes many pertinent observations on the rotation of crops proposed by Mr. Middleton, but the true reason why a variation in the crops, and why the succession of white to green crops are necessary, is seldom correctly attended to.

It is obvious that if the same plant be continued for a great number of years, the same kind of nutriment will constantly be required from the soil for its support, but if the plant be varied, the cherishing principle given out by the earth will also be changed. The examination of the proportion of the saline substances to the earthy, in the subsequent list, will conduce to explain this theory.

Proportion of saline substances to the earthy.

In Hemp	as	1 to 8
Flax	.	1 to 1, 7
Parsnips	.	1, 1 to 1
Potatoes	.	1 to 1, 5
Turnips	.	1 to 3, 33
Wheat	.	1 to 3
Rye	.	1 to 8
Oats	.	1 to 8

(The figures to the right hand of the commas are decimals.)

A double use may be made of these experiments, by the chemist.

First, they point out the kind of manure suited to the cultivation of each particular plant.

Secondly, they instruct us in the succession of crops.

On this subject, three things are necessary to be ascertained with tolerable accuracy. 1. The component parts of the soil. 2. The component parts of the manure. 3. The component parts of the produce. To these should be added a knowledge of the precise admixture of soil which will most successfully supply those ingredients conducive to the luxuriance of the plant intended for cultivation.

If I am right in these remarks, the impediments to the improvement of agriculture will be readily admitted. Until the studies of the ingenious chemist are connected with the laborious duties of the field, we may multiply experiments without end, but no system can be formed, and the important subject of agriculture can be reduced to no scientific principles. We may use the strength of a giant, but we shall resemble a giant fighting in the dark, our powers will be misapplied, and the objects to which they should be directed will be disappointed.

I shall not inroach farther on your room at this time, but with your permission, in a future paper, I will apply some of these principles to the desultory arguments which are so often employed on this subject.

LUCUS MEDICUS.

Warwick Lane, Sept. 4, 1803.

For the Agricultural Magazine.

We received the following paper from the hands of an American gentleman, and we presume some of our readers will think it worthy their attention.

MANURES FOR WHEAT IN MARYLAND.

IN Maryland, a few miles from the scædral city of Washington, and near the river Potomac, the following experiments were tried in order to ascertain the best manure for wheat land. The soil is high and dry, rather a stony clay, mixed with a little loam, and the ground had been constantly worked for many years, without much attention to proper farming, and but sparingly fed with dung.

A five acre field (nearly a level surface) was divided into five equal parts, exactly an English acre each. They were equally well ploughed and laid down in wheat, three English bushels on each acre, after being manured as follows.

On No. 1. was sown six and a half bushels of plaister of Paris, or gypsum, pounded rather fine.

On No. 2. was put a compost manure, which consisted of some lime. The bed of a fresh water river, common dung, &c.

On No. 3. was cowpenned, as is usual in America, by penning the cattle during the night.

On No. 4. was put stable dung only rather thin.

On No. 5. was limed in the usual way, as in England and Ireland—of oyster shell lime.

The produce of each acre was as follows.

No. 1. produced full 40 bushels. No. 2. 36 bushels. No. 3. 35 bushels. No 4. 33 bushels. And No. 5. 30 bushels.

N. B. There was a want of rain in the Spring, or they would have been greater.

The seed wheat was of the best Sicily grain, weighing 62lb. the Winchester bushel, as imported into Virginia. The produce was a full round grain, weighing 63lb. the Winchester bushel.

The produce of No. 5. with the lime manure, was rather the fullest grain, and as lime does not answer so well the first year this acre will probably produce more hereafter.

It appeared that dung, or organic matter, is the first food, for wheat, as it is of plants generally; and although it must be

repeated every three or four years, will, I think, turn out in the end, the best manure.

The plaister of Paris, gypsum, and lime, will exhaust land much more, and the plaister of Paris more than lime.

Another fair trial on the same acres will be made this fall, with good Portugal seed.

N. B. The English seed got from Kent and Lincoln does not answer so well here as the Italian, and it has been clearly proved that our best seed is that of the first growth from Sicily wheat.

In addition to this paper, we will venture to make some observations on American agriculture.

The price of land is so low in many of the productive parts of America, that the farmer has the opportunity of devoting almost the whole of his capital, not to the purchase, but to the improvement of his estate. A general and interesting view of this subject is given in a treatise that was published, entitled *Observations on the Waste Lands of England*, on the occasion of a settlement of a Colony on the shores of the Ohio. A calculation is there made by which three loads of lime, at twelve shillings a load, are assigned to the acre of waste land. A farm of 160 acres of this kind, is supposed necessary for the support of 1500 sheep, and twenty spayed heifers, and the whole expence of land, cattle, and utensils, is stated at £.3,200

Our attention is naturally turned to the subject by the recent purchase made under the direction of Mr. Jefferson, of the vast and fruitful district of Louisiana, which opens to American speculation the prodigious tract of country extending from the northern and western shores of the Mississippi, to the connected lakes of Erie, Ontario, Huron, Michigan and Superior; these lakes comprise a surface of water equal in extent to the whole of the united states, with a coast of the reach of 3000 miles.

Adverting to comparative agriculture between America and England, we may observe that utensils of all kinds with which the ordinary peasant is conversant, are much cheaper in America than they are here, on account of the abundance of materials for heavy work. Long before Threshing Machines were known in this country, those on a very simple construction were used in Maryland. They consisted of conical logs, which were turned round by a horse in an inner circle.

In some parts of America, the felicity of the soil and season will often enable them to have two crops. The oats will be ripe in June, and may be immediately succeeded by barley, which will be ready to be reaped in August or September.

Poultry, which is a considerable article of profit in this country, especially geese, are of no advantage to the American

farmer, as with him they are sold for 1-5th of the price in the English market.

Manure is much more abundant in small and populous countries, than in those which are extensive and thinly inhabited, for reasons too obvious to need explanation. The kinds which are most easily procured on the shores of the Potomac, besides the produce of the farm-yard, are lime and gypsum, or Plaister of Paris. The farm on which the experiments just referred to were made, is on the banks of that river.

Horses are much cheaper on the Western Continent than in England, but if animal labour can thus be procured more reasonably, a large profit resulting to the farmer in some districts from breeding horses cannot be acquired by the American.

In wages the English farmer has a decided superiority, the price of human labour being 1-3d cheaper in this island than in America.

Adam Smith, in the fourth chapter of his third book of his *Enquiry into the Wealth of Nations* has pointed out in what way the commerce of the towns has contributed to the improvement of the country. Those who have attended to this subject will immediately understand the prodigious advantage England must have with respect to her markets.

The American farmers are, however, released from many obstructions which will be felt in the old governments of Europe, where laws frequently continue in force, when the reasons for which they were made no longer exist. Entails are the natural consequence of the law of primogeniture, and when landed estates were principalities, they were perhaps not only justifiable, but necessary. They are now continued, when the motive is withdrawn, and they have been a great impediment to agriculture. To this may be added the various services, yet required in several parts of the country, (the remains of feudal institution), the impolitic restrictions on the exportation of produce, and many other popular topics of objection to the existing system, which have been frequently noticed in the progress of this periodical work. E.

ON THE APPLICATION OF GYPSUM AS A MANURE.

To the Editor of the Agricultural Magazine.

SIR,

HAVING had an opportunity of attending to the employment of Gypsum, or what is called Plaister of Paris, in foreign agriculture, I have been very much astonished to find it so little understood, and so much less employed, in this

country. All German travellers are informed that the Elector of Bavaria has embellished the splendid capital of his domains with this artificial marble, and its application is known to artists in the happy imitations capable of being produced in this material of all the sublime works of antiquity. But it is not in this view of its utility that I could presume to intrude my observations on your pages devoted to that science which the Philosopher of Geneva, places in the highest rank of human attainment. My remarks must in course be confined in this place to the employment of Gypsum to the purposes of Agriculture, and if my description of its nature and uses should lead to the discovery of any valuable strata, or to the multiplication of the resources of human subsistence, I shall be happy in having invited the attention of my country to a subject of no inconsiderable importance.

Gypsum is with the mineralogist the name of a class of fossils, the characters of which are these. They are composed of small flat particles irregularly arranged, and giving the masses something of the appearance of the softer marbles; they are bright, glossy, and in a small degree transparent; not flexile nor elastic, not giving fire with steel, nor fermenting with, or dissoluble in acid menstruums, and calcine very easily in the fire. Gypsum consists of lime united with the vitriolic acid, together with water, and M. Chaptal, the minister of the interior in France, has shewn that it is composed by the gradual decomposition of pyrites, which form the vitriolic acid: this being carried off by water takes up lime in its course, and the combination is afterwards deposited in consequence of the spontaneous evaporation of the water.

It was not discovered to be a manure until 1768, when Mr. Mayer, a German clergyman, ascertained its important uses in this respect, and it has since been applied with great success in his own country, in Switzerland, France, and very extensively in the southern provinces of the United States of America.

The reason of its being resorted to as a manure abundantly in France, was the circumstance of a chain of hills in the vicinity of Paris, being found to be composed of this fossil, and it has since been clearly ascertained that many chains of mountains of the greatest length on the face of the globe, are principally composed of this material. In some cases, it is composed of large, transparent, thin laminæ, which are so applied to each other as to constitute transparent masses: in this form it is called *lapis specularis*. In other cases it is crystalized in striæ, like threads applied longitudinally to each other: this is called striated gypsum. And sometimes a large quantity of gypsum is found in small irregu-

lar crystals, joined together, and composing considerable masses of semi-transparent granulated stones, commonly called *Gypseous Alabaster*. We also meet with a rhomboidal gypseous stone, called also selenites, and other Gypsums are found, consisting of differently formed crystals, as hexagonal, parallelepedons, and pyramids.

Gypsum has probably not been used so much in England on account of the large proportion of the calcareous principle which prevails in a great extent of the soil of this country, but every philosophical agriculturist will admit, that clayey lands abound in most of our counties, and that Gypsum is calculated to conduct these lands to the highest possible state of improvement. The most advantageous time for spreading it is in February and March, and the just assignment of the quantity is of the greatest consequence to the effect intended to be produced. It is a familiar proverb, that "too much of one thing is good for nothing:" more than eight bushels an acre, instead of being beneficial, would be pernicious, and then it is not to be ploughed in like other manures in general, but to be strewed on the surface of the land. This influence, merely from the circumstance of its superficial action, makes it of the greatest value in the melioration of grass land. Those who have not had an opportunity of feeding off their rowan grass have felt the serious inconvenience which arises from the old sour grass remaining on the surface: the effect of the Gypsum is wonderful in the facility with which it converts this old grass into coal, thus supplying the land with the most valuable of all manures. What is destructive to the old grass cherishes the young growth, and thus an abundant crop is secured with the lowest degree of probability of disappointment:

The only precaution I need notice in the use of this manure, is that the land on which it is employed must be dry, such as would naturally suit clover: of that plant, it constitutes a considerable part of the food, and also of pulse, and corn in general.

Some of your readers will not be unacquainted with the account given of this manure in the *Histoire de la Putrefaction*, and it may be there seen that the rationale of its effects is to be deduced from its extraordinary septic power; for it is found to accelerate putrefaction in a greater degree than any other substance applicable to the purposes of agriculture.

I am, Sir, yours, &c.

Oct, 7, 1803.

N. O.

DISTILLING ARDENT SPIRIT FROM POTATOES.

To the Editor of the Agricultural Magazine.

SIR,

I Have tried, without success, the experiment of Dr. Anderson, in the papers of the Bath Society, for the extraction of ardent spirit from fermented potatoes, and from the disappointment, I am led to suppose that the saccharine juices are so deficient in potatoes, as not to support the vinous fermentation: for it is an established fact, that this fermentation alone takes place in bodies that contain those juices.

With the admixture of a little yeast to the potatoe liquor the acetous fermentation took effect, and continued for a week, and then was followed by the putrefactive, but the first stage, or the vinous process, never took place at all.

If any of your Correspondents have tried this experiment with more good fortune, or rather with more skill and intelligence than I have done, I shall be glad to see a detailed account of it in the pages of your interesting work.

Oct. 12, 1803.

M. L.

AGRICULTURAL CHOROGRAPHY OF ENGLAND.

To the Editor of the Agricultural Magazine.

SIR,

I SEE, with pleasure, the encouragement you have given me to continue my communications on the subject of the Agricultural Chorography of England, by the immediate insertion of my last letter.

I informed you that the materials with which I am supplied on this subject are collected "from the minutes I have made in various journies for my amusement, in different parts of the kingdom." Those who know the difficulty of obtaining information will readily excuse the errors I commit, and when I inform them of the method I pursued, they will not perhaps think them likely to be very gross or very numerous.

My scheme was comprehensive, it was to detail all the peculiarities in agriculture in the fifty-two provinces of the kingdom, which I arranged under the great distinctions of the northern, midland, eastern, western, and southern counties. When I entered any county I had a book superscribed with the name of that county, and each page was distinguished by the following titles:

1. Situation, surface, and climate.
2. Population and extent.
3. Rent and taxes.
4. Soil and general produce.

5. Species of manures employed.
6. Kinds of corn cultivated.
7. Kinds of pulse ditto.
8. Kinds of roots ditto.
9. The hortulan or garden produce.
10. The species of grasses.
11. The kind, quantity, and condition of the cattle.
12. The peculiarities in the respective farms, in the method of draining, watering, fallowing, &c.
13. The implements of husbandry employed.
14. The price of labour.
15. The leading maxims in the farming system of the county.
16. Its comparative merit with respect to other counties.

These heads I found quite sufficient to involve every important subject of inquiry; but it should not be expected that in the cursory view I have taken of many parts of my country I should have been able to have filled up all the blanks in this arrangement. If I had I should have had it in my power to present a more regular and complete description of the agricultural chorography of England than ever has been produced of any other country.

I have given this view of my plan in the undertaking, that where my account shall be deficient, others may more conveniently supply it, and perhaps with the hope that some bold and intelligent traveller may complete my favourite design, which from the duties, or perhaps the indulgencies of life, I have been induced to abandon.

However extensive this plan may appear, it is contracted and contemptible, compared to the wide, and perhaps wild scheme of my juvenile ambition; which was not to confine myself to one single country, but to supply the broad facts of agricultural cosmography, and the outline of this project, I should have communicated for your work if it were not more suited to the political arithmetician than to those concerned in the painful but important duties of the field.

I shall content myself now with merely giving this general delineation of my plan lest I should intrude too much on your indulgence, and I shall probably devote each of my future letters to a county, blending with dry facts, such observations as the nature of the subject shall suggest.

October 10, 1803.

CHOROGRAPHUS.

ON SOWING TURNIPS IN NORFOLK.]

To the Editor of the Agricultural Magazine.

SIR,

Norfolk, Oct. 26, 1803.

YOUR Magazine for November, 1802, contains a very correct account of the mode of cultivating Turnips in this county, which I believe stands foremost in the kingdom,

in the management of that valuable plant.—Taking the whole county, we have not I think this season, one fourth of a crop, so many having been destroyed by the fly; the first sown almost without exception, and on many lands, the repeated sowings have been taken off by the above insect, as fast as the plants have appeared above ground. It is the general practice, if the plants be destroyed, to plough the land again before the seed be sown, though perhaps it has not lain more than a fortnight from the last ploughing, and has received in the course of three months, three or four earths, under the idea, that by this management, the seed is sown in mould, but I believe the real use of this ploughing before sowing to be, that thereby the seed weeds which have vegetated are destroyed, which otherwise would have outgrown the young turnips, and consequently smothered them. It struck me that this last object was to be attained by a different management, and the moisture of the land more completely retained. As some of my early sown turnips shared the same fate with those of my neighbours, instead of ploughing the land again, I put the scuffler to work upon it. I presume the greater part of your readers are acquainted with this very useful implement, for cleaning land of couch-grass, &c. &c. but if not, suffice it now to say, that it acts like the gardener's track which he thrusts before him, cuts all the land completely (consequently destroys all the weeds) without turning the surface under, and can be worked at any depth, either just beneath the surface, or as deep as the land has been ploughed, and therefore leaves it in a fine pulverized state, fit for the reception of seed. Cooke's drill immediately followed the scuffler, and deposited the seed, (a pint and a half per acre) into rows nine inches apart, and about two inches deep. I was thus able with two men and four horses (the scuffler requiring three, the drill one, and each one man) to scuffle, drill, and harrow, at least eight acres per day, the man at the scuffler having sufficient time to do the harrowing with the same horses, without stopping the drill. The land by this management was sufficiently loosened, the weeds completely destroyed, (but no new surface turned up and exposed to the drought) and the seed deposited by the drill in moist earth, whereas by ploughing, though you toss up the moist mould for the reception of the seed, you turn under that which is very dry, and the fresh surface, though at first moist, in a short time becomes as dry almost as the other. This process more than met my expectation, the plants appeared in a few days, strong and vigorous, and were hoed within three weeks (a rare promise of doing well) and this without having received any rain upon them, and are now the most regular piece in the neighbourhood, indeed they cannot be more so. Most of my

soonest, I think it will not be unfair to reckon, that I kept (including lambs) at the rate of two score, twenty-six weeks, or one score fifty-two weeks, and if so, they paid me 17s. 3d. per score, per week, and their keeping is not expensive, as they run with the bullocks, and eat only the pieces of turnips left by them (which would otherwise be wasted) not being able to bite a whole turnip from the want of fore teeth; and as soon as the grass shoots they are turned into the meadows.

Can any management of sheep equal this in profit, but it can be carried only to a certain extent, according to the demand for fat lamb. I have regularly persued the above plan, and have this autumn bought thirty crones, at 15s. an account of which and their produce, I will send you if I live till next Michaelmas, should you deem this communication worthy a place in your very useful Magazine. You will observe in the Creditor's Account, only nineteen crones are mentioned, one I lost by some casualty. Three lambs I also kept for stock, which I have not noticed in the account.

I am, Sir, your obliged Servant, and constant reader,

P. J.

ON DIFFERENT MODES OF PRODUCING AND PRESERVING
YEAST, ABROAD AND AT HOME.

To the Editor of the Agricultural Magazine.

SIR,

AS Yeast is not only useful but necessary for a great variety of purposes in country life, and as it is often impossible to be procured in retired situations, you will, perhaps, think it proper to circulate extensively by your work, the means of producing artificial yeast.

The following is a method employed in Germany. To one hundred pounds of the best malt, consisting of one part of malted wheat and two parts of malted barley, dried in the open air, and well bruised, add ten pounds of good hops, and brew the mixture with 350 pounds of water, to form wort.— After a short boiling, separate the grains and hops from the wort; which last, by continued boiling, may be reduced to 17 lbs. Cool it down as soon as possible to 70 degrees Fahrenheit, and then mix it with 32 lbs. of yeast. The first time may be the yeast of common brewers, but in every subsequent operation of the artificial. The wort will soon ferment, and in a few hours it will be covered with a thick yeasty froth; the whole mass must then be strongly agitated, and at the same time well mixed with from 50 to 75 lbs. of fine ground meal, of wheat or barley, malted or otherwise. In a cool place this yeast will keep ten or fifteen days in summer, and four or five weeks in winter. It is said to be as good as the best common yeast for the use of brewers, distillers, bakers, and pastry-cooks.

In the following method, the yeast will be preserved as well for fifteen months, as for fifteen days, whatever may be the season of the year or temperature of the air.

In Lancashire and Yorkshire, yeast is dried and kept for constant use, in almost all the cottages of the country.

A quantity is procured and kept in small tubs until the superfluous beer, or moisture is separated, which is then poured away. The yeast in this state, if exposed to the sun or the fire, will dry into a hard cake. Of this cake, when they have occasion for yeast, they cut off a piece according to the quantity wanted: this piece is immersed in warm water, where it will be seen to work or ferment as it before did in the beer.

All the precaution necessary in the drying is, that it be done in small quantities, otherwise the yeast will become musty.

Those who have been accustomed to travel in the counties we have named, have frequently seen this useful preparation suspended under the ceilings of the kitchen, in forms resembling oat cakes.

Fulneck, Oct. 20, 1803.

MATER FAMILIAS.

ON THE GENERAL IMPROVEMENT OF THE COUNTRY, AND ON A NEW DISCOVERY APPLICABLE TO THE CONSTRUCTION, REPAIR, AND EMBELLISHMENT OF FARM HOUSES AND OTHER BUILDINGS.

To the Editor of the Agricultural Magazine.

SIR,

EVERY one must see with pleasure, that the late improvements in Agriculture has been succeeded by the amelioration of the condition of its professors. I am an old man, yet my memory is sufficiently retentive to bring to my notice the humble condition of the peasant in the earlier part of the last century, when dogs, pigs, cats, and poultry were the domestic companions of the peasant's family, and alternately partook of the same bone.

I have lately made a progress through some of the opulent counties where nature wears her freshest attire, and assumes her most vigorous form, and in those tracts which I was accustomed to see thinly scattered with farms and villages, I have now noticed hundreds of taper spires, pointing towards heaven, and all the marks of abundant and industrious population. The wealth and magnificence of our cities in Europe, is often an indication of the poverty and insignificance of the country, but the comfort and affluence of the laborious rustic is an irrefragable proof of public prosperity and private happiness.

But I must not indulge the garrulity of old age, and deviate from the leading intention of your work, which I conceive to be utility.

Among those circumstances which most clearly denote rural improvement is the application of the expedients of the architect to increase the accommodation of the peasant's family, and I cannot sufficiently express my admiration of the little Gothic edifices which appear on every side, and remind us of the hospitality of our forefathers. These in general are constructed of a material which happily enough imitates Portland stone, and Mr. Thomas Fulcher, of Ipswich, has very seasonably contrived a material which he calls a Water-proof Composition, in imitation of Portland stone, for stuccoing and washing new and old stone, and brick buildings, and for cementing the joints, and tucking and pointing all stone and brick works that require proof against water.

This is not only useful for the construction of new buildings, but is also applicable to the repair and embellishment of old buildings, and I think I cannot close my letter in a more interesting way than by giving in his own words a precise account of the nature of his discovery, and of the various modes in which it may be advantageously employed. It will be seen by the account that instead of the necessity of employing bricklayers on every trifling occasion, a common peasant under the direction of the master, will often be able to repair the dilapidations of time without any further assistance.

This "imitation of Portland stone he directs to be compounded in the following manner, viz. To three pecks of the best pit-sand, washed till perfectly cleansed from soil or dirt, dried and calcined, add twelve pounds of white lead, well dried; one peck and a half of dried whiting, and one pound of litharge of gold. These are to be well mixed and beaten together with eight pints of linseed oil, and two pints of the spirit of turpentine, in a stone or wooden trough or mortar, till the whole becomes about the consistency of common putty. It is then fit for stuccoing. When required for washing only, then add to the above mixture twenty pints of linseed oil, and ten of the spirit of turpentine, and one pound of litharge of gold, the whole well mixed.

"Although these proportions are given as those which will be found best for general purposes, yet they may be varied according to the discretion and judgment of the workman. The stuccoing is to be performed in the same manner as plastering, and requires two coats, observing, however, not to lay on the second coat till the first is quite dry. Old walls must be prepared by cutting out the bad parts of the stone or brick, and replacing with new. The washing is done in the manner of painting, and requires two coats, the second colouring not to be laid on till the first is perfectly dry. This Stucco and wash have the properties of keeping out all damps and wet effectually."

Oct. 1, 1803.

SENEX,

CRITICAL CATALOGUE.

- I. *Observations on the Utility of cutting Hay and Straw, and bruising Corn for feeding of Animals, arranged and elucidated, not by chemical test, but agricultural practice; with a full and particular Description of the best Machines for that purpose; with approbationary Certificates annexed: Also a new and valuable Discovery, of the utmost importance to the Agricultural World; by which means every Farmer may separate the more nutritious parts of his straw for feeding animals, from the refuse, which may be used for litter.* By W. Lester, Farmer and Engineer, Piccadilly. Royal 8vo. 34 pp. 5s.

OUR Readers will recollect that, in the 39th Number of *The Agricultural Magazine*, we introduced a letter from Mr. Lester, containing a description of his Patent Separating Machine, together with an engraving of that useful instrument. The present tract relates principally to an improved straw-cutter, the invention of the same ingenious gentleman, whose meritorious exertions in bringing to perfection the implements of agriculture cannot be too highly applauded. "Having made," he says, "the implements and machines in agriculture my study through life, by which means I have been enabled to bring that common, though useful implement, the harrow, to a state of perfection never before known in this or any other country; the general approbation this improvement received, stimulated me to turn my attention to the improvement of the straw-cutting machine, on which I expended nearly one thousand pounds before I obtained the desired object."

We shall take an early opportunity of laying before our Readers a description of this useful instrument, and extract what the author here says, on separating the nutritious part of straw from the parts of less value as food for animals.

"That there is a certain portion of the straw of corn, containing a far larger quantity of nutritive substance than other parts, will be admitted by every observer conversant in vegetable economy. This being granted, the same observation will probably point out what part of the straw contains these superabundant riches from that which is deprived of them.

"It is well known that the saccharine substance is, of all others, the most nutritive in animal food. And in proportion as this exists, so is the food rich or poor.

"It will be found by examining the straw of corn, that the greater part of this substance is contained in the cavity of the straw immediately above the knots, in the form of pith, which being scraped out with a penknife, when the knots are cut longitudinally, and put upon the tongue, the sweets are immediately perceptible. This may be found in all straw in a dry state, but much more when it is green. The under part of the knot does not contain any of this sweet pithy substance visible to the naked eye, but appears an empty space, void of any substance; so that it seems as if the valves contained in the knot had closed, and prevented the superabundant support of the seed from subsiding to its parent earth. This pithy saccharine substance, I presume, was in a liquid state at the time the seed was perfecting, which, when completed, the efforts of nature

probably stop, and congelation takes place; by which means these reservoirs become charged with the above sweet nutritive substance. May this not be the case with all our grasses that stand to perfect their seed, or that are cut before their seed is ripe? If so, the same means I propose to separate the more nutritious parts of straw, will hold good with regard to hay, by which means a richer food may be obtained, next unto corn, for animals, than has yet been discovered in the annals of agriculture. Be this as it may, I must leave it for practice to demonstrate, and content myself with giving the hint.

“I shall now briefly state how this idea of separation originated. About eighteen months ago, I was applied to by one of the managers of a very large intended manufacturing concern, for the purpose of making paper from straw, and offered a large sum of money, if I could produce an engine that would separate the knots from straw, as they then employed a considerable number of hands to cut them out with shears. This I at that moment conceived next to impossible; but from an accidental observation some months after, in cutting some strong wheat straw, I found the knots to fly, by the concussion of the knife, to a considerable distance from the machine, beyond the parts that contained no knots. From this observation I concluded, that the object was discovered that was so interesting to the paper-maker. Having a winnowing machine standing by the straw-engine, I put the cut straw into it, and passed it through, when I found the knots, from their gravity, come through the sieves like corn, and the other blowing away as chaff. I now found the possibility of constructing an engine for the complete separation of the knots from cut straw, and immediately went to the paper manufactory, intending to make a contract for the engine they so much desired; but, to my utter disappointment, the works were stopped; for what reason I know not. Had it been for the want of an engine to take away the knots, I am confident I could have set them to work again; but I candidly confess it was this application, and this disappointment, that drew my attention to the process for agricultural purposes, the importance and propriety of which practice alone will demonstrate. The mode is simple, and the expence trifling, within the reach of every farmer; it is only to cut his straw, and either heave it down before a wind, or throw it with a shovel, which will always separate the heavy substance from the light, in exactly the same way as dressing of corn. The separation will be complete if the straw is cut an inch long.

“As the process of cutting facilitates the mixture of plants of different tastes and qualities, so will it also, with the assistance of wind, facilitate the separation of the more nutritious parts of different vegetables, used as dry food for animals for the more immediate application to feeding or store stock, the propriety of which, I presume, will be obvious to every gentleman who has turned his attention to this interesting subject.

“This, perhaps, may be objected to in some situations, on the account of the refuse being cut too short for litter; but I do not believe this will be by any means a general objection, for there are advocates on both sides the question. Some maintain that it is best

to consume as fodder the whole of the straw produced upon a farm; while others contend the reverse, that it is best to consume the straw as litter. Perhaps the middle way is preferable; but the public must admit that that is the best method which produces the most animal food, particularly at this time, when there is such a disproportion betwixt the price of bread and meat. In that case, the rules of economy will reasonably lead us to prefer the use of the most nutritious part by all the best known methods of obtaining it; therefore I conclude, it will make no difference to the beast whether his bed be long or short, so that he can obtain the greatest quantity of nutriment from the smallest quantity of food; and I presume the dung will lose nothing in its time to be returned to the land from this disunion of its parts."

Mr. Lester's observations on the advantage and utility of bruising corn for horses, and on the general principle upon which all machines should be contrived are equally judicious and candid.

"Bruising of corn for horses," he says, "is nothing more than assisting mastication by art. It may be observed that many horses void their corn whole, and even in a state that it will vegetate after having passed through the body of the animal. In this case the propriety of bruising must be obvious; for when there is no dissolution of the farinaceous and animalized matter, the combination of which forms the saccharine substance, the most nutritive and desirable food to all animals, the body cannot have derived much nutrition from food voided in this state. This, I presume, gave the idea for bruising by art; a very rational one, and would, I am fully persuaded, become universal, could some simple and effectual machine be invented for this purpose. There have been several attempts; but most of them are too laborious to work by hand, and others mealing the corn too much; whereas, for obvious reasons, it should not be mealled at all. The greatest difficulty is found in bruising oats, from the glutinous substance discharged from them by the pressure, which adheres to the rollers, and in a short time chokes up the mill. Could this effect be got rid of, I am confident the desired object would be accomplished.

"The best machine I have yet seen for this purpose is one with three cylinders, manufactured in London; but this I have an opinion may be very much improved. A portable horse-power, of a simple and cheap construction, would be the best mode for all these purposes; not that I suppose it requires so much power to bruise oats as to meal them; for there appears to be a greater probability of the success of a hand-bruising machine, than there does of every man being his own miller. By the means of a hand flour-mill, "the ephemera of the day," the bruising of corn may be done by an instantaneous pressure; but grinding of it into meal effectually requires friction, and to produce that necessary friction requires surface. That surface, kept in a proper motion, requires power more than man will be able or willing to apply. If he can obtain his bread in any other way, whatever machine abridges the labour of the hand will always find a market in every country, and a welcome reception by men that work there; but whatever machine

renders the process more laborious, is sure to get into its proper place, that is, in the dark corner of the lumber room.

“ This should be the criterion by which all schemers or contrivers of machines for hand-labour should be guided, or otherwise they will only spend their time and money in vain. They perhaps may impose upon that part of mankind who have but little knowledge in mechanical powers; but, in time, the novelty that caused them to purchase will cease, when the machine will be condemned, and the contriver brought into disgrace. The public approbation can only be retained by an article that is substantial and really useful. If these observations should be found any way serviceable to check the impositions that daily occur in this way, the intended purpose will be answered. People should be careful how they purchase articles they do not understand, and should always take this for their guide, to see that the utility of them is fully testified by credible certificates; for it is giving credit to these dabblers in mechanics, that checks improvement more than any other cause, and prevents the introduction of that which is really useful; for a burnt child dreads the fire.”

This pamphlet concludes with a list of the prices charged by Mr. Lester, for the different articles manufactured by him, exclusive of carriage. As it may possibly convey information, that may be of utility to some of our readers, we shall make no further apology for inserting it.

	£.	s.	d.
Patent Separating Machine.....	36	15	0
The Improved Portable Horse Power to work the above, which may be put up or taken down in the course of one hour, without the assistance of either carpenter or mill-wright; to be worked by one horse only, and may be applied to drive a straw-cutter, an oat-bruise, or any other apparatus within the power of one horse....	15	15	0
Patent Chaff Engine or Straw Cutter, to be applied to the above horse power, or any other machinery.....	15	15	0
Patent Hand Chaff Engine.....	13	13	0
Extra Knife to ditto, which will be found very useful in case of an accident, by cutting against a stone, &c. till the other can be ground.....	0	12	0
Improved Wincing Machine, that will dress ten quarters of corn in two hours.....	12	12	0
Improved Cultivator, which had the merit to obtain the honorary reward of the Society of Arts and Commerce, in the year 1801.			
With seven shares.....	10	10	0
With five shares	8	8	0
Patent Harrows, first size, six feet long by six feet wide, jointed in the centre, one horse draught	3	13	6
Ditto two-horse draught	4	4	0
Ditto four-horse draught	4	14	6
Ditto six-horse draught.....	5	5	0

These are sizes more properly adapted for harrowing in all kinds of grain; the weights are adapted to the different soils.

The tines twelve inches apart in every direction, and one inch and a half betwixt their tracks in their line of draught.

SECOND SIZE

Are seven feet and a half wide, by six feet nine inches long, the tines fourteen inches apart in every direction, and two inches betwixt their tracks in their line of draught.

Two-horse draught	4	14	6
Four-horse ditto	5	15	6
Six-horse ditto	6	6	0

This size is more particularly adapted for the cleaning of foul fallows of couch.

THIRD SIZE

Are nine feet wide, by seven feet six inches long, the tines sixteen inches apart in every direction, and two inches and a half betwixt their tracks in their line of draught.

Two-horse draught	5	5	0
Four-horse ditto	6	6	0
Six-horse ditto	7	7	0
A Garden Harrow to be drawn by men	2	2	0

I have established a *dépôt* for the sale and exhibition of the above, and all other improved implements in agriculture, in Piccadilly, near St. James's church, and within one minute's walk of the Board of Agriculture; where, to prevent imposition, no implement will be exhibited but such whose utility and improvement are fully testified. I therefore solicit the attention of all manufacturers of improved implements, to send a specimen of their improvements, with certificates of their utility, which I mean to exhibit, and sell by commission upon the most moderate and equitable terms."

We observe, that Mr. Lester announces for speedy publication—The History of some of the most improved Implements in Husbandry of the British Empire, with copper-plate descriptions. The size of the work will be large quarto, and it will contain the history of the thrashing machine, with extracts from and observations on the County Reports to the Board of Agriculture. We wish Mr. Lester that success which his labours so well deserve; and with these sentiments we cannot forbear advising him in his future publications, to consult moderation in the price more than he appears to have done in the present; at least, that, we conceive, would be the most likely method of ensuring them a more extensive circulation.

II. *A Domestic Treatise on the Diseases of Horses and Dogs, so conducted as to enable Persons to practise with Ease and Success on their own Animals, without the Assistance of a Farrier; including, likewise, the Natural Management, as Stabling, Feeding, Exercise, &c.; together with the Outlines of a Plan for the Establishment of genuine Medicines for these Animals throughout the Kingdom.* By Delabere Blaine, Professor of Animal Medicine, Author of the *Anatomy of the Horse, A System of Veterinary Medicine, A Treatise on the Distemper of Dogs, &c. &c.* 12mo. 4s.

THIS Treatise is one of those elementary works, by which the principles and practice of the art of which they treat are ren-

dered perfectly intelligible to the lowest capacity, and whose general utility entitles them to the highest encouragement. It is a kind of abridgement, or compendium, of Mr. Blaine's large work on Veterinary Medicine, and is equally suited to the gentleman and the day-labourer. It gives a short description of the principal diseases to which the horse is subject, and the proper method of treatment, in language concise, but at the same time clear and perspicuous.

The part of this volume, however, which possesses most novelty, and is upon a subject to which, before Mr. Blaine, no regular veterinary practitioner condescended to bestow attention, is that which treats of the diseases of dogs; and in making them the objects of his study, he appears to have been less influenced by motives of pecuniary profit than by the more powerful calls of humanity, and affection for the canine species. In his preliminary observations to this portion of the present work he says:—

“ The distinguishing the diseases of dogs, and the proper mode of treatment, are not the only difficulties to be overcome; but how to administer the remedy, when the others are evident, is often a very serious difficulty. Now and then, dogs prove very refractory; but, in the greater number of cases, medicines may be easily given to them; but to a large dog, not less than three persons are often requisite. In general cases, however, two persons can manage it readily in the following manner: place the dog upright on his hind legs between the knees of a seated person, with his back towards the person; then apply a napkin around his neck and shoulders behind, bringing it over his fore-legs, and securing it by the knees of the person holding the dog: by this means his fore-legs cannot act against the medicine. The jaws being now opened by the person between whose knees he is, a second attendant now holds the tongue down with one hand, and with the other places the medicine on the root of the tongue; when, his mouth being closed, and kept so by the hands, it is of necessity swallowed. Nutriment may be given in a similar manner.

“ Dogs, in sickness, must be attended to with the same care that a child requires: whatever is worth doing at all, is worth doing well; and if dogs deserve any attention, they must deserve good attention, and humanity demands that our utmost exertions should be bestowed to relieve them; and if in a state of health they are allowed to come near the fire, to sleep warm, to be caressed, and to eat good food,—in sickness they require still more; and when, merely to avoid trouble, they are in this case confined in a cold room, or out-house, attended by a neglectful servant, without solace, and with cold food and water alone, neither can we expect their recovery, or answer to our own minds their deaths. Dogs are very irritable; and though it may seem an affectation of tenderness, it is yet a very necessary caution, that when they are ill, their minds should be soothed by every means in our power, or their complaint, in many instances, will be greatly aggravated. I have seen a sick dog fall into convulsions at the momentary sight of a dead one; and I have many times witnessed an angry word spoken to a healthy dog

have the above effect on a sick one, who was near. Joy and surprise will produce the same. A dog under my care, who was rapidly recovering from a lingering illness, was visited by a servant, of whom the animal was particularly fond: on seeing this servant, he at once fell into convulsions, and never afterwards recovered from them; and this I have seen frequently happen. So great is the gratitude and attachment of these animals, and so feelingly alive are they to kindness, that even in death they are not unmindful of their benefactors. A large setter, who, after being tenderly nursed in distemper for three weeks, had lain on a bed for three days, in a dying situation, without the ability to rise;—a lady, who had been very attentive to him, on entering the room after a short absence, observed him fix his eyes attentively on her, and make an effort to crawl across the bed towards her; this he accomplished, evidently for the sole purpose of licking her hands; which having done, he expired without a groan. I am as convinced that the animal was sensible of his approaching dissolution, and that this was a last forcible effort to express his gratitude for the care taken of him, as I am of my own existence; and had I never witnessed but this proof of excellence alone, I should think a life devoted to the amelioration of their situation far too little for their deserts.

“ Being engaged on a subject, in which I profess myself an enthusiast, I beg to be indulged in one more story, to which, though I was not, as in the above instance, a witness, yet, from the authority on which I received it, I can venture to answer for its authenticity. In the parish of St. Olave, Tooley-street, Borough, the church-yard is wholly detached from the church, and surrounded with high buildings, so as to be wholly inaccessible but by one large closed gate.

“ A poor tailor, in this parish, dying, left a small cur-dog inconsolable for his loss. The little animal would not leave the dead body, not even for food; and whatever he ate was forced to be placed in the same room with the corpse. When the body was removed for burial, this faithful attendant followed the coffin. After the funeral, he was hunted out of the church-yard by the sexton, who, on going to ring the morning-bell the next day, again found the animal, who had made his way by some unaccountable means into the church-yard, and had dug himself a bed on the grave of his master: again he was hunted out, and again found in the same situation the following day. The minister of the parish now hearing of the circumstance, had him caught, taken home, and fed; and by every means endeavoured to win his affections: but they were wedded to his late master; and, in consequence, he took the first opportunity to escape, and regain his lonely situation. With true benevolence, the worthy clergyman permitted him to follow the bent of his inclinations; but, to soften the rigour of his fate, he built him on the grave a small kennel, which was replenished once a day with food and water. Two years did this example of fidelity pass in this manner, when death put an end to his griefs; and the extended philanthropy of the good clergyman allowed his remains an asylum with his beloved master.

“ Warmth is always congenial to the feelings of dogs; but in sickness it is even more necessary than fresh air: their diseases are very apt to end in convulsions, if they are not kept warm.

“ Liberal feeding is essentially necessary in most diseases to which dogs are liable: living, like ourselves, a life of art, their complaints are most of them those of weakness; that is, under disease, they seldom can bear to be much lowered: there are cases, however, as active inflammation, where a cooling plan only can be proper. When dogs are very weak, their stomachs cannot digest meat, even if they willingly eat it: but in these cases they receive more nutriment from broth, jelly, &c. but most of all from gruel; for broth often purges, but gruel never. They must be enticed to eat likewise by the same little arts we use to persuade sick children to take nourishment; for they are, under these circumstances, to the full as fickle and as fanciful. A steak very nicely dressed will entice them frequently; and pork, in many cases, when no other meat will. Broiled or roasted meat is always taken in preference to boiled, and is more nutritive. Game-bones will often be taken, even by sporting-dogs, when every thing beside is refused. But in all cases of sickness, when a dog obstinately refuses to eat, he must be forced; and the best food for this purpose is thick oatmeal-gruel, poured down by means of a butter-boat. In cases requiring cordials, ale may be mixed with the gruel, or even wine in some instances, as in putrid diseases.

“ Cleanliness is not only essential to the health, but to the comfort of dogs, and in sickness is refreshing to them.

“ Not only are dogs improperly treated in sickness, but the means of preserving them in health are not sufficiently attended to. The want of *exercise* is a great cause of disease among dogs: by this means they become mangy, get obstinate coughs, canker in the ears, and cancerous swellings, or they become absolutely choked with fat. The not permitting the females to *breed*, is in them a fruitful source of disease:—cancers along the line of the teats originate from this; obesity, foul coats, and cankers in the ear, likewise are brought on by this neglect. *Vomiting* is a natural act in dogs, and they purposely excite it in themselves by eating dog-grass; but where they are confined, as in great cities, from the want of this natural cleanser, they fall into disease. An artificial vomit, therefore, is very proper to be given now and then, and will greatly tend to prevent disease.

“ *Costiveness* is a great cause of disease in dogs: all animals living on flesh require very active exercise to carry off the contents of the bowels; when, therefore, dogs cannot be regularly exercised, they should have some vegetable food; or, if this cannot be given, they should now and then have an artificial purge.”

Upon the whole, we warmly recommend this little Treatise to the attention of all those who keep either of the very useful animals of which it treats, and doubt not but they will find it of great utility and assistance in the enabling them to alleviate, with little trouble and expence, those disorders with which they may be afflicted.

HISTORY.

National Transactions.

GREAT BRITAIN.

IN consequence of the activity of the French, an equal degree of activity is maintained among ourselves. It is generally believed that ministry has of late received some confidential information as to the time and places of the intended attack, and that the chief assault is to be hazarded on the Essex and Norfolk coast. Many strong measures have been taken accordingly; entrenchments are throwing up in a variety of the more vulnerable points; the Regulars are repairing to them in large bodies; and the supply of their places is to be immediately made from the Volunteer Corps.

On all the parts of the coast exposed to attack, alarm-posts and beacons are already established, or ordered to be established; by means of which fifty thousand men can speedily be assembled at a given point. Waggon are appointed for the conveyance of the sick, the women, and the children, towards the central dépôt; and orders are issued to destroy every article, on the first certainty of descent, which might be in any measure serviceable to the enemy.

In the other divisions of the British Empire such measures are likewise adopted as are most likely to frustrate any hostile attempt. For Scotland we think no apprehension need be entertained. Placed under the command of a nobleman equally distinguished for his experience, his talents, and his virtues, the steady loyalty of the inhabitants of that country, directed by the Earl of Moira, will be a sufficient security. Lord Cathcart has been appointed to the chief command in Ireland, doubtless the most vulnerable part of the United Kingdom, for the defence of which it is understood that a considerable body of troops will be spared from England.

Many of the Volunteer Corps have since been brigaded; and amongst all of them the most active exertions are daily making to acquire the skill and facility of regular regiments, and the whole of those belonging to the metropolis were reviewed by his Majesty on the 26th and 28th ult.

Let the turbulent Ruler of France, therefore, make his attempt whenever he may, and with whatever body of forces, we have no doubt of the issue. We are sorry to find the idea still pertinaciously adhered to among many persons, and especially those who have been long connected with the Regulars, that the service of our Volunteer Corps is not likely to be very effective when exposed to the experienced troops of France. We see no reason for their being thus disparaged; they have now nearly acquired a sufficiency of discipline for any service; and the motives by which they are stimulated, and that in an infinitely higher degree than any troops of the line can generally feel, will alone be competent to make a hero of every man.

We rejoice, therefore, that Government seems resolved to repose itself with confidence upon this spirited defence of the people; and we have full reason for supposing this to be the fact, from a plan which seems to be in agitation for making a powerful diversion upon the hostile country, the moment the French commence the attack upon ourselves. It is, as we may rationally conjecture, to this effect, that orders have been sent to Plymouth in the course of the past week, to prepare stores for not less than twenty thousand tons of shipping; by which means 50,000 men, at least, may be conveyed to any given point. And if ever a diversion of this kind which we hence suspect, and most unquestionably recommend, has a chance of being attended with success, it will be at a period when this country will be first subject to an assault. We ought not, however, to spare so large a body till we are morally certain we shall not stand in need of their assistance ourselves; but it is at least prudent in us to make timely preparation for their departure at a moment's warning; and the more so, as we doubt that we shall be able to dispense with their services.

Elfi Bey, the principal Chief of the Egyptian Mamelukes, has lately arrived in this country for the purpose of soliciting its interference in behalf of the Mamelukes with the Porte. The services they rendered to our army in Egypt are well known; and the reception which Elfi Bey has every where experienced is, in consequence, highly flattering and distinguished.

FRANCE.

Our intelligence from the interior of this Republic (received by the way of Hamburgh) has not been of great importance in the past month: we merely learn, that all is still in motion towards the coasts that flank the English Channel; that Lorraine, Alsace, and Burgundy, have been emptied of troops, for the purpose of completing the English expedition; that a part of the Army in Hanover has been ordered towards the Dutch frontiers. General Berthier has the chief command over all these preparations, which will, it is said, be inspected by Bonaparte in person. We are likewise informed that the naval preparations for the enterprise are very extensive, and in a state of great forwardness; that, independently of the vessels already prepared in Holland, four sail of the line, two frigates, and several smaller ships of war, were instantly to be put into commission in that country; that in Belgium upwards of a hundred merchant ships had been collected at its different ports, for the purpose of conveying troops; that Admiral NEILLY had been appointed to the command of the flotilla at Ostend, but that the whole was to be under the immediate orders of Admiral BRUIX.

Notwithstanding these accounts, it does not appear that the expedition projected against us is possessed of an extent by any means so formidable as that which has generally been conjectured. At Brest there is unquestionably a great deal of bustle and preparation; and to this point we may direct our eye as to the focus of the impending mischief: but in all the Dutch ports we learn, from the account of our cruisers, that there is nothing very formidable or extensive to be

traced. We have no doubt, however, of an attempt, and that a speedy one; but we have long been convinced, that BONAPARTE has it not in his power, even upon his own official statement of his forces, to bring against us more than one hundred, or one hundred and fifty thousand men; of which half at least would necessarily perish in the enterprise; his own extensive domains, and the danger he would risk by his own absence from internal commotions, and the insurrections of his coerced Allies, requiring, on different parts of the Continent, a distribution of not less than three hundred thousand men to insure his personal safety and aggrandizement.

It seems to be the general idea, that Bonaparte has already met with some rebuff in his prospect of invasion—some maintaining that great numbers of the conscripts have refused engaging in the expedition—others, that the gun-boats for this purpose have been built so slightly that they will not bear even the recoil of their own artillery, without shattering to pieces—and a third party, that the Chief Consul never has possessed any serious intention of crossing the Channel, otherwise than towards Ireland. For ourselves, we have no doubt of the attempt being hazarded upon Britain as well as Ireland; he has pledged himself to the Republic, and to the world at large, that he will undertake it, and he has been fully flattered into the belief of eventual success. It is probable he finds himself mistaken in the plans he has hitherto projected; and it is necessary for him, therefore, to try something new, in the execution of which the boats already built may be still perhaps made useful. That their construction is still persisted in we know, from dispatches received no longer ago than Friday last from Sir James Saumarez, dated Guernsey Road, the 17th inst. and which bring intelligence, that on the night of the 28th ult. seventeen flat-bottomed boats had sailed from Granville, and got into a small port to the eastward, from whence they proceeded the following night to Dieppe. They kept so close in shore, that it was impossible to get near them, and were escorted along the coast by a demi-brigade of dragoons.

ITALY.

From the increase of French troops and French marine in this quarter, it would certainly appear that BONAPARTE has some serious intention of an expedition up the Mediterranean. The army in this department alone is calculated at not less than 60,000 men; and, to add vigour to their operations, the Italian Republic has been compelled to perform the ridiculous farce of publicly declaring war against Great Britain. Whether the expedition alluded to above be destined to act against Egypt, or against the Morea, we have no means of ascertaining; the latter is the avowed point of attack, though the distracted state of the former unquestionably creates a bait so tempting, that nothing but want of power must prevent the First Consul from hazarding his fortune in this quarter a second time.

SPAIN AND PORTUGAL.

There is now little doubt that both these kingdoms are on the point of uniting with the enormous power of France. An embargo

of a mysterious nature is already laid on all British ships clearing out for the ports of the former, and it is generally supposed that the war will soon extend to both of them. The Oporto fleet, richly laden with wines, has just arrived safely.

A meeting of the English factors resident at Lisbon, has been held, and it was generally determined that all English property should be immediately embarked, from a full persuasion that the negotiations at present carrying on between France, Spain, and Portugal, would terminate in general hostility to England. We wish the merchants may not be already too late, and that an embargo may not have been determined upon before vessels can have been prepared for this purpose. The fate of Portugal we have long looked upon as settled.

THE OTTOMAN EMPIRE.

TURKEY is still in a high degree of confusion, with little prospect of any return of settled quiet. In Egypt the Mamelukes had some time ago obtained a decided superiority; but here again the scale of victory seems to have changed sides, in consequence of the declaration of the Pacha of Acre in favour of the legitimate government. The Pacha has since attacked the rebel force under ABDUL WECHAB, routed it in every direction, saved Damascus, and recaptured Mecca. In Romelia also the insurgents have sustained a single defeat; and were the Turkish Government possessed of any degree of energy, it might now in some measure be at liberty to provide a check against the menaces of the French Republic. But such is the weakness and instability of every thing, which relates to the Porte, that perhaps the very next accounts may inform us that the Turks have again been defeated, and the Mamelukes obtained a more extensive possession of Egypt than ever. The cause of the latter we may however suppose to be at a low ebb, from the arrival of ELFI BEY, for the purpose of soliciting the interference of the British Government in their behalf.

AMERICA.

We are concerned to state, that the severe scourge of the United States (the Yellow Fever) has recommenced its ravages at New York; and that the average destruction in this city, from this calamity alone, was not less than fourteen deaths in a day, according to the accounts which have lately arrived, and at that time without any prospect of its diminution. Some misunderstanding is supposed to be likely to ensue between the Government and the Chief Consul of France—the former pretending to expect that East Florida was to be included in the late purchase of Louisiana, and the latter denying all ground for such an expectation. We rather apprehend Mr. JEFFERSON is principally desirous of enlarging the boundary transferred by the French Republic, from some dissatisfaction having been expressed in many of the provinces at the high price he consented to give for the settlements.

WEST INDIES.

Accounts from Jamaica state the Admiral of the French naval force at St. Domingo, with two sail of the line and a frigate, left the Cape on the 25th of July, hoping to escape; that the Vanguard had captured one of the line-of-battle ships called *Le Duquesne* (which arrived at Port Royal on the 29th), and the *Elephant* was left engaged with the French Admiral's ship, of 74 guns.—American papers, likewise dated 1st of September, contain the information that the British squadron had fallen in with the French fleet from St. Domingo, and captured nine sail, consisting of ships of the line and frigates.

Of the correctness of this intelligence we entertain no doubt. We are yet, however, to learn whether General Rochambeau was on board the French squadron; but if he still remains at the Cape, it is highly probable, abandoned as he is by his Government, pressed in all points by numerous troops of the Blacks, and now destitute of all hope of supplies from America, in consequence of the strictness of our blockade, that he must either attempt his escape by stealth, or give up the French troops and stores to our squadron.

It appears that such is the distress of the French planters and traders at Port-au-Prince, that, despairing of keeping possession of that place, they have offered to surrender it to our Government. A letter from Kingston, dated also the 30th of July, says:—"The French cartel schooner *Two Friends*, from Port-au-Prince, in six days, arrived yesterday at Port Royal. We learn that she brings dispatches for his Excellency the Commander in Chief, and a deputation from the principal planters and merchants at that place, who are instructed to endeavour to obtain permission for them to be received in this island, and offering to give possession of Port-au-Prince to our troops."

There are some grounds to believe that an attack is meditated against the island of Martinique. Capt. Felt, who arrived at Salem from Martinique, had, according to the Boston Paper, brought intelligence that several British ships of war were lying off that island on the 2d of August, and it was supposed they were waiting the arrival of reinforcements from England.

Agriculture.

Essex Agricultural Society.

At the anniversary of this society, held at the Shire-house, in Chelmsford, on Monday the 25th September, 1803,

The Right Hon. Lord Petre, in the Chair, after appointing the officers for the ensuing year,

IT WAS RESOLVED,

That Mr. James Fairchild, of Pitsea, be allowed the silver medal, for drilling one hundred and four acres of wheat, the crop of the year 1803, and one guinea for James Goldstone, the drill-holder.

That Mr. William Coleman, of Great Buddow, be allowed the silver medal, for drilling forty-six acres of wheat, the crop of the year 1803, and one guinea for the drill-holder.

That the following premiums to labourers be allowed at this meeting:

First Class—To James Perryn, of Broomfield, having brought up ten children—one guinea.

To James Wisby, of Sandon, eight children—one guinea.

To John Harrington, of High Easter, eight children—one guinea.

To Benjamin Litchfield, of Witham, five children—one guinea.

Second Class.—To John Young, servant in husbandry to Mr. Thomas Beardwell, of Little Waltham, having lived nine years in the same service—one guinea.

To Thomas Stebbing, servant in husbandry to Mrs. Mary Laking, Chelmsford, six years—one guinea.

To Richard Beadle, servant in husbandry to Mrs. Sarah Bates, Fifield, eighteen years—one guinea.

One certificate not allowed, and one premium not applied for.

Third Class.—To Elizabeth Bernard, servant to Abraham Bullin, Esq. of Great Baddon, having lived twenty-five years in the same service—one guinea.

To Martha Nunn, servant to Dr. Challis, of Heybridge, twenty-four years—one guinea.

To Ann Coleman, servant to Mr. James Milbank, of High Easter, twenty-four years—one guinea.

To Rebecca Beauty Adams, servant to Mrs. Martha Pritchard, of Braintree, twenty-two years—one guinea.

To Mary Surrage, servant to Mr. J. Perry, of High Easter, nineteen years—one guinea.

Fourth Class.—To Ann, the wife of William Crow, of Great Waltham, having worked in husbandry one hundred and sixty-three days in the course of the year—one guinea.

To Susannah, the wife of Thomas Hakeling, of the same place, one hundred and ninety-three days in the course of the year—one guinea.

Three premiums not applied for.

ALSO RESOLVED,

That premiums for dibbling and drilling in the ensuing season be allowed as follows, viz.

To the person who, for the crop of the year 1804, shall dibble in the greatest number of acres of wheat, in proportion to the whole quantity of land sown with that grain, so that the same be not less than twenty acres—the silver medal.

To the person who, for the crop of the year 1804, shall dibble in the greatest number of acres of any other corn, in proportion to

the whole quantity of land sown with such corn (except beans), so that the same be not less than forty years—the silver medal.

To the person who, for the crop of the year 1804, shall drill in the greatest number of acres of wheat, in proportion to the whole quantity of land sown with that grain, so that the same be not less than twenty acres—the silver medal.

To the person who, for the year 1804, shall drill in the greatest number of acres of any other corn, in proportion to the whole quantity of land sown with such other corn, so that the same be not less than forty acres—the silver medal.

And that the drill-holders of the successful candidates be allowed one guinea each.

No claim to be admitted for any of the crop-premiums, unless a certificate be delivered to the secretary, fourteen days previous to the general meeting for the distribution of prize, stating the number of acres dibbled or drilled by each candidate, and signed by two respectable farmers in that district.

Chelmsford, Sept. 26, 1803.

J. GOULDING, Secretary.

Berkshire Agricultural Society.

This society announced for distribution, at their meeting at Wantage, on the 8th of October, the following rewards:

PLOUGHS.—To the owner of the best-constructed plough, that shall be worked by the best and cheapest team, either of oxen or horses, a piece of plate value 10l.

PLOUGHMEN.—To the best, two guineas.

To the second, one guinea.

To the third, half a guinea.

	£.	s.	d.
CATTLE. —For the best fat cow which shall have been kept in Berkshire for the last year	3	3	0
For the best boar kept and used in Berkshire, from Christmas to October	2	2	0
For the best two-year-old heifer	2	2	0
For the best cart colt	5	5	0
TURNIPS. —To the owner, being a member of this society, who shall, in October 1803, have the best crop of turnips, not less than five acres; three poles of which shall be selected and weighed in the presence of two members of this society—a piece of plate, value	5	5	0
COTTAGERS. —To the cottager who shall, in the course of the year 1803, have had the largest stock of bees, the number of the hives and swarms to be certified by a member of this society			
REAPING WITH SICKLES. —To the young man, under twenty-one, who has reaped the greatest quantity of land with a sickle, never having used one before the year 1803	2	2	0
To the young woman, under twenty-one, the same reward.			
HUSBANDMEN. —To the labourer in husbandry, who has reared the largest family without relief from the parish	2	2	0

	£.	s.	d.
To the second	1	1	0
To the third	0	10	6
SERVANTS IN HUSBANDRY.—To the man servant in husbandry, who has lived the greatest number of years in the service of any member of this society, or his predecessors, and now in the service of such member			
	2	2	0
To the second	1	1	0
To the third	0	10	6
For encouragement of ten of the most industrious persons in husbandry, who, labouring under any bodily infirmity, have continued to work, notwithstanding such infirmity,			
	0	10	6
To the parent who shall prove to the committee that his children, under twelve years of age, have been most usefully employed in husbandry			
	1	1	0
The committee reserves the power of withholding any of the prizes, if the candidates shall not produce any thing worthy of reward, and particularly so in regard to the ploughs.			
<i>Newbury, Sept. 27, 1803.</i> BUDD and GRAY, Secretaries.			

On Saturday, October 8th, being the Vale Meeting of the Berkshire Agricultural Society, the first ploughman's prize was adjudged to James Dicks, the servant of Lord Folkestone, who made the best work with a pair of horses, and without a driver. The plough was of the kind chiefly used in Norfolk, and was deemed to follow the horses very well, but to make no better, and indeed not so good or clean a furrow as the Berks ploughs. The thanks of the meeting were voted to Lord Folkestone, for having so fairly brought in competition the Norfolk with the Berkshire ploughs. The ground ploughed was about a quarter of an acre, and was finished by each plough and a pair of horses in one hour, with apparent ease. The second prize was adjudged to Thomas Lewis, Mr. Trinder's ploughman; and the third to Mr. Whitehorn. Mr. Geering, of Uffington, had the prize for the best cow; Mr. Belcher, of Wantage, for the best boar. John Atkins, of Compton, for a service of sixty-four years with Mr. John Pottinger, of Compton. John Edwell, of Sulton, for one of forty-three years, with Francis Justice, Esq. and Thomas Edwell, with the same gentleman, for thirty-nine years, obtained the premiums for long service.

The usual premiums were distributed to deserving labourers. Mr. Allen, of East Hundred, obtained the plate for the heaviest crop of turnips, weighing upwards of twenty-two tons to an acre.

Barnardcastle Agricultural Society.

The following premiums were announced by this society to be adjudged at its meeting at Barnardcastle, on the 5th of October:

	£.	s.	d.
For the best two-year-old heifer, in calf	2	2	0
For the five best shearing gimmers	2	2	0
For the best tup	2	2	0

	£.	s.	d.
For the best horned tup of the moor breed	1	1	0
For the best crop of turnips on the drill husbandry, not less than four acres	3	3	0

Castle Howard show of Cattle and Sheep.

On Wednesday, September 28th, was held at Cattle Howard inn, the annual show of cattle and sheep, produced on Lord Carlisle's estates in the neighbourhood of Castle Howard; when the following premiums were given by his Lordship for the best stock, as approved by Mr. Proude, of Hovingham, Mr. Wright, of South Holm, and Mr. Taylor, of Whitewell, who were appointed judges on the occasion.

	£.	s.	d.
John Barker, of Fryton, for the best two-year-old ram	2	2	0
Ditto, of ditto, for the second best ditto	1	1	0
Ditto, of ditto, for the best tup lamb	1	1	0
Thomas Addison, of North Ings, for the second best do.	1	1	0
John Barker, of Fryton, for the best female shear sheep	1	10	6
Thomas Hoggard, of Bulmer, for the second best ditto	0	10	6
Thomas Bickers, of Mawthorpe, for the best two-year-old bull	2	2	0
Thomas Bradshaw, of Ganthorpe, for the second best ditto	1	1	0
Jonathan Hicks, of Terrington, for the best one-year-old bull	2	2	0
George Thompson, of Slingsby, for the second best ditto	1	1	0
Mr. T. Forth, of Welborn, for the best two-years-old heifer	2	2	0
Phineas Hardy, of Terrington, for the second best ditto	1	1	0
John Percy, of ditto, for the best year-old heifer	2	2	0
Mr. T. Forth, of Welborn, for the second best ditto	1	1	0
Phineas Hardy, of Terrington, for the best pair of two-years-old oxen	1	1	0
Thomas Potter, of ditto, for the best pair of one-year-old ditto	1	1	0
Thomas Blanchard of Bulmer, for the best boar	1	1	0
John Hamilton, for the best sow	1	1	0

Lord Mulgrave's Premiums.

On the 3d of October, the Right Honourable Lord Mulgrave distributed his annual premiums among his tenants and cottagers. The rewards to the tenants for the best management in different branches of husbandry consisted of silver cups and medals of different value. To the cottagers, the rewards were substantial, and to them of great value. To the cottager who had brought up the greatest number of children, and given to them a religious and useful education, and without any parish relief—a good milch cow. To the second most deserving cottager under the same regulations—a milch cow also; and a suit of clothes to the third. As his Lordship has given gardens to his cottagers, rewards were given to those who had their

gardens in the best condition, and had rendered them most productive in useful vegetables; their rewards were cloaks, bonnets, and ribbons.

In delivering the several rewards, his Lordship accompanied each with an excellent and suitable exhortation. He recommended to the successful candidates perseverance in industry, while at the same time he soothed and encouraged such as were disappointed.

Though this is only the second year, the advantages of this institution are already visible on his Lordship's estate. It excites a happy spirit of emulation in every farmer; good management is sure to meet with approbation and reward, and the sloven will be exposed, and in the end punished. In a moral and religious point of view it is still more important. It will become an annual review, not only of the industry, but also of the morals of every one connected with the estate. Industry, and a spirit of independence will be cherished, and idleness and dissipation checked. His Lordship's amiable lady enjoyed much this delightful entertainment. The whole concluded with a most hospitable dinner at Mulgrave Castle, for his tenants and cottagers.

Roscommon Farming Society.

The show was held the 22d of September, when the following prizes were determined:

EARLY TILLAGE.

	£.	s.	d.
<i>Class 27.</i> Early potatoes, Mr. Malachy Maden, premium	3	3	0
29. Ditto oats, Mr. Nathaniel Nevill	3	3	0
30. Ditto barley, Mr. Keary	3	0	0

Cattle—Country-bred.

BULLS.

31. Best bull, three years old and upwards, Christopher Taaffe, of Grange, Esq.	5	0	0
33. Best bull, three years old, C. Taaffe, Esq.	5	0	0
34. Best of prize bulls, C. Taaffe, Esq.	5	0	0

COWS AND HEIFERS.

35. Best cow with her calf, Charles Hawkes, of Briarfield, Esq.	5	0	0
36. Best cow, four-years old (no competitor), C. Taaffe, Esq.	5	1	0
37. Best heifer three years old, John Brown, of Mount Prospect, Esq.	5	0	1
38. Best heifer, two years old, C. Taaffe, Esq.	5	0	0
39. Best heifer, one year old, John Brown, Esq.	5	0	0
40. Best of the prize cows and heifers, J. Browne, Esq.	5	0	0

STEERS.

	£.	s.	d.
<i>Class</i> 42. Best steer, two years old, Henry Corr, Esq. of Durham	2	0	0
43. Best steer, one year old, C. Taafe, Esq.	2	0	0
44. Best of the prize steers, H. Corr, Esq.	2	0	0

SHEEP.

45. Best ram, two years old, C. Taafe, Esq.	5	0	0
46. Best ram, one year old, C. Hawkes, Esq.	5	0	0
47. Best of the prize rams, C. Taafe, Esq.	5	0	0
49. Best pen of hoggel ewes, ditto	5	0	0
50. Best prize pen of ewes, ditto	5	0	0

PIGS.

51. Best boar, two years old—no competitor— Mr. Geoghegan Lynch	2	0	0
52. Best boar, one year old, Rev. T. Radcliffe, of Cattle Coote	2	0	0
53. Best boar, six months old, Mr. G. Lynch	2	0	0
54. Best prize of boars, Rev. T. Radcliffe	2	0	0
56. Best sow, one year old, ditto	2	0	0
57. Best sow, six months old—no competitor— Rev. Mr. Radcliffe	2	0	0
58. Best of the prize sows, Rev. Mr. Radcliffe	2	0	0

SEED CORN.

59. Best barrel of seed wheat, Rev. Mr. Radcliffe	5	0	0
60. Best barrel of seed oats, ditto	3	0	0
61. Best barrel of seed barley, Mr. G. Lynch	3	0	0

JOHN BROWNE, Secretary and Treasurer.

Society of National Economy of Harlem.

At a late general meeting of this Society, the following questions were proposed :

What kind of nettle can be employed in making thread? The memoir must mention the country which produces it, the time of gathering, and describe the methods of preparation. It must likewise be accompanied with twenty-five pounds of thread made with that plant; the prize will be twenty-five ducats, and it will be augmented, if, instead of twenty-five pounds, fifty be presented to the Society.

The subject for the second prize is: Can the acorn be employed in domestic economy, for making oil, as a substitute for coffee, &c. and what is the best method of preparing it? The prize is six ducats.

The third question is: What is the present state of public and private economy in Holland?

The fourth relates to the best method of preventing or curing the rot in sheep. The prize is twenty-five ducats, and fifty for the person

who shall point out the cause of this disease, and the method of preventing it. All the above memoirs must be transmitted to the Secretary of the Society before the 29th of September 1804.

Millet being little cultivated in Holland, as no good method is yet known for separating it from the chaff, the Society offers a prize of twenty-five ducats to the inventor of a machine proper for that operation, and by means of which the millet can be as well cleared as that imported from other countries.

A specimen of wool has been brought by the Glatton, from New South Wales, which is deemed superior in point of softness, and in all other respects equal to the best Spanish wool, and worth here about 6s. per lb. The sheep producing it were originally sent from Spain to the Cape of Good Hope, and thence to Port-Jackson. Captain M^r Arthur, who has devoted much attention to improve his flock in this Colony, has now about 4000 sheep, with Spanish rams: he calculates, that with proper care, the number will double itself every two years and a half; and that in twenty years his flock will be so much increased, as to produce as much fine wool as is now imported from Spain and other countries, at an annual expence of £1,800,000.

An exhibition of cattle lately took place at the King's Arms Inn, near Axbridge, Somersetsire, where Francis Edward Whalley, Esq. shewed a beautiful cow, of the Dantzic breed, against a Scotch cow, the property of Simon Payne, Esq. and the umpires decided in favour of Mr. Payne. Mr. Whalley also shewed a heifer (the get of his excellent bull, of French breed, which obtained a bounty from the Bath Agricultural Society), against a heifer of the West Galway and French admixture, and the umpires decided thereon in favour of Mr. Payne. Mr. Whalley likewise produced a sow of Chinese admixture, which was generally allowed to be well-proportioned, and likely to prove profitable. There were also exhibited very good sheep, of various breeds, particularly a ram and ewe of the Romney-Marsh, of great size and perfection of make, having wool of the long sort, of excellent quality. Mr. Payne produced oxen of the long-horned breed, which obtained a bounty at the last annual meeting of the Bath Agricultural Society; they were of extraordinary size, and deemed the neatest in tooth, and the best in symmetry, ever seen in the country; and offers were made to shew them against any oxen of their age in England.

A Frenchman, named Guller, has, it is said, discovered by many experiments, that elder has the property of preserving cabbages and cauliflowers from caterpillars, fruit-trees from blast, corn from the yellow fly, and turnips from all kinds of insects. The dwarf elder is stronger-scented than the other, and ought therefore to be preferred.

By letters from Quebec, of the 10th of September, we find that the season has been plentiful throughout British America, which is of the more importance, as in the United States it is below the usual average in point of quantity. In Upper Canada, in particular, the crops have been abundant, and the quantity

good. The most plentiful crop was pease, wheat next, but oats and barley were only reckoned sufficient for home consumption: the price of wheat at that time was 5s. 3d. to 5s. 6d. the Winchester bushel.

A polled cow, belonging to James Burleigh, Esq. of Barnwell, Cambridgeshire, lately brought forth three calves, all of which are now alive.

A remarkable three-shear ewe, of the real Lincolnshire breed, the property of George Chaplin, Esq. of Tathwell, near Louth, was slaughtered by Mr. J. Spicer, of Lincoln:—Weight, when alive, 265lb.—Carcase, when slaughtered, 176lb.—Offal and loose fat, 86 $\frac{1}{4}$ lb.

A very respectable farmer at Gaddefsden, in Herts, having found an ear of French barley, sowed its seed in his garden, the produce of which rather astonished him: he determined to pursue the experiment. The next year he sowed the produce of the first, in a piece of ground tilled for that purpose, which yielded bountifully; and the third and fourth year's produce exceeded any thing of the kind he had ever seen or heard of before, being upwards of twenty sacks of pure grain.

In the spring, a gentleman of St. Audries, in the county of Somerset, planted fourteen grains of Spanish barley, which produced two hundred and seventy-one ears (upon an average, nineteen stalks to a grain, and five over), containing, exclusive of loss by birds, &c. 14,630 corns of an excellent quality.

At Stains fair, there was a very considerable shew of pigs, and the prices demanded, both for the store and other kinds, much lower than they have been for some time past: a great number are nevertheless driven away unsold. There were but a few horses, and those any way fit for draught or saddle, obtained high prices, the latter in particular.

At Reading fair the supply of cheese was greatly deficient to that of former years; the whole quantity pitched, amounting to little more than 300 tons: the consequence, as might naturally be expected, was, that it fetched a high price; new cheese sold from 56s. to 80s. per cwt. old from 78s. to 88s. The shew of horses was not large; those in any way fit for the cavalry, were eagerly bought up; but those of the east kind was rather lower than at the neighbouring fairs. Cow cattle maintained their former prices.

At the close of Bury butter and cheese fair, prime dairies were sold from 66s. 6d. to 69s. and some as high as 70s. per firkin. A considerable quantity was left on hand, from a refusal to comply with the above excessive high prices. Best two-meal cheese from 7d. to 7 $\frac{1}{2}$ d.; flet, 3 $\frac{1}{2}$ d. to 4d. per lb.

At Ipswich fair, prime dairies of batter were sold from 67s. to 69s. per firkin, and some few as high as 70s.—At the fairs of Braintree and Billericay, in Essex, there were large shews of cattle, particularly of the South Whale kind; but though they were offered at prices considerably reduced, the principal graziers made but few purchases.—At Braintree fair, hops sold from 5l. 5s. to 5l. 10s.: and butter, 3l. 13s. 6d. per firkin.

The sheep and lambs at Cliffe fair, Suffex, fell many pens short of last year, and did not together exceed in number 27,000. Such a dull fair has not been witnessed for many years before. Those who sold early got the best prices. Wethers fetched from 28s. to 34s. Ewes from 10s. to 34s. Ewes from 16s. to 30. and lambs from 9s. to 20s.

At Weyhill fair there were about 12000 pockets of hops, which were all sold at advanced prices, much beyond what was ever expected by the planters; fine Farnhams, fetched 9l. and some few higher; Crocwall and country hops, from 6l. to 8l. 8s. A quicker sale was never known; and considering the quantity, it astonished the oldest and most experienced in the trade—Cheese was in great plenty, and fell from 6s. to 8s. per cwt. at the close of the fair. horses, of which there was a great shew, fetched high prices.

At Howden fair, horses of all descriptions sold uncommonly high, several hunters from 100 to 200 guineas, and active useful hackneys or roadsters went off readily at 40l. It is conjectured that there were horses shown at the fair, to the collective value of £10,000. Cattle experienced a trifling advance. Pigs were very plentiful, and sold on moderate terms.

At Skipton fair, fat cattle declined from 18 to 20 per cent. on an average, and great numbers were driven away unfold.

At Brough-Hill fair, in Westmoreland, horses calculated for cavalry, sold at high prices; but other sorts were much lower than formerly. Black cattle and sheep of a good size, and in good condition, sold at good prices. All kinds of small cattle were little in demand. Great numbers went from the fair unfold.

At Selmerton fair, Suffex, there was a large shew of sheep and horned cattle; but the buyers were very few, notwithstanding the prices were much inferior to those of last year. Wethers fetched from 28s. to 32s. ewes, 25s. to 26s. lambs, 14s. to 17s.

Croydon fair, notwithstanding the unfavourable weather, was very much crowded. The shew of sheep was considerable, and there were many good horses, which sold at high prices.

In Exeter market, on the 14th of October, there was such an abundance of prime pork, that a great deal of it was sold at the low rate of 4d. per lb.: good roasting pigs of 13lb. weight were 3s. each; a good round of beef might be bought at 5½d. per lb. There are indeed such multitudes of pigs, throughout the west of England, that the price of butchers meat, in consequence, experiences a considerable reduction.

The late sheep fair, at Ballinasloe, in Ireland, was the greatest ever remembered, upwards of 110,000 having been brought thither, About 70,000, were disposed of at prices nearly 15s. per head under those of the last year. Black cattle sold very dear, 50s. per cwt. being refused for prime lots.

At Leicester fair, there was a large shew of sheep and cattle; the former of which were generally sold at reduced prices. Prime beef had a ready sale; but half-meated cattle were not to be disposed of. Cheese, from 60s. to 72s. per cwt.

At Stirbitch fair hops were plentiful, the prices from 5l. to 6l. in pockets, and 4l. 15s. to 5l. in bags. The prices of cheese were, Derbyshire 78s., single Gloucester 70s., double Gloucester 90s., and Cheshire 84s. to 88s. per cwt. Best Cottenham 8s. per stone.

At Ross fair there was but a very thin show of cattle, and the sale was dull; but the few fat beasts which were offered sold at good prices. There were very few horses or sheep. The quantity of cheese on sale was very considerable, and sold high—best making from 4l. 4s. to 4l. 10s. and two-meal from 3l. to 3l. 12s. per cwt.

At Gloucester fair the show of horses was but small, but those brought were good; what were there, however, sold at high rates, as did those of the nag kind, and such as were fit for the cavalry service. Cattle met a heavy sale, and were somewhat reduced in price. Pigs also were much lower, and very plentiful. Cheese was high—best making sold at 75s. to 82s. and second from 56s. to 60s. per cwt. Onions averaged as much as 2s. per peck.

Stewartry of Kirkcudbright Annual Competition and Show of Black Cattle and Sheep.

At a meeting of the Committee appointed by a general meeting, on the 30th of April last, for fixing and distributing the sum of fifty guineas, in premiums, for encouraging the amelioration of the breed of black cattle and sheep in the Stewartry held at New Galloway, on the 23d of June, in consequence of public intimation by Mr. Gordon, the convener, that the competition, or show of tups, would take place there that day; the judges appointed for the premiums given by the Trustees for Fisheries, Manufactures, and Improvement, for tups two years old rising three, were—

Mr. M'Caa, in Tower;
Mr. M'Lamburgh, in Garroch; and
Mr. James Cannan, jun. in Shield.

And the Committee made choice of the following judges, for the premiums to be given by the Stewartry, for tups two years old rising three, or three years old rising four, viz.

Mr. Mitchell, in Muirbrack;
Mr. M'Caa, in Tower; and
Mr. Donaldson, in Duchrae.

These judges having minutely and carefully examined the different tups exhibited at the show, which they reported to be the best and fullest attended they had seen there, unanimously adjudged the Trustees' premiums as follows:—

	£.	s.	d.
To Mr. Robert M'Millan, in Palgowan, for the best six tups, two years old, the first premium	8	0	0
To Mr. Moffat, of Drumwhirn, for the second best six tups, two years old, the second ditto	6	0	0
To Mr. Robert Gibson, in Troquhain, for the third best six tups, two years old, the third ditto	2	0	0

And the Stewartry premiums, to two and three years old, as follows:—

To Mr. William Barber, in Bogue, for the three best tups, the first premium	6	6	0
To Mr. M'Millan, in Palgowan, for the three second best tups, the second ditto	4	4	0
To Mr. Moffat, at Drumwhirm, for the three third best tups, the third ditto	2	2	0

And at another meeting of the said Committee, held at Kelton-hill, on the 15th of August last, in consequence of a public intimation that the competition, or show of bulls and cows, and their calves, was to take place there that day; the Committee made choice of the following gentlemen, to be judges of the different cattle competing for the different premiums:

Mr. Mure, factor to the Earl of Selkirk;
 Mr. James Henry, in Bishopton;
 Mr. James Breckonridge, in Cawston;
 Mr. William Beck, in Balmangan;
 Mr. Ebenezer Halliday, in Loch-Dongan;
 Mr. James Weir, in Scroggiehill; and
 Mr. William Broadfoot, in Barharrow.

The judges having minutely and carefully examined the different bulls, and the respective lots of two cows and their calves, and the different single cows and calves exhibited, unanimously adjudged the premiums as follows:—

	£.	s.	d.
To Mr. A. Williamston, in Ingliston, for the best bull, the first premium	10	10	0
To Mr. Walter Crichton, of Boreland, for the second best bull, the second ditto	5	5	0
To Mr. James Murrie, in Balig, for the third best bull, the third ditto	3	3	0
To Mr. John Kirkpatrick, in Leaths, for the two best cows and their calves, the first premium	8	8	0
To Mr. Alexander Smith, in Kirkchrist, for the second best two cows and calves, the second do.	3	3	0
To Mr. William Brown, in Asgrennan, for the best single cow and calf, the first premium ..	5	5	0
To Mr. A. Melville, of Barwhar, for the second best single cow and calf, the second ditto	2	2	0

All which having been laid before the Committee, they approve thereof, and authorise and direct the collector of the cess for the Stewartry to pay these different premiums out of the money collected by him for that purpose.

The competition for the premiums given by the Highland Society, for improving the breed of black cattle, in Scotland, was lately held at Charles fair, of Huntly. There was a large show of very fine cattle; the judges adjudged the first premium to be gained by the Marquis of Huntley's branded two-year-old bull; and the second premium, by Mr. Bogue's branded bull.

Newark Agricultural Society.

A meeting of this Society was announced to be held on the 18th of October, at the Saracen's-head inn, Southwell, when the following premiums were to be adjudged to the persons who should plough in the best manner, with two horses a-breast, half an acre of land for wheat seed:

	£.	s.	d.
To the best ploughman	3	3	0
To the second best	2	2	0
To the third best	1	1	0
To the best ploughboy (under 18 yrs. old)	1	11	6
To the second best	1	1	0
To the third best	0	10	6

The work was to be performed in a close at Fiskerton, belonging to John Brettle, Esq.

A premium of five guineas for the most effectual draining of land, upon the principles of Mr. Elkington, was also to be determined at the same meeting.

The Thrapston Association, in Northamptonshire, for the prosecution of felons, have provided and trained a blood-hound, for the detection of sheep-stealers. To prove the utility of the hound, he was lately tried. The person he was to hunt started at ten o'clock in the forenoon, in the presence of a great concourse of people, and at eleven the hound was let loose; when, after a chace of an hour and a half, notwithstanding a very indifferent scent, the hound found him secreted on a tree, at the distance of fifteen miles.

In the garden of Mr. David Knight, brewer, of Arbroath, Scotland, was lately dug up a potatoe of most extraordinary size; its largest circumference nineteen inches, the least seventeen inches; weight two pounds nine ounces; it is of the kind known there by the name of American Tartar, which are much prized as an excellent edible root. There were nine other potatoes at the same stem, weighing on an average sixteen ounces.

The orchards this year are likely to be more profitable, although they have, in some respects, been less productive than usual: there has been a greater number of apples than the oldest persons have known, but they are much smaller than they were two years since. This circumstance, however, adds to the excellence of their quality; they are, comparatively, all rind and core; and the uncommon dryness of the season, while it restricted their growth, made every one of them fit for superior cyder. Persons unacquainted with the manufacture of this liquor, will be surprised to learn, that the best of it is made from the kernel parts, and the peel cut rather thick; and that the intermediate part, even of the best apples, is used in making cyder of the second quality. There are great quantities of the prime cyder of 1801 in the counties of Gloucester, Hereford, and Monmouth, now fit to bottle: fine Monmouthshire will keep good for twenty years.

The want of rain has been productive of considerable inconvenience in many parts of England; the springs having been dried up,

vegetation has consequently been suspended, and the dairy farmers in particular have been obliged to fodder, which has already added to the price of hay. This inconvenience, however, has been happily counterbalanced by benefits more important: the crops, generally abundant, have been all well saved, and so favourable has been the sowing season, that the works which used to occupy not only the autumn and the winter, but part of the spring also, have been, in numerous places, already completed.

All accounts, says a letter from Newcastle, of the harvest in this district, agree, that the produce of wheat is far above an average crop, and the quality much finer than for many preceding years, weighing full 60lbs. per bushel, and being free from mildew. Rye and barley are also capital crops, and the colour of the latter is greatly superior to that of last year. Oats are estimated at one-third below an average crop, but the quality is very good.

At Nottingham fair there was little business done, owing to the wetness of the day, and that was chiefly in the horse and cattle market. Of horses there was but an indifferent show; those of the saddle-kind were principally in request, and fetched high prices, as did likewise fat beasts; but lean stock, on account of the scarcity of keep, hung heavily on the market at reduced prices, and a great number were driven away unsold. Pigs, from the great quantities in the country, were a very unsaleable commodity; this is to be attributed to the economical and highly-praiseworthy plan of almost every family keeping one or two, a measure that is likely to cause pork to be much lower during the winter. The supply of cheese was not very great, occasioned by the long drought; the prices, as might be expected, were high at the commencement of the fair—73s. being asked and given in some particular instances for prime dairies. A reduction, however, took place on the succeeding day, and the sale of all kinds was brisk; considerable quantities went off at prices from 63s. to 68s. the general average being about 65s. per cwt. Onions were not plentiful, and much smaller and dearer than last year.

Mansfield Fair was exceedingly well attended. Fat cattle rather declined in price; the lean kind were much the same. Cheese sold at prices from 3l. 8s. to 3l. 10s. per cwt.

COMMERCE.

Konigsberg, Sept. 6.

THE hostilities between England and France have put a stop to our corn-trade to Holland, which has also occasioned a considerable fall in our prices. Rye is fallen from 260 to 250 florins. Since the declaration of war the exportation has also been lessened, and only rye, barley, oats, and pease, have been sent to Denmark and Sweden. Of wheat and rye we have a vast quantity. This, added to the prospect of a plentiful harvest, will much more reduce the prices. Wheat lately fetched from 390 to 450 florins; rye 250 to 260; barley 190 to 210; oats 125 to 130; pease 250 to 280.

Sept. 15.—The wheat is very good and heavy, but its produce has been small. Rye is poor and light; so we cannot expect a considerable supply, and the prices are soon expected to rise again. At Elbing, 3000 lasts of wheat have been bought on British account at 500 florins per last. The prices of the new flax are not yet fixed. Fine flax of last year remains almost all unsold, and was lately sold at 14 to 16 florins per stone. Hemp is much sought; it now costs $12\frac{1}{2}$ florins per stone.

His Danish Majesty has issued a new ordinance respecting the goods permitted to be imported into, or exported from, the Duchies of Holstein and Sleswick. According to this regulation, the only articles prohibited to be imported, are foreign ware, plain or coloured, and burnt roots, beans, &c. used as substitutes for coffee.

Since the opening of the navigation of the Dniester, products to the amount of more than 50,000 roubles have been received at Cherson from different Russian Governments, consisting of hemp, cables, ropes, tallow, flax, linseed-oil, pitch, glass, mats, and various sorts of timber; wheat, rye, and pease. Most of these articles are sent to Odessa.

Of 899 ships arrived at Cronstadt this year, no less than 523 were British; the others consisted of 82 Americans, 73 Danish, 62 Lubeckers, 59 Prussians, 46 Swedish, 9 Russian, 8 Spanish, 4 Portuguese, 2 French, and 26 of other nations. The number which sailed amounts to 720, consisting of nearly the same proportions.

The accounts from the Isle of Mann respecting the herring-fishery, are of the most favourable nature. It had been successful in a considerable degree before; but the take of fish on one night lately was so great, it was deemed the most abundant ever known by the oldest person living. There were several boats which caught from 80 to 100 mazes each. The whole number taken is supposed to be not less than $5\frac{1}{2}$ millions, and the weight upwards of 800 tons. The estimate of fish sold at Douglas on the following morning at 3s. 4d. to 3s. 6d. per hundred, is 9000l.

Orders have been issued by Government to prohibit in Ireland, the distillation of spirits from oats; a measure rendered necessary by the failure of the potatoe crop.

The *Fanny*, of Greenock, which lately sailed from London for New-York, had on board a cargo of muslin, printed calicoes, and other cotton goods, valued at 100,000l. Of this sum, the original cost did not exceed 10,000l. so that no less than 90,000l. sterling had been paid in wages to workmen for the *Fanny's* cargo. As the money for these goods will not be returned for 18 months at least, (for the Americans take very long credit) this circumstance shows the impossibility of other nations interfering with us, as they have not capitals sufficiently large to make such advances. If the Government could prohibit the exportation of our cotton yarns, there is every probability that the trade of this country in cotton would be doubled.

Manufactures and Useful Arts.

M. BAUNAU, an apothecary, has observed, that the juice of the St. John's Wort, *hypericum perforatum*, which is known to very few dyers, may be usefully employed in their art. It is a resinous plant, the flowers of which are filled with seed, and contain a juice soluble in water, alkohol, and vinegar. In the two former it diffuses a red blood-colour, and in the latter the most beautiful crimson tint. When combined with acids or metallic solutions, it presents a beautiful yellow colour, which proves that it contains two kinds of colouring matter, one of which, the red, is more easily soluble than the other.

In order to dye linen cloth, wool, silk, and cotton, yellow, it is sufficient to plunge them in a bath, the water of which is impregnated with the juice of that plant, and a certain quantity of mordant. The salt best adapted for a mordant for this colour, is sulphurate of alumine mixed with a due proportion of pot-ash. The stuffs are left in it some time; for it is principally on the duration of the baths, the quantity of mordant, and the heat employed, that the solidity and colour of the tints resulting from it depend. When a small quantity of the mordant is used, the colour is a bright yellow; but, by augmenting it, the colour approaches to green, and by adding solution of tin in nitro-muriatic acid, it assumes the most beautiful rose, cherry, and crimson leaves. Alum, universally employed in all extractive dyes, is not sufficient in the present process; the addition of pot-ash is essentially necessary, because it decomposes that salt, precipitates the earth in it, dissolves a considerable portion of it, and it is this alkaline salt with an earthy basis that becomes the real mordant in this operation, as the colouring principle resides in a matter almost purely resinous. The juice of the St. John's Wort, mixed with the above mordant, gives a beautiful yellow colour to paper, and, as it produces the same effect on leather, it may be employed with advantage to dye the skins of sheep, &c.

M. Conté has discovered a method of preventing the oxydation of iron and steel, or, in the language of common life, to prevent those materials from rusting. This method consists in mixing with oil-varnish at least one half, or at most four fifths, of highly rectified spirit of turpentine, according to the greater or less degree of durability that is intended to be produced by it. This varnish is lightly and equally applied, with a sponge, to any article, after which it is put in some place out of the dust. It is asserted, that articles varnished in this manner preserve their metallic lustre, and never contract the smallest spot of rust. This varnish may likewise be applied to copper, the polish of which it preserves and heightens in colour. It must prove of particular advantage to preserve philosophical instruments from any alteration in experiments in which they are exposed to water, and consequently rendered liable to rust.

From the experiments of **M.** Vauquelin, it results that the ashes of buck-wheat are very rich in pot-ash, and may be employed with advantage in the glass-houses. The ashes of other vegetables contain only 18 to 20 per cent. of that alkali; those of buck-wheat contain 33, or nearly one third.

LONDON PRICES OF GRAIN for October, 1803.

MARK-LANE, Monday, October 3.

Price of Grain, on board Ship, as under.

WE last week were thought more sanguine in our report of the Corn Trade, than the sales justified, and that the Kentish factors could obtain no more than 5s. per quarter for their best Wheats. To-day our supply of Wheat was but moderate, with a good many buyers; the trade was rather brisk in the morning, but left off at last week's prices.

Barley has given way a little.

White Peas are still in request, and continue dear. Grey are cheaper

Tick Beans are plentiful, but with little alteration in price.

Oats, the supply being short, are dearer, say 1s. per quarter. Flour as last week.

Wheat	47s to 58s	Barley	20s to 24s 6d	White Peas	50s to 58s od.
Fine	59s to 61s od	Malt	50s to 56s od	Grey Peas	—s to —s od
Rye	30s to 32s 6d	Oats	23s to 29s	Sm. Beans,	35s to 39s od
		Polands ditto	27s to 28s od	Ticks,	30s to 35s od

Monday, October 10.

OUR supplies of Wheat to-day were very considerable, and chiefly from Essex and Kent. The sales were not very brisk, nor have we any variation to note in respect to prices.

The Maltsters beginning to work, Barley sells better than of late, but at no advance. Malt is still dull, and heavy sale.

Peas of different sorts are cheaper; as are Beans likewise.

Oats continue to arrive in plenty, and best samples fetch last week's prices.

Wheat	46s to 59s	Malt	50s to 56s 6d	White Peas	55s to 62s od
Fine	60s to 61s od	Oats	23s to 28s	Grey Peas	40s to 43s od
Rye	30s to 32s	Polands	29s to 30s od	Sm. Beans,	34s to 38s od
Barley	20s to 25s od			Ticks	30s to 34s od

Monday, October 17.

WE have some Dantzic Wheats arrived, and a middling supply of that article from the neighbouring counties; the trade was, upon the whole, dull, but not in a degree to alter prices from last Monday.

The Maltsters not finding a brisk market for their Malt, Barley has, in consequence, a very slack sale.

White Peas are reduced from 3s. to 4s. per quarter. Grey are 2s. lower.

Beans are likewise cheaper.

Oats continue an article of much traffic; we, however, have not many arrivals to-day, and they are 1s. per quarter dearer. Flour, a moderate supply.

Wheat	48s to 58s	Malt	50s to 56s 6d	Grey Peas	38s to 40s od
Fine	59s to 61s od	Oats	22s to 27s	Small Beans	33s to 37s od
Rye	30s to 32s od	Polands ditto	28s to 30s od	Ticks	30s to 34s od
Barley	20s to 25s od	White Peas	50s to 55s od		

Monday, October 24.

WE have a plentiful supply of Wheat to-day, and the buyers of that article pretty numerous; prices, nevertheless, except for very fine samples, have not mended since last Monday.

Barley is rather dearer, owing to the demand of the Maltsters, who are beginning to work. Malt remains at last stated prices.

Peas are a falling article. White are 4s. per quarter cheaper, and Grey 1s. ditto.

Beans are likewise rather cheaper.

Oats are a short supply, and 1s. per quarter dearer than last week.

Wheat	47s to 59s	Malt	50s to 56s 6d	Grey Peas	—s to —s od
Fine	60s to 61s od	Oats	23s to 29s	Small Beans	33s to 37s od
Rye	32s to 35s	Polands ditto	30s to 31s od	Ticks	30s to 34 od
Barley	21s to 26s od	White Peas	47s to 53s od		

Ag. Mag. Vol. 9.

S I

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

Price of Hops.	First Week		2d Week		3d Week		4th Week	
	s.	s.	s.	s.	s.	s.	s.	s.
Bags.								
Kent — —	90 to	106	90 to	106	90 to	106	90 to	106
Suffex — —	90 to	98	90 to	100	86 to	100	90 to	100
Essex — —	90 to	98	90 to	100	90 to	100	90 to	105
Pockets.								
Kent (new) — —	98 to	115	100 to	114	100 to	116	100 to	116
Suffex — —	96 to	110	96 to	100	100 to	110	100 to	110
Farnham — —	140 to	160	140 to	168	140 to	189	147 to	189
Seeds.								
Canary Seed (per bushel.)	10 to	11	10 to	11	10 to	11	10 to	11
Red Clover ditto —	40 to	135	40 to	112	40 to	105	40 to	108
White Clover, ditto —	70 to	112	70 to	112	70 to	115	70 to	112
Trefoil, ditto —	40 to	52	20 to	50	30 to	50	18 to	46
Carraway ditto —	40 to	44	40 to	44	40 to	44	40 to	45
Coriander ditto —	28 to	32	28 to	32	28 to	32	16 to	18
Turnip, (per bushel) —	18 to	24	18 to	24	18 to	24	20 to	26
Rye Grass, (per quarter)	— to	—	— to	—	— to	—	— to	—
Cinque Foil, ditto —	— to	—	— to	—	— to	—	— to	—
Rape Seed, (per last) —	—1 to	—1	—1 to	—1	—1 to	—1	361 to	391
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.
Beef — —	3 8 to	4 8	4 0 to	5 0	4 0 to	5 0	4 0 to	4 8
Mutton — —	4 0 to	5 0	4 4 to	5 0	3 8 to	4 8	4 0 to	5 0
Veal — —	4 0 to	5 4	4 8 to	6 0	4 0 to	5 6	5 0 to	6 0
Pork — —	3 8 to	5 0	4 0 to	5 0	4 0 to	5 8	3 0 to	4 4
Lamb — —	3 8 to	4 8	4 0 to	5 0	3 8 to	5 0	3 8 to	4 8
Head of Cattle—Beasts about	2,000		2,000		2,200		2,500	
— Sheep and Lambs	16,000		15,000		12,000		15,000	
Price of Leather.	d.	d.	d.	d.	d.	d.	d.	d.
Butts, 50lb. to 56lb. each	21 to	23	21½ to	22½	21½ to	22½	21 to	22
Ditto, 60lb. to 65lb. each	23 to	24	23½ to	24½	23½ to	24½	23 to	24
Merchants Backs —	21 to	21½	22 to	22½	22 to	22½	21 to	21½
Dressing Hides —	20½ to	22	20½ to	22	20½ to	22	20 to	21½
Fine Coach Hides —	23 to	24	22½ to	24	22½ to	24	22 to	23½
Crop Hides for cutting	22 to	23	21½ to	22½	21½ to	22½	21 to	22
Flat Ordinary —	21 to	22	21 to	22	21 to	22	20 to	21
Calf Skins, 30 to 40lb. p. doz.	28 to	32	28 to	33	28 to	33	27 to	32
Ditto, 50lb. to 70lb. do.	27 to	33	27 to	32	27 to	32	26 to	31
Ditto, 70lb. to 80lb. do.	26 to	28	26 to	28	26 to	28	26 to	28
Sm. Seals (Greenland)	42 to	45	36 to	42	36 to	42	44 to	46
Large do.	51 to	71	51 to	71	51 to	71	51 to	71
Tanned Horse Hides	16s to	30s	16s to	30s	16s to	30s	18s to	21s
Goat Skins per doz.	—s to	—s	—s to	—s	—s to	—s	—s to	—s
Price of Tallow.	s.	d.	s.	d.	s.	d.	s.	d.
St. James's Market —	4	6	4	6½	4	7½	4	7½
Clare Market — —	4	7	4	6½	4	7½	4	8
Whitechapel Market —	4	6	4	6½	4	7½	4	7½
Per stone of 8lb. Average	4	6½	4	6½	4	7½	4	7½
Town Tallow — —	77	0	77	0	79	6	78	6
Russia ditto (Candles) —	76	0	76	0	77	0	77	0
Russia ditto (Soap) —	71	0	70	0	70	0	71	0
Melting Stuff — —	65	0	65	0	65	0	65	0
Ditto rough — —	44	0	44	0	44	0	44	0
Graves — —	14	0	14	0	14	0	14	0
Good Dregs — —	12	0	12	0	12	0	12	0
Yellow Soap — —	84	0	84	0	84	0	84	0
Mottled ditto — —	92	0	92	0	92	0	92	0
Curd ditto — —	96	0	96	0	96	0	96	0
Candles, per dozen, —	12	0	12	0	12	0	12	0
Moulds — —	13	0	13	0	13	0	13	0

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

Raw Hides.	First Week		2d Week		3d Week		Week.	
	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
Best Heifers & Steers, pr ft.	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0
Middling — —	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6
Ordinary — —	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2	3 0 to 3 2
Market Calf — —	9 6	9 6	9 6	9 6	9 6	9 6	10 6	10 6
Egg. Horfe — —	14s to 16s	14s to 16s	14s to 16s	14s to 16s	14s to 16s	14s to 16s	14s to 16s	14s to 16s
Sheep Skins — —	2 0 to 3 6	2 6 to 4 0	2 0 to 3 6	2 0 to 3 6	2 0 to 3 6	2 0 to 3 6	2 0 to 3 10	2 0 to 3 10
Lamb Skins — —	2 0 to 3 3	2 0 to 3 6	2 0 to 3 6	2 0 to 3 6	2 0 to 3 4	2 0 to 3 4	2 0 to 3 6	2 0 to 3 6
<i>Prices of Hay and Straw.</i>								
St. James's—Hay —	4 13 0	5 2 0	5 7 8	5 15 0	5 15 0	5 15 0	5 15 0	5 15 0
Straw — —	1 13 0	1 11 6	1 16 0	1 10 9	1 10 9	1 10 9	1 10 9	1 10 9
Whitech.—Hay —	5 8 0	5 5 0	5 5 0	5 2 0	5 2 0	5 2 0	5 2 0	5 2 0
Clover — —	6 10 0	6 10 0	6 10 0	6 10 0	6 10 0	6 10 0	6 10 0	6 10 0
Straw — —	1 11 0	1 12 0	1 13 0	1 12 6	1 12 6	1 12 6	1 12 6	1 12 6
<i>Newbury.</i>								
Wheat — — —	50s to 61s	42s to 68s	48s to 61s	40s to 63s	40s to 63s	40s to 63s	40s to 63s	40s to 63s
Barley — — —	23s to 25s	22s to 24s	21s to 23s	22s to 24s	22s to 24s	22s to 24s	22s to 24s	22s to 24s
Oats — — —	23s to 27s	22s to 26s	22s to 26s	22s to 25s	22s to 25s	22s to 25s	22s to 25s	22s to 25s
Beans — — —	—s to —s	—s to —s	—s to —s	—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	—s to —s	—s to —s	—s to —s
Peas — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
<i>Salisbury.</i>								
Wheat — — —	49s to 53s	48s to 52s	48s to 52s	48s to 54s	48s to 54s	48s to 54s	48s to 54s	48s to 54s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	22s to 25s	23s to 25s	22s to 25s	21s to 25s	21s to 25s	21s to 25s	21s to 25s	21s to 25s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — —	22s to 25s	22s to 25s	23s to 25s	21s to 25s	21s to 25s	21s to 25s	21s to 25s	21s to 25s
Peas — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of September, and the 20th of October, 1803.

BANKRUPTCIES.

The Solicitors' Names are between Parentheses.

ABBOTT Thomas, yarn-maker, Needham-market. (Wilson, Castle-street, Holborn)

Alcroft, Robert, Sheffield, scisslar-manufacturer, partner with Joseph Alcroft. (Allen and Exley, Furnival's inn.)

Beaven, William, and John Jones, Bradford, clothier. (Debag and Cope, Temple.)

Bartier, John Ralph, and John Jacob, firm Bartier and Son, Gould-square, Crutched-fricars, merchants. (Gatty, Angel-court, Throgmorton-street.)

Barnes, Edmund, viceter, woolstapler. (Hinrich, Palf grave-place.)

Cox, Rayner, Saxmundham, scrivener Sanfum, & E dlace

Croke, John, late of Bristol, now of Morgan's-lane, Southwark, salesman and broker. (Cruckshank, Basinghall-street.)

Cannon, David, late of Ratcliffe-highway, now of Warwick-court, Holborn, chemist. (Kearey, Temple.)

Dalgairns, Alexander, William Bruce, and John Bridge, Liverpool, merchants. (Cooper and Lowe, Southampton buildings.)

Dylon, Samuel, Soyland, merchant. (Wigleworth, Gray's-inn.)

Dukes, Thomas, Ratcliffe-highway, shopkeeper. (Templer, Burr street.)

Dalton, William, fen Fox-and-knot-yard, Snowhill, dealer in hay and straw. (Edmunds, Hatton garden.)

Eagleton, Edward, Cheap-side, grocer and tea-dealer. (Murphy, Bouverie-street.)

Emerson, Richard, Needham-market, miller and maister. (Lyon and Collyer, Bedford-row.)

Ellis, Robert, Collyer, Bedford-row.

Ellis, Robert, Middle New-street, Fleet-street, jeweller. (Mayhew, Marshall-street, Golden-square.)

Hudson, Richard, Warter, York, horie-jobber. (Evans, Furnival's-inn.)

Hatterley, Richard, Doncaster, grocer. (Allen and Exley, Furnival's-inn.)

Hague, James, and John Martin Sawyer, London, merchants. (Wadefon, Barlow, and Grosvenor, Austinfriars.)

Ivory, Richard, St. Clement, Oxford, upholder and cabinet-maker. (Latimer, Gray's inn.)

Johnston, Andrew, Fyement, Moorfields, merchant. (Vandercomb, Bull-lane.)

James, Benjamin, Northampton, boot and shoe-maker. (Richardson, New-inn.)

Hidden and Sym, Curriers-hall.

Johnson, Thomas, St. Martin's-court, umbrella-maker. (Richardson, New-inn.)

King, Thomas, Precott, West Cowes, linen-drap-er. (Loxley, Cheap-side.)

Lonsdale, Richard, Liverpool, manufacturer. (Blacklock, Temple.)

Lawrence, Edward, Strand, bookseller. (Mayhew, Marshall-street, Golden-square.)

Lawton, William, Manchester, grocer. (Milne, Manchester.)

Meek, Robert, Eccleshall, grocer. (Bembow, Lincoln's inn.)

Martmont, Charles, Rathbone place, straw-hat manufacturer. (Swann and Wallington, Fore-street.)

Ogilvie, William and James, Saville-row, army-agents. (Potts, Crescent, Jewin street.)

- Pitter, Thomas Jermyn-street, gold and silver laceman. (Harvey, Curfior-street.)
 Pugh, Ann, Chatham, shopkeeper. (Townshend and Russell, High-street, Borough.)
 Painter, William, Mixbury, farmer. (Lyon and Collyer, Bedford-row.)
 Rois, William, late of Washington, North Carolina, now of Liverpool merchant, late partner with Henry Rois, firm William and Henry Rois, and William Rois. (Elames, or Norris, Liverpool.)
 Rodgett, James, Blackburn, muslin-manufacturer. (Clarke and Richards, Chancery-lane.)
 Salmon, Joseph, Great Clackson, linen-draper. (Cutting, Bartlett's building, Holborn.)
 Siffmore, Broadfield, and Richard Crofskey, Basinghall-street, merchants. (Crowder and Lavin, Frederic's-place.)
 Smith, John, Bristol, turner. (Lewis and James, Gray's-inn.)
 Tindall, Thomas, Weymouth, grocer. (Alexandron, Bedford-row.)
 Thurgood, Thomas, Welwyn, shopkeeper. (Townshend, Staples-inn.)
 Unthank, John, and Robert Meredith, Manchester, manufacturers. (Elias, Curfior-street.)
 Urquhart, William, Sion College-gardens, merchant. (Dunn, Threaneedle street.)
 Wanklin James, Knighton, mercer, &c. (Parker, Worcester.)
 Willy, John, Oxford-street, trunk-maker. (Langley, Plum-tree-street, Bloomsbury.)
 Watson, Bingley, Mansfield, carpenter and joiner. (Alexander, Bedford-row.)
 Williams, Robert Bodychain, and William Williams, pen-menfa-dealers. (Hughes, Clifford's-inn.)
 Wood, John, Broad-street, Ratcliffe, linen-draper. (Lydall, Adde-street.)
- DIVIDENDS ANNOUNCED.**
- Ainworth, James New Sleaford, mercer, Nov. 2.
 Avern, Richard, Birmingham, baker, Oct. 31.
 Bradley, Benjamin Shorter's-court, Throgmorton-street, merchant, Nov. 12th.
 Breunriul, Francis, Derby, grocer, Oct. 15.
 Bilk, George, Launceston, vintner, Oct. 13.
 Bazley, William, Bristol, linen-draper, Nov. 19.
 Ball, William, Derby, druggist, Oct. 13.
 Bewick, John, jun. Monkwearmouth, butcher, Oct. 18.
 Bacon, John, Sutton in Ashfield, cotton-spinner, Oct. 17.
 Bentley, Richard, Well-clofe-square, haberdasher, Nov. 3.
 Brandish, Joseph, Haines, Birmingham, factor, Oct. 28.
 Burgis, Thomas, Great Tey, gardener, Nov. 1.
 Bowman, John, John Garsford, and Thomas Bowman, Poplar and Limehouse, feed-cruffers, &c. Nov. 4.
 Bibby, Thomas, Stockport, grocer, Nov. 10, final.
 Brett, George, Chestnut, grocer, Nov. 26.
 Clarke, Robert and George, Grub-street, horse-dealers Nov. 5.
 Cole, Edward, Exeter, taylor, Oct. 24.
 Cullinshaw, Thomas, Ashborne, currier, Nov. 1.
 Crofts, James, Snows-fields, dealer, Nov. 1.
 Champion, William, Worktop, late partner with John Cillat and Joseph Hawkesworth, Nov. 3.
 Cobham, Elijah, Liverpool, merchant, Nov. 2.
 Collyer, William, Pullofe-hill, horse-dealer, Nov. 2.
 Cook, John, Warren-street, Tottenham-court road, linen-draper, Nov. 19.
 Davies, Philip, Blackfriars-road, hatter, Nov. 5.
 Dealy, Thomas, and John Hallett, Little Queen-street, coachmakers, Nov. 1.
 Dancaster, John, New Alre-foed, grocer, Nov. 2, final.
 Day, Benjamin, Bishop Stortford, draper, Nov. 26.
 Evans, Evan, Bristol, woollen-draper, Nov. 12.
 Fish, William, Norwich, haberdasher, Oct. 21.
 Fisher, Joseph, Pöllington, feedsmen, Nov. 2, final.
 Gannett, Mathuo, Hilliard, Taunton, Oct. 24.
 Gilchrist, Ebenezer, and Joseph Barry, Liverpool, merchants, Oct. 25.
 Gifford, Samuel, Exeter, dyer, Oct. 15.
 Garrud, Samuel, saxmudham, taylor and draper Nov. 1.
 Gibbs, William, Box, millet, Nov. 13, final.
 Harrop, William, saiford, manufacturer, Oct. 20.
 Harvey, William, Liverpool, woollen draper, Oct. 21.
 Holms, Samuel, Thomas street, Southwark, merchant and ship-owner, Nov. 5.
 Hatfield, John Welley, Falmouth, warehouseman, Oct. 2.
 Hemens, Thomas, Dunsford, miller, Oct. 26.
 Holbrow, Daniel, Thomas and James Haynes, and Robert Henderson, Oldland-mills, manufacturers of chemical preparations, Nov. 2, final.
 Hindley, William, East Retford, mercer, &c. Nov. 2.
 Hendy, Christopher, Falmouth, mariner, Nov. 5.
 Halfhide, James, sen. and jun and Edward Halfhide, Merton, Surry, calico-printers, separate estate of Edward, Nov. 12.
 Jowley, Thomas, Sunderland, inn-keeper, Oct. 22.
 Jackson, Thomas, Shalford, shopkeeper, Nov. 5.
 James, Richard, and William Wilton, Greenwich, grocers, Nov. 5.
 Jarrett, John, Bristol, hop-merchant, Nov. 7.
 Kempson, Samuel, Fleet-street, linen-draper, Nov. 12.
 Lowes, David, and John Henry Rigg, Hart-street, Covent garden, brandy-merchant, Nov. 5.
 Littler, Joseph, St. Clements Danes, jeweller, Nov. 16.
 Larkin, Charles, Rochester, coachmaker, Nov. 12.
 Myers, James, Sunderland, ironmonger, Oct. 22.
 Morris, Pierce, St. Martin's-court, hofier, Nov. 18.
 Marriot, John, Uxbridge, shopkeeper, Nov. 1.
 Martin, Robert, and Mark Lavi, Watling-street, warehousemen, Nov. 5.
 Morris, William, Coventry, mercer, Oct. 25.
 May, Stubble-hill, Norwood, Great St. Helens, merchant, Nov. 8.
 Mariden, William, partner with J. A. Fraiche, Manchester, merchant, Nov. 15.
 Neale, John, Brick-lane, butcher, Nov. 5.
 Norris, Thomas, jun. Lincoln's-inn-fields, cabinet-maker, Nov. 5.
 Newland, Thomas, Cheapside, grocer, Nov. 5.
 Nichols, Thomas, Birmingham, grocer, Nov. 1.
 Norton, John, Drury-lane, victualler, Nov. 5.
 Priestley, John, sen. and jun. Fieldhead, Amelia Priestley, Upper Clapton, and Joseph Priestley, Great St. Helens, merchants, Oct. 21.
 Powney, Daniel, jun. Sherborne, victualler, Oct. 18.
 Pickworth, Thomas, Botesford, butcher, Oct. 25.
 Penn, Henry, jun. late of Kidderminster and Gosbrook, worked-manufacturer, &c. Nov. 1.
 Parker, John, Sodbury, mercer and draper, Oct. 31.
 Pilkinton, William, Sidwell, Exeter, hop and seed merchant, Nov. 8.
 Pierson, George, Cockermouth, woollen manufacturer, Nov. 5, final.
 Read, Thomas, late of Winflow, dealer, Oct. 20.
 Reider, John Claude, London-houfe-yard, bookfeller, Nov. 5.
 Strickland, Thomas, and Colthurst Swinton, Holland, Liverpool, merchants, Oct. 24.
 Spence, Thomas, Blackburn, shopkeeper, Oct. 20.
 Smith, Thomas Samuel, Prettiewell, victualler, Nov. 18.
 Share, Elizabeth, and Thomas Share, Cleobury Mortimer, druggists, Oct. 27.
 Salomonson, Solomon, New-street, Bishopgate-street, merchant, Nov. 1.
 Scott, John, and George, South-street, Finsbury-square, merchants, Oct. 25.
 Sawyer, Thomas, Woolwich, victualler, Oct. 25.
 Smart, Joseph, Wolverhampton, bookfeller, Nov. 1.
 Smith, Edward, Birmingham, hat-manufacturer, Oct. 31.
 Severcy, John, Scarborough, vintner, Oct. 31.
 Savage, Henry, and Isaac Broadwall, comb-maker Nov. 1.
 Smallpiece, Thomas Manchester, druggist, Dec. 1.
 Sommerville, William, Grange-court, Carey-street, taylor, Nov. 12.
 Spence, William, Upper Catton, cornfactor, Nov. 10.
 Townley, Ann, Shepperton, school-mistress, Nov. 7.
 Tooley Thomas, late of Pancrafs-lane, tailor, Nov. 8.
 Tremlett, William, Totnefs, shopkeeper, Oct. 31.
 Tatlock, James, Finch-lane, broker, Nov. 5.
 Tunnecliffe, Ralph, Long Stratton, draper, Oct. 29.
 Tredgold, Roger, Chiland, miller, Nov. 3.
 Trute William, Cripplegate, shoe-maker, &c. Nov. 8.
 Waller, Joseph Marriot, and Michael Waher, Hightown, merchants, Oct. 20.
 Wainwright, William, Liverpool, ironmonger, Oct. 21.
 Walker, Peter, formerly of Dudley, late of West Bromwich, draper, Oct. 15.
 Wilkinson, William, and Thomas Chapman, Jewry-street, and the coal-exchange, coalfactors, Nov. 5, joint and separate estates.
 Wilton, Isaac, late of the Cape of Good Hope, now of Thornhaugh-street, doctor in physic, and merchant, Nov. 1.
 Wright, John, and Peter Beavis, Bristol, linen-drappers, Nov. 12.

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 OCTOBER 15, 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	58	9	46	0	25	0	28	8	40	9	48	4		
Surrey	60	0	46	6	25	4	26	4	37	3	44	6		
Hertford	55	7	38	6	23	9	25	4	35	3	38	9		
Bedford	54	9	34	9	21	6	22	3	35	4				
Huntingdon	53	10			21	2	21	4	29	9				
Northampton	55	2	31	0	22	10	22	3	31	9	34	0		
Rutland	56	3			24	0	21	6	37	0			58	0
Leicester	56	3			24	2	22	0	36	7			36	2
Nottingham	62	0	40	0	28	8	25	0	41	0	42	0		
Derby	61	0			28	0	23	10	40	8	41	0	29	5
Stafford	55	5			28	3	25	4	40	6			32	5
Salop	47	11	33	8	26	0	22	8			39	4	63	7
Hereford	46	9	32	0	23	7	23	7	38	4	38	0	59	3
Worcester	50	8	36	2	27	2	26	7	40	3	46	2		
Warwick	54	5			26	0	27	7	42	10	46	0	44	0
Wilts	51	4			25	6	24	0	42	8	39	6		
Berks	57	0			24	8	27	1	39	2	42	8		
Oxford	53	2			22	1	23	3	36	0	42	0		
Bucks	52	8			24	2	24	10	36	1	41	9		
Brecon	51	2	32	0	23	2	20	0			32	0	36	0
Montgomery	43	2					19	2					33	11
Radnor	48	6			25	9	22	1			31	1	67	10

Maritime Counties.

Essex	59	0	45	6	22	8	29	2	32	9	42	0		
Kent	60	1	46	0	27	4	29	6	35	4	43	6		
Suffex	54	4			27	8	27	8						
Suffolk	54	10	42	0	21	3	25	11	31	10	40	9	46	8
Cambridge	56	8			23	2	20	3	31	3	37	0		
Norfolk	54	4	28	0	20	7	21	0	31	0	38	3		
Lincoln	57	0	28	0	24	7	19	7	32	8	40	0		
York	53	6	37	5	26	7	21	9	38	0	58	8	41	1
Durham	53	0			27	2	23	2						
Northumberland	49	0	34	2	22	8	22	0						
Cumberland	52	11	38	10	27	0	23	5						
Westmorland	60	4	49	4	28	2	23	4						
Lancaster	58	0			29	8	25	11	38	0			23	0
Chester	50	4					22	8					23	2
Flint	48	11			25	9	21	2						
Denbigh	51	8					19	2					35	7
Anglesea	50	0			20	0								
Carnarvon	56	4	36	0	23	10	16	0					38	11
Merioneta	58	10	40	8	26	8	18	8					33	4
Cardigan	50	9			18	0	13	4						
Pembroke	48	1			23	10	15	0						
Carmarthen	59	4			24	0	16	0						
Glamorgan	50	3			24	1	18	10						
Gloucester	50	6	40	5	23	5	23	9	39	1	48	1		
Somerfet	55	3			24	8	21	10	37	11	47	0		
Monmouth	51	10			23	6								
Devon	55	11			23	7	21	8						
Cornwall	54	8			25	8	20	3						
Dorset	52	7			24	0	24	3						
Hants	53	4			24	5	25	3	36	8				

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

Oct.	Bank Stock.	3 per Ct. Red. Shut.	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.	Omniumt.	India Stock.	English Tickets.	Conols for Account
1	143 1/2		52 1/2		85 1/2				51 1/2	9 1/2		9 1/2	161	17 2 0	52 1/2
3	Shut.		52 1/2		85 1/2				51 1/2	9 1-16		10 1/2		17 0 0	52 1/2
4			52 1/2		85 1/2				52	9 1/2		9 1/2		17 0 0	52 1/2
5			52 1/2		85 1/2					9 1-16		10 1/2		17 0 0	52 1/2
6			52 1/2		85 1/2				52	9 1-16		10 1/2		17 0 0	52 1/2
7			52 1/2		85 1/2					9 1/2		10 1/2		17 1 0	52 1/2
8			52 1/2		85 1/2					9 1/2		10 1/2		17 1 0	52 1/2
10	138	51 1/2	66	66	88	87 1/2	15 3-16	3		9 1/2		9 1/2	161	17 1 0	53 1/2
11	139	52 1/2	66 1/2	66 1/2	88	88	15 1/2			9 1/2		9 1/2		17 1 0	53 1/2
12		52 1/2	66 1/2	66 1/2	88	88	35 5-16			9 1/2		9 1/2		17 1 0	53 1/2
13		52 1/2	66 1/2	66 1/2	86 1/2	87 1/2	15 1/2			9 1/2		10 1/2		17 1 0	53 1/2
14	139 1/2	51 1/2	67 1/2	67 1/2	86 1/2	87 1/2	15 1/2			9 1/2		10 1/2		17 1 0	53 1/2
15		52 1/2	67 1/2	67 1/2	85 1/2	87 1/2	15 1/2			9 1/2		10 1/2		17 1 0	53 1/2
17		51 1/2	67 1/2	67 1/2	86 1/2	87 1/2	15 1/2			9 1/2		10 1/2		17 1 0	53 1/2
18		51 1/2	67 1/2	67 1/2	86 1/2	87 1/2	15 1/2			9 1/2		10 1/2		17 1 0	53 1/2
20	139	52 1/2	67 1/2	67 1/2	86 1/2	87 1/2	15 7-16	3		9 1/2	77 1/2	10 1/2	162	17 1 0	53 1/2
21	139 1/2	52 1/2	67 1/2	67 1/2	86 1/2	87 1/2	15 7-16			9 1/2		8 1/2	163	17 1 0	53 1/2
22		52 1/2	68	68	88	88	15 1/2			9 1/2		9 1/2		17 1 0	53 1/2
24	141	52 1/2	68 1/2	68 1/2	88	88	15 1-16			9 1/2		9 1/2		17 2 0	53 1/2
27		52 1/2	68 1/2	68 1/2	86 1/2	88				9 1/2		8 1/2		17 2 0	53 1/2
29		52 1/2	68 1/2	68 1/2	86 1/2	88				9 1/2		8 1/2		17 2 0	53 1/2

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

TO OUR CORRESPONDENTS.

THE Letter from V. T. will be inserted in our next Number.

So much advantage has been derived from the new system of draining, that the proposed paper will be particularly acceptable from X. W. on that subject.

A Little Farmer will find his papers have not been neglected, and we shall be happy to see the continuance of his assistance in the practical subjects to which he has adverted in his private communications.

To Agricola Northumbriensis we have to apologise for several literal, and some verbal, mistakes, which he, however, must attribute partly to his own delay in forwarding his papers.

Page 167, line 21 for "*raised*" read "*varied*."

Page 185, line 5, of our last number, for "*harrowing*" read "*harvesting*."

It is requested that the Secretaries and Agents to Agricultural or Economical Societies will continue to send the particulars of their proceedings, and of the questions designed for public discussion, and they will as usual receive publicity through the medium of this work.

We thank a critical Correspondent for his observations on the work of a noble Lord, and they shall be inserted by the first opportunity.

Civis is informed that it is against the established rule in the conduct of our publication to introduce papers of a political tendency, but his communication shall be returned whenever it shall be convenient to him to send for it.

S. R. is not quite correct in assigning to Mr. Young, the discovery of the species of airs produced by distillation, in the experiments to which he alludes; that fact was ascertained by an Irish Chemist of the first celebrity.