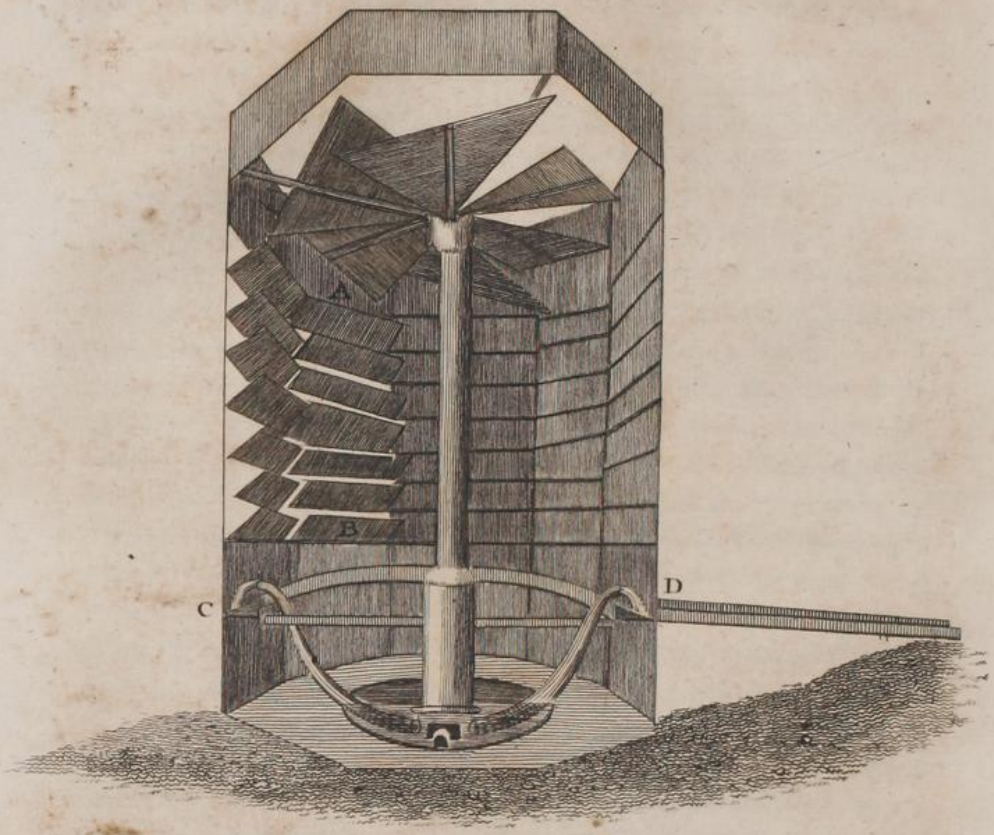
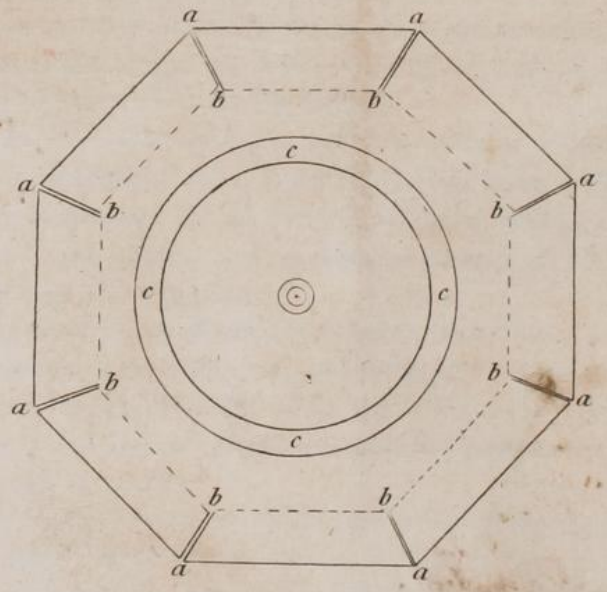
Dr DARWIN'S WATER MACHINE.





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DESCRIPTION OF A MACHINE FOR RAISING WATER A FEW FEET HIGH BY THE POWER OF THE WIND, FOR THE PURPOSE OF DRAINING MORASSES, OR OF WATERING LANDS ON A HIGHER LEVEL.

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THE Plate accompanying this Number, represents a Windmill sail, placed horizontally like that of a Smoak-jack, surrounded by an octagon tower; the diverging rays of this tower, *a b*, *a b*, may consist of two-inch deals only, if on a small scale, or of brick-work, if on a larger one. These upright pillars are connected together by oblique horizontal boards as shewn at A B, by which boards placed horizontally from pillar to pillar, in respect to their length, but at an angle of about 45 degrees in respect to their breadth, so as to form a complete octagon including the horizontal windmill sail near the top of it; the wind as it strikes against any of them, from whatever quarter it comes, is bent upwards and then strikes against the horizontal wind-sail. These horizontal boards, which form the sides of the octagon, may either be fixed in their situation, or be made to turn upon an axis a little below their centres of gravity, so as to close themselves on that side of the octagon tower most distant from the wind.

It may be supposed that the wind thus reflected would lose considerably of its power before it strikes on the wind-sail, but on fixing a model of such a machine on the arm of a long whirling lever, with proper machinery to count the revolutions of the wind sail, when thus included in a tower and moving horizontally; and then when moved vertically as it was whirled on the arm of the lever with the same velocity, it was found on many trials by Mr. Edgeworth, of Edgeworth Town, in Ireland, and by myself, that the wind by being thus reverted upwards by a fixed planed board did not seem to lose any of its power. And as the height of the tower may be made twice as great as the diameter of the sail, there is reason to conclude that the power of this horizontal wind-sail may be considerably greater, than if the same sail was placed nearly vertically opposed to the wind in the usual manner.

At the bottom of the shaft of the wind-sail is placed a centrifugal pump with two arms at C D, which has been described in mechanical authors. It consists simply of an upright bored trunk, or cylinder of lead, with two opposite arms with

an adapted valve at the bottom to prevent the return of the water, and a valve at the extremity of each arm to prevent any ingress of air above the current of the water as it flows out.

cccc, is a circular trough to receive the streams of water from C and D, to convey them where required.

ON DRAINING AND WATERING.

By Dr. Darwin.

Lands in respect to the method of draining them may be divided into two situations; those which lie so high, that the water can descend from them, if it be properly collected and conducted; and those which lie so low as to command no fall, some of which are even below the level of the sea.

In regard to the former it generally happens, that the waters from the springs beneath the soil have not a free passage to the rivers in their vicinity; the nature of springs should therefore be previously understood. Many modern philosophers have endeavoured to shew, that all the continents and islands of the world, as well as the hills, which emboss their surface, have been raised out of the primeval ocean by snbterraneous fires. This appears from the quantity of sea-shells, which form innumerable mountains; and from the fissures in the rocks, of which they consist; the quantity of volcanic productions all over the world; and the numerous remains of craters of volcanoes in mountainous countries.

Hence the strata, which compose the sides of mountains, lie slanting downwards; and one or two or more of the external strata not reaching to the summit, when the mountain was raised up, the second or third stratum, or a more inferior one, is there exposed to day. This may be well represented by forcibly thrusting a very blunt instrument through some folds of paper, a bur will be raised with the lowermost leaf standing highest in the center of it. Or if at the original elevation of an extensive mountain the lowest stratum should not at first stand higher in the center of the summit, it would in time become so by some of the upper strata of the mountain being gradually washed away by rains into the valleys or rivers. On this uppermost stratum, which is colder, as it is more elevated, the dews are condensed in large quanties; and sliding down pass under the first, or second, or third stratum, which compose the sides of the hill; and either form a morass below, or a weeping rock by oozing out in numerous places; or many of these less currents meeting together burst out in a more copious rill.

The immediate cause of springs consists therefore in the condensation of the atmospheric moisture, during the night principally, by the greater coldness of the summits of hills.

The water thus condensed on the summits of hills descends between the strata of the incumbent soil, sometimes for many miles together; but generally from the nearest eminences into the adjoining vallies.

Thus there is a stratum of marl on the surface of the lands about Derby, which extends many miles in most directions. This stratum of marl is of various thickness from 10 to 150 feet, and beneath it lies a stratum of sand, which is also of various thickness from a few inches to six or eight feet, and of various degrees of duration; and beneath this lies another stratum of marl to an unknown depth. On the top of Radborne common, about five miles north-west from Derby, the sandy stratum is quite loose, and rises above the stratum of marl, which is deficient at the summit of the hill. Three or four strong springs of water burst out on the sides of this hill, which thus originate from the moisture of the atmosphere condensed on the cold summit, and passing through the sandy stratum between the two strata of marl.

In the road to Duffield, about two miles north of Derby, the sand-stratum is cemented into stone, as well as in some situations near Radborne-common above mentioned. This stratum of sand-stone is some feet in thickness, and lies four or five yards deep, beneath the upper stratum of marl, dividing it from the lower one. At Normanton, about two miles south from Derby, the sand-stratum consists of a loose sand, so white and pure, that it is imagined it might be used in the manufacture of flint-glass, and lies about twelve feet deep, beneath the upper stratum of marl, dividing it from the under one. In the town of Derby on boring with design to sink a well, after having passed about thirteen yards through marl, some sand was brought up by the auger, and water followed.

The dews therefore, which are perpetually condensing on the summits of these hills, descend beneath the upper and under strata of marl, through the thin stratum of sand, which divides them, and form St. Alkmund's well, and many other springs in the vicinity of Derby; and probably all those which supply the wells within the town.

But there is a situation, where the manner of the production of springs is most agreeably visible; it is about a mile from the city of Lichfield, near the cold bath erected by John Floyer, in a beautiful piece of ground, which was formerly Dr. Darwin's botanic garden.

In this place a grotto about six yards wide and ten long has been excavated on the side of a hill consisting of siliceous sand-stone with this peculiar circumstance; that the upper stratum of the sand-rock, which is there about five feet thick, is divided from the lower stratum of it by a sheet of clay not more than three or four inces in thickness; on the upper sur-

face of this sheet of clay, between the lips of these rocks, a perpetual dribbling of water oozes quite round the grotto, like a shower from a weeping rock. Such sheets of water having been often observed to slide between the strata of the earth almost horizontally, like the horizontal joints of a stone-wall, have, it is supposed, given the name of wall-springs to them, to distinguish them from pipe-springs, or such as burst out in a single rill.

Thus this thin sheet of clay prevents the water from sinking into the lower stratum of sand-stone; and produces other copious springs, which are collected at about half a mile's distance, and conveyed by leaden pipes to the cathedral close of Litchfield, which is thus supplied with water of uncommon purity, which contains no calcareous earth, owing to its passing through siliceous sand over a stratum of clay, and which would be a treasure to the paper-mill or the bleach-yard.

One other circumstance in the present conformation of the earth is necessary to be mentioned; which is, that at the time when the mountains were raised all over the world by deep volcanoes, or by central fires, some parts of the summits of many of them, and of their steeper sides, rolled down again into the new formed vallies. And secondly, that since that remote time the recrements of vegetable and animal bodies have continually been washed down from the eminences by showers, and have contributed gradually to accumulate in the vallies, and to form the plains, which exist on the sides of rivers. This appears from the tin ores found in the vallies in Cornwall, in loose pieces, similar to those in the proximate mountains; and from the black carbonic soil, or morass-turf, found in most vallies.

From these clear ideas of the strata of the earth, and of the streams of water, which slide between them, and form what are termed wall-springs, it is easy to conceive, that the best method of preventing the vallies at the bottom of hills from being too moist must be by cutting a long horizontal ditch into the side of the mountain to intercept the water, just before the level land of the valley commences; and thus to carry away the water before it comes upon the plain beneath.

For this purpose at the foot of the hill, where the plain which is too moist, commences, some auger-holes should be bored to find the depth of the springs, that is to find the thickness of the upper stratum of the soil. If this be only four or six feet, an horizontal ditch should be cut along the bottom of the mountain to intercept the water; which must then be carried away by one or more other ditches opening into this, and conducting the water so collected into the neighbouring rivulet.

As the strata, between which the water descends in forming these springs, have generally the same inclination as the surface of the hill, or nearly so; it follows, that the holes should be bored, and the ditch cut, not vertically downwards, as is the common practice, but perpendicular to the surface of the mountains; as by that means the second stratum will sooner be arrived at.

But if on cutting a ditch five or six feet along the bottom of the hill perpendicular to the rising plain, which forms the side of it, the upper stratum be not cut through; and in consequence no water oozes into the bottom of the ditch; it is then proper to bore other holes at the bottom of this ditch some yards deeper, or till water rises up through them into the ditch, if it can be so discovered. Where this succeeds, many holes should be bored, and the water received into the ditches, and conducted into the adjacent river; for the water will then rise into the bottom of this ditch six feet below the wet surface of the valley, and thus flow away, rather than rise up from the lower wall-springs, or apertures of the stratum, through the incumbent soil to the surface of the valley, which is so many feet higher. This well understood is the great secret for draining those grounds, where the springs can not be cut into simply by a ditch.

This method has been some years practised with success by Mr. Elkington, but was previously used and explained by Mr. Anderson, as he asserts in his introduction to Vol. III. of his Essays on Agriculture, who sunk a hole into the earth at the bottom of a ditch in the year 1764, and the water rose six feet above the surface of the ground, and has continued to flow with less violence ever since that time.

It should here be noticed, that where the water rises with great force through holes thus bored into a deep stratum, it is liable to bring up with it much sand, so as sometimes to obstruct its passage; which sand in this case must frequently be removed for a few days by the reapplication of the auger. Of this a remarkable instance is published in a late volume of the Phil. Trans. by Mr. Vulliamy, who sunk a well 236 feet deep, and four feet wide; and, on then boring a few feet lower with a five-inch borer, so much sand arose with a violent stream of water, as to fill up the whole well; which was repeatedly cleared away by buckets in its fluid state, and at last the water ran over the surface to the amount of forty-six gallons in a minute.

The manner of making these ditches narrower, as they descend, by spades of an adapted breadth; and of making the lowest part narrower than any other part, so that the shoulders or edges of it may support stones, or faggots, to cover the whole at a small expence without obstructing the currents

of water, are obvious to the workmen. In many situations hollow bricks, or ridge-tiles, or old pieces of plaster-floors, may be worth the additional expence of providing them.

There may nevertheless be found situations, where the first stratum of earth may be too thick to be easily penetrated; or where the water, condensed from the atmosphere on the summits of the hills, may slide between the second and third, or between the third and fourth strata, which form the sides of those hills, owing to a deficiency of so many of the strata at the summits of them; and hence that it may lie too deep to be easily arrested by a ditch, or by boring; and yet by its being dammed up by the materials, which form the level plain of the valley, may rise up through those materials to the surface, and form boggy or morassy ground.

In these situations the common unskilful method of draining may be usefully employed; which consists in cutting many ditches four or six feet deep across the bog or morass; and covering them, so that the water may have no obstruction in passing along them; which may thus, as it rises from below, be in part collected and conveyed away; though less advantageously than where the springs can be interceped.

There are some situations, where the water is conveyed beneath the first stratum on a thin bed of clay over a porus sandstone beneath it; as in the grotto at Litchfield above described. In these situations by boring many auger-holes, or by sinking wells, through the stratum of clay the water will penetrate the sand-stone beneath it; and either pass away by the porosity of this kind of stone, or by the cracks or joints which are always found in it; of which the horizontal joints were formed at the time of the production or accumulation of the sand beneath the sea, which was then formed in horizontal strata; but the vertical cracks were made at the time of its elevation by subterraneous fires. In these vertical fissures the ores of lead, ponderous earth, and calcareous spars, are found in the lime-stone rocks of Derbyshire; and those of tin, and quartz, in the granite rocks of Cornwall.

The knowledge of this part of geology concerning the formation of springs may be employed for many useful purposes; thus where the wall-springs, or water-conducting strata, lie so deep as not to be acceptable at a small expence; they generally exist between the second and third, or between the third and fourth strata; which rise into day higher on the adjacent mountains than the first stratum; and hence, when they are bored into, the water will rise higher, than when it is found beneath the first stratum only; which generally becomes deficient on lower parts of the adjacents eminences of the country.

Thus where water, descending in high columns between the strata of mountains, is dammed up below by the materials, which fill up the vallies; if a hole be bored in the valley deep through the incumbent soil and strata, it frequently rises much above the source of the new aperture, and sometimes above the surface of the ground. In sinking the king's well at Sheerness the water rose 300 feet above its source in the well. And at Hartford, in Connecticut, there is a well, which was dug seventy feet before water was found; and then on boring an auger hole through a rock the water rose so fast as to make it difficult to keep it dry by pumps, till the hole could be blown larger by gunpowder; which was no sooner accomplished, than it filled, and run over, and has been a brook for near a century.

In the town of Richmond in Surry, and at Inslip near Preston, in Lancashire, it is usual to bore for water to a certain depth; and that when it is found in both those places, it rises so high as to flow over the surface. And there is reason to conclude, that if similar experiments were made in many other places, such artificial springs might be produced at small expence, both for the common purposes of life, and for the great improvement of lands by watering them.

Another deduction, which may be made from this knowledge of geology, is, that many springs of water, which lie too low for serving a house, or street, or town, or for watering higher grounds for the purposes of agriculture or gardening, may in many situations be dammed up many feet with little or no loss. Thus when the new bridge was building at Dublin, Mr. G. Semple found a spring in the bed of the river, where he meant to lay the foundation of a pier; which by fixing iron pipes into it he raised many feet; and in boring a hole near the Derwent in Derby about fifteen yards deep, the water rose above the surface of the ground, and has continued to flow now for above twelve years in rather an increasing quantity. From having observed a valley north-west of St. Alkmond's well, near Derby, at the head of which that spring of water once probably existed, and by its current formed the valley, (which current in after times found its way out in its present lower situation,) it is suspected, that St. Alkmond's well might by building round it be raised high enough to supply many streets in Derby with spring water, which are now only supplied with river water.

A third deduction from the knowledge of this geology concerning the production of springs teaches, that by enlarging the bottom of a well, where the water oozes from between the surrounding strata in too scanty a supply, a proportionally greater quantity of water may be procured. The hole near the river Derwent in Derby above mentioned, is about an

inch and a half in diameter, and was bored about fifteen yards deep through the uppermost stratum of marl into the sand beneath it, and supplies Dr. Darwin's house with two or three hogsheads of water a day. And Mr. Strutt, near St. Peter's Bridge, has sunk a well for the use of his steam-engine about 200 yards from the former, which passes through the same upper stratum of marl, and is three feet in diameter at the bottom, and supplies, when required, a hundred hogsheads in a day.

The knowledge of this part of geology leads to another useful purpose, the discovery of springs, concerning which some have pretended to possess secret or my stical intelligence, both in England and in France. When the eminences of a country were raised out of the primeval ocean by subterraneous fires, some of them were raised nearly equally on all sides, like the limestone mountain at Breedon in Leicestershire; in which the central stratum may be seen to stand nearly erect or vertical, and those on all sides at considerable inclination. Other mountains were abruptly broken off on one side only from the adjoining earth, like those which form the high torr at Matlock; which rise with one of their sides perpendicular as a wall by the Derwent side; so that the strata of the former of these mountains may be represented, as before mentioned, by the bur, which would be made on some folds of paper, if a very hard blunt instrument was thrust through them; and the latter by raising up one edge of such folds of paper, so as to incline the whole of it at some angle with the horizon.

As the springs consist of the water, which slides between these inclined strata; it is evident, that in some eminences of ground they are only to be met with on one side of the mountain; and in other eminences of ground on all sides of it. In searching for springs therefore attention should be given to the inclination of the strata of that part of the country, which may be often seen in marl-pits, gravel pits, or in hollow lanes. But they may in general be found above any moist or morassy plain or valley; the moisture of which shews, that springs exist in the strata on that side of the mountain.

A second observation for the purpose of detecting springs may be made on misty evenings; as those parts of the ground where the mist commences, are moister than those in their vicinity on the same level; and in consequence may generally, if they are not hollow basons, possess springs nearer the surface; for these moister parts of the ground, having evaporated more during the day, are become colder on their surfaces than the drier ground in their vicinity; and in misty evenings, which are at the same time calm, the stationary air over these moist parts of the ground is also more loaded with the evaporated moisture; and on both these accounts these moister situations

are liable to shew a condensation of aerial vapour sooner than other places on the same level.

As mountains are colder in proportion to their height, the evening mist sometimes commences sooner on them than in the valleys; but is seen earlier in these situations over the moister places, if they are on the same level with the drier ones, exactly as on the plains or valleys; and may therefore indicate the existence of springs, unless these moister places consist of hollow basons containing water, which if not attended to, may in all situations deceive the observer.

Another observation for detecting springs may be made in rimy mornings; for as moist earth is a better conductor of heat than dry earth, the rime will sooner melt on those parts of the soil, which are kept moist by springs under it, than on other parts; as the common heat of the earth, which is 48 in this country, will sooner be conducted upwards in moist places to dissolve the rime on the surface. On this account the rime is frequently seen on frosty mornings, when the heat of the air is not much above 32, to lie an hour longer on dry cakes of cow-dung, or on bridges, or planks of wood, than on the common moist ground; as the latter much better conducts the common heat of the earth to the incumbent rime, which is in contact with it.

But as the heat of the common springs in this country is 48, where they exist, the rime is sooner dissolved than on the stagnant moisture of bogs or morasses. And as the springs about Buxton and Matlock, and at Bath and Bristol, are so much warmer than common springs; it is highly probable, that where these waters approach the surface of the soil, they must much sooner dissolve the rime on frosty mornings; which may probably be observed in situations much higher than their present apparent sources; as they slide down between the interior strata of those hills, beneath the summit of which they are condensed from the steam of water boiling at great depths in the earth; which rises up through those perpendicular clefts of the rocks, which were formed at their original elevation.

In the winter months the rise of springs may be detected in moist ditches by the presence of aquatic plants, as of water-cress, water-parsnip, brook-lime; as in those ditches, which become dry in the summer, these plants do not exist; and when those ditches with springs in them are nearly dry, it may be discovered which way the current has formerly descended by the direction of the points of the leaves of the aquatic plants as certainly as by a level; an observation which I learnt from Mr. Brindley, the great canal-conductor of Staffordshire.

Finally, these arts of detecting the situation of springs may be advantageous to the attentive agricultor, both for the purposes of draining those lands which too much abound with water, and for the purpose of watering those which are too dry, and which lie beneath the level of the springs, or to which the water may be raised by wind-mills or water-engines to be explained hereafter.

(To be Continued.)

ON CROSSING THE BREED OF SHEEP.

To the Editor of the Agricultural Magazine.

Sir,

IT was the King that about twelve or fourteen years ago first introduced the *subject* of improving British wool, by inter-breeding with Spanish sheep; and if *it* were pursued with all that degree of energy which I conceive it well to deserve, I cannot but persuade myself it would prove of advantage to the country, equal in value at least to all the improvements in our rural economy taken together, that have been successively introduced during the same period: the patriotic example, indeed, pointed out and enforced by his Majesty, hath been pursued with energy by many noblemen, gentlemen, and professional agriculturists, particularly by the indefatigable zeal and unremitting attention of my Lord Somerville, and the example is now rapidly advancing in all quarters, insomuch that the opposing forces of prejudice and mistaken interest are well nigh about to subside.

Doctor Parry has well exemplified the advantages of this improvement in a treatise of his, published, by Mr. Crutwell, 1800, and in which I have reason to believe the advantages suggested will be found on the strictest investigation, by no means to exceed the limits of actual experience.

Lord Somerville in the year 1802, disposed of his fleeces to a wool stapler, at the following prices, viz.

Ryeland Fleeces .	2s.	2d.	per lb.	or	£ 26 per pack.
Half Spanish and half Ryeland . . .	3s.	2d.	do.	or	38 do.
South Down Fleeces .	1s.	10d.	do.	or	22 do.
Half Spanish and half South Down .	3s.	0d.	do.	or	36 do.

being an advance of one shilling per lb. or 12*l.* per pack, on wool of the first cross, besides which the fleeces of the admixture had gained a full pound in weight each, beyond those of the original ewes.

In the same year I had 12 ewes shorn, the fleeces weighing together 78 lb. or 6½ lb. per fleece, on the average. These sheep descend from Wiltshire ewes carrying fleeces of about

3½ lb. only; but by many repeated crossings, (the first and second by his Majesty's ram) now approach very near to the entire Spanish blood, evinced also by the following circumstances.

Like ewes of the Spanish breed they are hornless, whereas Wiltshire ewes, as well as rams, are well known to be horned sheep.

The fleeces are close, compact, equal in weight with the Spanish, and with them carry the same general exterior appearance.

In weight of carcase they are nearly similar to the Spanish.

The quality of the wool has been estimated by competent judges to be equal to the Spanish.

From the circumstance that the males of the Spanish *race* are horned, and the females hornless, it would seem to follow, that *it* is perfectly distinct from any of the English breeds; for I am not aware that we have in Britain any of this description. Hence it may be a mistaken idea that fine wooled Spanish sheep, originate from sheep first exported from England to Spain. The fact, however, might have been, that English sheep were occasionally exported to Spain; and for ought we know to the contrary with a view to increase the weight of the native sheep; for then as well as at this time, such increase might have been considered by many as an essential criterion of improvement.

Previous to the time of the celebrated Mr. Bakewell, hugeness of size and bone, were pretty universally considered to have been the leading criteria of perfection, but now the advocates for the smaller breeds of our domesticated animals are rapidly increasing.

In the improvement of Leicester sheep it appears that Mr. Bakewell was attentive to several important points.

1st. to smallness of bone.

2d. — Symmetry of frame.

3d. — an early disposition to fatten, which probably is the general consequence of the two former; and again to reduce the size of the carcase, the latter more sparingly perhaps than his unbiassed judgment might have warranted, considering as would be natural enough the existing prepossession in favor of large sized animals; and many persons, disciples of his, and stock breeders, are decidedly of opinion that to effect this point as far as it was effected, he introduced *(sub rosa)* a selection of Ryeland rams to interbreed with his Leicester ewes.

I remain, Sir, your obedient servant,

NEHEMIAH BARTLEY.

Bath, April 14, 1803.

ON THE DRILL HUSBANDRY.

To the Editor of the Agricultural Magazine.

SIR, *Fakenham, April* 18, 1803.

HAVING so firmly, and, as I thought, so explicitly declared my attachment to the drill-husbandry, I was not a little surprized to find your Middlesex Correspondent expressing his apprehensions that "I still remain doubtful of its excellency, or if convinced, that I yield reluctantly," I would thank him to inform me what stronger proof of my *conviction,* and of my decided approbation of drilling I could possibly give, than by expressing my fears that the advocates for *row-culture** may injure rather than promote the cause by *over-much zeal;* and by offering my opinion that the best methods of gaining proselytes are, *moderation in the reports of experiments,* and a *resolute adherence to matters of fact,* such I still aver to be the surest means of propagating any new discovery.

I really cannot see the force of the other replies which this gentleman has made fo my observations on the experiments of Messrs. Close and Amos, and must therefore persevere in my first opinion, that the accounts of seed-corn used by drill and broad-cast respectively, are much under-rated in the former mode, and strained to the utmost, if not over-rated, in the latter: even if the trial be made on strong soil, our faith will be put to the test; how much more extravagant therefore will the statement appear to the cultivators of sands and gravels! Every trial of strength between two different modes of tillage, if reduced to pounds, shillings, and pence, ought to be calculated on an average quantity of seed used throughout England, to which average I am sure Mr. Close has paid no respect.† In this county, I may say *fair experiment* has taught the cultivator, that a parsimonious economy of seed-corn, whether in the old or new system, is very injurious, and that if he does not *plant,* he cannot *reap:* hence, the difference of quantity used to seed the land in both methods does not differ with us so materially as on stronger soils, where natural fertility combined with perfect cultivation, causes each plant to tiller so luxuriantly as to fill up intervals of surprizing extent.

My opponent remarks that my *attack* (as he calls it,) on Mr. Amos's experiment is frivolous, and that his using har-

* So far from being of the number of those who consider this term as affected, I think no one so proper has yet been used.

† I think myself justified in this assertion, as Mr. Close has (no doubt from very laudable and patriotic motives,) declared that the saving through England in the article of seed-corn only, would be to the immense amount of *one million by the use of the drill machine.* He certainly ought not to have confined his calculation to the Hampshire soil.

rows oftner on the broad-cast acre than on the drilled, was merely accidental, as the state of the land *perhaps* required it, and that the amount of your charge, &c. was so trifling as not worth notice. To all which I beg leave to reply, that it ought to have occurred to your correspondent, how necessary it is in all comparative experiments that the lands are in every respect in equally good condition, and treated alike; that is, neither ploughed nor harrowed, one more or less than the other, because every such operation is a drawback from the profits of the land so treated, *although the crop may be the better for it*: and as to the charge being so little worth notice, because trifling, I must be allowed to express my surprize that any one should call my remark frivolous, because I noticed it. Had the excess of one sum total above the other been but one halfpenny, I should have objected to it, if as I before expressed myself, it had been *squeezed out* by an unfair charge.

I feel much obliged by the honor you have done my drawings in the late Numbers of your Magazine, as also by the Hint given in your last of an improvement in the construction of my Hand-Drill. I perfectly agree with you, that it would be more simple, but confess myself not mechanick enough to contrive such a lever as you propose, which shall be able to remove the strap so suddenly as may be requisite, or of keeping it in its place on the cylindrical pulley when motion is necessary.

I am, Sir, &c.

AGRICOLA NORFOLCIENSIS.

ON TITHES.

To the Editor of the Agricultural Magazine.

SIR,

THE Vicarages would generally be improved by any system of commuting tithes. The holders of such livings are now so much distressed by their incomes being so inadequate to their support, that any change would be for the better. A vicar cannot recover his tithes without producing the endowment of his vicarage, a very large proportion of these endowments have been lost, consequently all such vicars are without remedy for the recovery of their tithes, and they are exposed to the payment of growing taxes and assessments. The incumbents of such vicarages seem to live by permission of their parishioners. And many others are not worth acceptance owing to the accumulation of taxes and assessments. A vicar is assessable for the whole annual gross produce of his living, the taxes and assessments are in too many places nearly 20s. on the pound, consequently all such

Vicars have the trouble of collecting their tithes, and paying the whole money to the state. In most other cases the taxes amount to a moiety of the Vicar's gross income, therefore all such gentlemen have the trouble of collecting their whole tithes and paying away one half the amount of them before they can apply the remaining moiety to the support of themselves and their families, or in other words, the net income of these men is just one moiety of their nominal income. Such of the vicarages as do not come within one or other of these hard cases are, with few exceptions, small livings which do not exceed 50*l.* a year. Including vicarages of every description and averaging their several net incomes, they are less than is paid to a journeyman tailor, or to a livery servant.

The case of these useful gentlemen is extremely hard, it deserves the commisseration of every man of feeling, and calls loudly for Parliamentary aid. This hardship on the vicars is occasioned by the system of assessing not only them, but all titheable produce, on its highest annual value. All the taxes and assessments of South Britain are levied on Vicars, Rectors, and other tithe-owners, as a tax on income; all other men are only taxable on the rent of the house they live in, or on the rent of the farm they occupy; the Vicars not only are taxable for the houses they live in, but for the income which should enable them to live. Other men who get 300*l.* a year by trade or profession, live in a house of 30*l.* a year, and are taxed on that 30*l.* only! In those cases where the taxes are 20*s.* on the pound, such a person's rent and taxes amount to 60*l.* which taken from 300*l.* leaves him 240*l.* per annum, for the support of his family. But the Clergyman whose income in the same parish, amounts to 300*l.* a year, will be assessed on it at 20*s.* per pound, and pay the whole away in taxes, which leaves him nothing for the support of his family. Again, suppose the taxes to be as they very generally are 10*s.* on the pound, the Clergyman would in this case pay in taxes 150*l.* per annum, and his neighbours with the same income would pay 15*l.* Thus a Clergyman and a Tradesman, neighbours to each other, and each of them having 300*l.* per annum gross income, the former would have a real applicable income of only $(\frac{300}{150})$ 150*l.* and the latter of $(\frac{300}{45})$ 255*l.* This grievance has got to a pitch that is ruinous to the incumbents of Vicarages, and has made its attack on the poorer rectories. In future, no sensible man will train a son to the church with the prospect of becoming a Vicar. Taxes increase much faster than any income arising from tithes, therefore another war, or at the farthest two more wars, will occasion the taxes payable by the clergy, to equal their several incomes. They will hen generally have the trouble and anxiety of managing their ithes, of converting them into money, and of paying the

whole amount of such money to the collectors of public taxes. One third of the Clergy have little benefit from tithes at this time; the next expensive war will extend the evil to two thirds of their number, and the second war from this time which shall continue more than six or seven years, will so far annihilate their interest in tithes, as to make them unanimously in favour of any system of commutation. It appears very clearly to be the highest interest of the Clergy, to contribute by every justifiable means towards obtaining a general commutation of tithes, and it is equally clear that the price of the public funds, and consequently the sinews of a strong government, would be best supported by selling the tithes for stock, as hath lately been done by the land-tax.

I am, Sir, yours truly,

Lambeth, April 13, 1803. JOHN MIDDLETON.

WET SOIL UNFIT FOR TURNIPS.

To the Editor of the Agricultural Magazine.

Sir,

A Cautionary Hint has sometimes as salutary an influence on the practice of the sanguinary agriculturist, as an encouraging stimulant on the slow movements of the bigotted old fashioned husbandman. I have lately experienced a discouraging check in my turnip culture: I therefore wish to give a warning hint to the warm admirers of this, generally speaking, most valuable system of husbandry. I find, that, if land is not dry in its nature and situation, it is very ill adapted to this species of cultivation.

In the beginning of the month of November last, I put 60 shear-hogs, which were half fat, to turnips, and they appeared to improve very fast till about Christmas, when the season became wet, and my turnip field which was about six acres, and was unfortunately cold, stiff, clay land, became, as to its surface, like one general bed of mortar. Nearly in this state the land remained during the months of January and February, till the most healing, beneficial, and severe frost took effect, about the middle of the month of March. At that time I had finished my turnips, and to my inestimable benefit, had a watered meadow, of seven acres, with a tolerable bite of grass, to take them.

On examining my sheep, and comparing the state of their condition with what it was in November last, I found that my turnips, hay, and attention had been expended upon them in vain, and that they were actually in a poorer state than when they were put to the turnips: and their quantity of wool was increased only in a small degree, and was so loaded with dirt

that a considerable portion of it was of necessity thrown away and lost. The quantity of hay thus uselessly expended, was rather more than three tons, which valued at four pounds a ton, for it was of the very best quality, will make my loss in this instance, twelve pounds, which added to two shillings per head, the deterioration of the sheep in condition, will make eighteen pounds, besides the value of the turnips and the charge of extra attention of the shepherd. And, add to all this, the land, when it became dry, if that most salubrious and pulverizing frost in March had not interfered, would have been found in so stubborn a state, at seed time, that all the united efforts of men, oxen, horses, ploughs and harrows would never have been effectual in their attempts to bring it to a proper state to receive the seed. It is astonishing to see and feel the improvement which the sheep have made since their removal from the above bed of mud. The sheep are of the long wooled sort, a cross (which I esteem the most profitable of any that I am acquainted with,) between the Leicestershire and the Gloucestershire.

Be kind enough to insert this in your Magazine, as it may prove of use to some one individual of your readers.

I am your humble servant,

PETER HALL.

ON THE LATE SMITHFIELD SHOW OF CATTLE.

To the Editor of the Agricultural Magazine.

Sir,

I AM not displeased with the notice which your Correspondent, who signs himself "A Subscriber to the Club," takes, as appears in your Magazine for January last, page 29, of my account of the late Smithfield Exhibition of fat Cattle; although it is done in terms of unnecessary asperity. If I, in that account, only ventured to soften down to a gentle reprehensive hint, what many at the exhibition did not hesitate to proclaim in a loud and direct censure, I surely cannot, with propriety, be called an "Insidious accuser." As an injured individual of the community I had a right to complain, and by the manner in which what I said has been noticed I am rather confirmed in my strong suspicions respecting the author of the misconduct there alluded to. Your Correspondent intimates, that "Mr. Arthur Young had nothing to do with the above named exhibition," and yet very soon afterwards confesses, that his opinion was consulted respecting the fixing of the day of the exhibition.

I wish to ask this member of the Club, who it was that had the resolutions of the Smithfield Club which were formed at the last Woburn sheep-shearing, delivered to him for publica-

tion; and whether the said resolution were not published in a mutilated state.

My "hearsay information" rests on the authority of two Members of the Club, inferior to none in respectibility and veracity.

I have waited a month or two, in expectation of an attack, different in its kind to the above; one of your Correspondents having pledged himself, some months ago, to convince me and other friends to the aforesaid exhibition of the great injury of giving encouragement to the over-fatting of animals, or to what he stiled the folly-feeding-system. This person, I hope, has been induced to withhold his promised remonstrance, in consequence of a total removal of his erroneous opinions on this subject.

I cannot prevail upon myself to conclude my letter without pointing at the management of the last show of cattle given by Lord Somerville, as a pattern to the future conductors of the Smithfield exhibition. In the former, every thing professed and promised was literally, fully, and honourably accomplished, in the latter it was not so.

I remain yours,

Piccadilly, April 20. T. WESTON.

A REPLY TO THE QUERIES OF JUVENIS ON THE BREED OF SHEEP.

To the Editor of the Agricultnral Magazine.

SIR,

I TAKE up my pen with particular pleasure to reply to the queries of your Correspondent Juvenis, which breathe the spirit of the liberality and candour. New ideas are frequently suggested by mutual enquiries and explanations, which are only injurious when conducted with heat and asperity.

The attention of your Correspondent is confined to three particulars: the advantages of crossing the Leicester with the South Down sheep, the influence of food on the meat of the animals fattened, and the fattening of the lambs and ewes the same year as stated in my letter.

In regard to the first, the crossing of the Leicester with the South Downs, I was particularly induced to adopt it, from the local circumstances of my own situation, as being favourable to the sale of grass lambs.

I conceive that the disposition to fatten in the Leicester is greater than in the South Down; and that the lambs of the *cross* will go earlier to market than the lambs of the *pure* South Down.

I had some hopes that the same disposition to fatten might be extended to the ewes, which should be reared for breeding

stock. I likewise expected, that in a severe winter, the hardy constitutions of the South Down would subsist on less food than what the pure Leicester would require.

For early lambs the Dorsets are certainly the preferable breed. These I have formerly used for this purpose. Many inconveniencies were, however, found to attend the practice of buying in fresh stock every year from a distant fair. In trusting to jobbers and servants, you are liable to much imposition.

The most satisfactory system is to rear all your own stock, which generally prove healthy while kept on their native soil. On this system the dealings of the grazier are confined chiefly to the butcher. The chief objection is the advance on hay, which every year reduces the quantity of *arable* land, and will, if it continues, operate to the total exclusion of the sheep husbandry from the neighbourhood of London.

Secondly, your Correspondent conceives, that allowing the quality of South Down mutton to be improved by the sweetness of the herbage, yet that I seem to deny a similar result *è contrario*. I certainly do doubt whether turnips and oil cake are to be considered as food (which Juvenis seems to suppose) the reverse of what is *sweet;* and whether reasoning *a priori* we should expect *bad* meat from such food.

The position, however, which in my paper I opposed, was that of the Swedish naturalist, that the meat of sheep fed on turnips *tasted* of that vegetable and is *spoiled* by it. So far am I for depreciating the value of grass, that I have warmly recommended in your Magazine, the preservation of it through winter and spring for the support of cattle, and particularly as the sheet anchor of the sheep husbandry. Granting for argument sake, that meat fattened on turnips and oil cake, is inferior in flavour to grass fed beef and mutton; yet surely this is a different question from its *tasting* of turnips and being *spoiled* by that food. What would become of the metropolis, if all the turnip fed mutton exposed to sale in Smithfield market was bad tasted?

In regard to oil cake I have had no experience myself, but I have been credibly informed, that the popular objection, of the fat shrinking in the roasting, is not founded; and that the cellular fibrous fat, without substance in the interstices, arises from the animal not having been completely fattened, and that oil cake would have *cured* and not have *increased* the disease.

Digestion is a wonderful process. Food we esteem *good* will frequently produce meat we regard as *bad*. Thus the cow and the horse when fed on the same provisions, hay and corn, will, as articles of food be considered as totally different. From bad food sweet meat may be produced, as in regard to

the hog when fattened on liquors that have undergone the acetous and even the putrefactive process.

We meet with similar instances in the vegetable kingdom, where, by means of secretion, such astonishing changes take place. From the putrid soil of the garden, and the offensive water of the dung hill will spring a beautiful and fragrant flower.

Man under the guidance of reason selects a mixture of animal and vegetable food. Brutes act under the influence of instinct, which is a much surer guide, as it leads them to reject poisonous plants from which the human race frequently suffer.

What then are we to think of that propensity to animal food discovered by the hog? Graves are a mass of animal substance from which the fat has been previously extracted by boiling and by pressure. These I use largely as a manure, and very frequently the hogs will get at the heaps when lying in the yard, and even when mixed with the headlands in the fields. They will then gorge themselves to the full as if feeding on the richest repast; yet I never knew them to suffer any injury from this species of diet, which may lead one to suspect that their digestive organs are accommodated to a mixture of animal and vegetable food.

In Collins, History of Botany Bay, it is stated, that great expectations were formed from a small uninhabited island, contiguous to Norfolk Island, as a nursery for hogs; the island abounding with fern, of the roots of which these animals are remarkably fond, they were found to increase in number surprisingly so as to promise to yield a constant supply of fresh pork to the settlement. Their increase, however, soon became greater than the food would support, when they actually preyed on one another till the whole race was extinct.

Opium diminishes the irritability of the system, and in large quantities totally suspends the action of the vital powers. Query, might not this medicine be applied with advantage in fattening cattle without injuring the quality of the flesh; particularly in quieting that restlessness which they so frequently discover when first confined? Corpulency soon succeeds a state of inaction in the brute creation, when all irritating causes are removed, and nourishing food in sufficient quantity is provided. Might not occasional doses be given with advantage so as to produce a morbid degree of heaviness and sleep.

Thirdly, in regard to what Juvenis conceives I state respecting South Down ewes being bought in autumn ready crossed with a Leicester ram, and the lambs and ewes fattened the same year that the sheep were bought, the idea itself is so palpably absurd that I am obliged to you, Mr. Editor, for supposing that it could not have been my intention to make any such statement. By placing a semicolon instead of a

comma before the word crossed, and my meaning will be plain. "I have known South Down ewes bought in the autumn in the fairs in Surry; crossed (by which I mean *then* crossed) with a Bakewell ram? the lambs sold in Smithfield time enough for the ewes to go off fat from the grazing grounds the same year, (I mean the same year that the lambs were sold and not that the ewes were bought,) Juvenis quotes me as representing this as a common practice, not aware that my expression, this I have known the regular routine of practice for years," might be confined, which was the fact in the present case, to one farm, a large one in the neighbourhood of London, held by a paticular friend, who followed the practice for several years. The ewes were selected for sale from the folding flocks and were therefore aged; but the ram was one of the best in the country, being descended from Mr. Bakewell's celebrated ram that brought in such a revenue to the owner.

Never having heard of South Down ewes being exposed to sale in the fairs near the metropolis, ready crossed with Leicester rams, I was not aware that the sentence when I pen'd it was liable to such a construction.

April 22, 1803. A. WILKINSON, M. D.

PRICES OF IMPLEMENTS IN HUSBANDRY.

To the Editor of the Agricultural Magazine.

SIR,

SEEING in your Magazine for February and March an account of Hayward's Extirpator, and not having Mr. Young's Suffolk, shall think myself much obliged if you will inform me at what place the Extirpator is to be seen, and in what county, and near what place is Stoke Ash. If you would inform us of the value of the many things you mention in your publication, and the place they are sold at, and the residence of the inventor, you will cause many machines to be sold, that we Farmers know not at what place to apply for.

I am, Sir, your humble servant,

THOMAS SHEPPARD.

(*Note by the Editor.*)

The account of Implements being extracted from the New Farmer's Calendar, we have, out of respect to our Correspondent, made instant application to the author, who, with his usual attention to every request of this kind, has favoured us with the following answer. EDITOR.

To the Editor of the Agricultural Magazine.

SIR,

IN answer to your Correspondent from Buckinghamshire, I must previously state, that I have, in the New Farmer's Calendar, referred inquirers after implements, generally, to the London mechanics, the names of the chief of whom I

have quoted. My opinion of the Extirpator, from what I have seen of it, and the repeated enquiries I have had respecting it, from various parts, are noticed in the preface to the last edition of the Calendar, published this spring.—An application by letter, to Mr. M'Dougale, Oxford-street, or to the Rev. Mr. Cooke, Red-Lion-square, or Mr. Lester, High Holborn, London, Agricultural Implement makers, will, no doubt, be answered satisfactorily, as to the price or utility of any particular implement, or as to the recommendation of implements proper for any given soil.

I have already acquainted the public where I first heard of Hayward's Extirpator: it struck me immediately, as a considerable improvement of the old tool; and from the interest excited among farmers by the account of it, Mr. M'Dougale set about making them, of which he has since sold great numbers. By that maker your Correspondent may be immediately furnished with one, or if he rather chuse to apply to the original inventor, Mr. Hayward, a letter directed to Mr. H. Stoke Ash, Suffolk, will, no doubt, find him. A more particular direction it is not in my power to give; for although I was within five miles of being born a Suffolk man, I have really forgotten, in what quarter of the county Stoke Ash is situated. Had Mr. Hayward been desirous of pushing the sale of his Extirpator, and had hinted as much to me, I should surely in justice have referred my Correspondents to him.

Mr. M'Dougale is authorised to make and sell certain other implements, which have excited a still stronger interest with the farming public—Lord Somerville's two furrow and single ploughs, the one for light and middling, the other for the strongest soils; from what I have seen of their work, and according to the best judgment, I am at present able to form, the ablest constructed ploughs, and of the easiest draught of any at this day used upon our island. For an account of these ploughs, and for acute practical observations on the subject of ploughing in general, draught oxen, and the most important intelligence on the subject of sheep and wool, that has ever been published in this country, I must beg to refer the readers of the Magazine to the Noble Lord's late publication, intituled, "Facts and Observations, relative to Sheep, Wool, Ploughs, and Oxen."

I am, Sir, your obedient servant,

April 22. JOHN LAWRENCE.

M'Dougale's Prices of the following Implements:

	£.	s.	d.
Lord Somerville's Double Plough . .	8	8	0
Single ditto . .	4	14	6
The Extirpator or Scalp Plough complete with a wheel and chain	8	8	0

	£.	s.	d.
The Drill Machine, to sow at three distances, the rows either 9, 12, or 18 inches apart, 6 bout lands at twice, 3 bout lands at once. For all sorts of grain and seeds. Price of the Machine	12	12	0
Two sets of Hoes to complete the Drill	3	3	0
The Expanding Horse Hoe, for all distances, 12 inches to 2 feet	3	3	0
Ditto, for potatoes	4	4	0
Munning's, or the Norfolk Turnip Drill	1	15	0
An improvement of the late Lord Petre's Tu nip Drill	2	12	6
The Flexible Tube for choaked or hoven Cattle	1	1	0
Ditto for Sheep	0	10	6

An account of the degree of success which Mr. Lester has experienced with his new Threshing Machine, price 30*l.* may soon be expected.

(A Plate of the Drill Machine may be seen in the late Sir John Anstbruther's Treatise on the Drill Husbandry.)

DIRECTIONS FOR THE USE OF THE FIVE-ROW DRILL.

Put on the shares and funnels, beginning with No. 1, at the left-hand side, when you drill at 9 inches distance, fix the shares at 9 inches and the funnels No. 1, 2, 3, 4, 5; and when you drill at 12 inches distance, fix the shares at 12 inches, and the funnels No. 1, 4, 2, 5; and when you drill at 18 inches distance, put in the two outside and the middle shares and the funnels No. 1, 3, 5.

Regulate the distribution of the seed by the sliding-plates, behind the seed-barrels, so that each bucket may bring out 8 grains of wheat, which is nearly 6 pecks to an acre at 9 inches distance. Lift the hopper out of work whilst you turn at the end of the land, by the lever for that purpose, and put it again into work before you move forward. Move the hopper forward in order to keep the bar A at the end of the hopper horizontally level, when you go up hill, by the screw for that purpose; and when you go down hill, move the hopper backward.

In order to drill the rows straight, divide the field into ridges of 8 feet and a half wide, and fix the shafts so that the horse may go in the furrow before the right-hand wheel, then let the horse go up one furrow and return in the other, and the ridge will be completed. If the land is wet, lay it up in ridges of four feet and a half wide, or three bout ridges, so that the horse going in one furrow before the wheel, completes the ridge. The seed barrels with large buckets is for beans and peas, and those with second size buckets are for wheat, barley, and oats, and the small buckets are for turnips and other small seeds.

Beans should be drilled at 18 inches distance, peas at 12 or 18 inches, and wheat at 9, 12, or 18 inches, barley and oats at 9 or 12 inches, and turnips at 12 or 18 inches.

ON THE NOURISHMENT OF VEGETABLES.

By Dr. Hunter.

We embrace this opportunity, and indeed we think it a part of the duty which we owe to the public, to avail ourſelves of the kind indulgence granted by Dr. Hunter, and expreſſed by him at the concluſion of his Geographical Eſſays. As this Selection ſays he contains many original Papers, I ſhall be happy to ſee them as generally diffuſed as poſſible; for which reaſon, I embrace the opportunity of freely offering them to the Editors of Agricultural Publications, in order to anſwer the liberal end of univerſal communication. In order to mark the progreſs of Agricultural Improvements, I have it in contemplation to publiſh two Volumes, annually, in the manner of this ſelection; but, in the execution of the deſign, I ſhall be directed by the opinion that the public may entertain of the preſent Publication

YORK, *January* 1, 1803. A. HUNTER.

I Lay it down as a fundamental maxim, that all plants receive their principal nourishment from oily and mucilaginous particles incorporated with water, by means of an alkaline salt or absorbent earth. Till oil is made miscible, it is unable to enter the radical vessels of vegetables; and, on that account, providence has bountifully supplied all natural soils with chalky or other absorbent particles. I say natural soils, for those which have been assisted by art are full of materials for that purpose; such as lime, marl, soap-ashes, and the volatile alkaline salt of putrid dung-hills.

It may be asked, whence do natural soils receive their oily particles? I answer, the air supplies them. During the summer months, the atmosphere is full of putrid exhalations arising from the steam of dunghills, the perspiration of animals and smoak. Every shower brings down these putrescent particles for the nourishment of plants. Of these, some fall into the sea, where they probably serve for the nourishment of fuci, and other submarine plants. They are, however, but seemingly lost, as the fish taken from the sea, and the weeds thrown upon the beech, restore them again under a different form. Thus Providence, with the most consumate wisdom, keeps up the necessary rotation of things, dissolution and combination following each other in endless succession.

When the putrescent particles that are suspended in the atmosphere, happen to fall upon a very sandy soil, the solar heat exhales the most of them. Hence an additional reason for covering our light soils with herbage during the summer months.

On the contrary, when these particles fall upon stiff land, or such as have been marled or limed, an intimate union is produced, too strong for the solar heat to exhale.

It is observed, that lime mechanically binds a hot sandy soil. We now see that it also fertilizes it; but the farmer must not presume too much upon that quality.

The ingenious Mr. Tull and others, contend that earth is the food of plants. If so, all soils equally tilled would prove equally prolific. The increased fertility of a well-pulverised soil, induced him to imagine that the plough could so minutely divide the particles of earth, as to fit them for entering into the roots of plants.

An open soil, if not too light in its own nature, will always produce plentiful crops. It readily receives the air, rains, and dews into its bosom, and at the same time gives the roots of plants a free passage in quest of food. This is the true reason why land well tilled is so remarkably fruitful.

Water is thought, by some, to be the food of vegetables, when in reality it is only the vehicle of nourishment. Water is an heterogeneous fluid, and is no where to be found pure. It always contains a solution of animal or vegetable substances. These constitute the nourishment of plants, and the element in which they are minutely suspended, acts only as a vehicle, in guiding them through the fine vessels of the vegetable body.

The hyacinth, and other bulbous roots, are known to perfect their flowers in pure water. Hence superficial observers have drawn an argument in favour of water being the food of vegetables. But the truth is, the roots, stem, and flowers of such plants are nourished by the mucilaginous juices of the bulb, diluted by the surrounding water. This mucilage is just sufficient to perfect the flower, and no more. Such a bulb neither forms seeds, nor sends forth off-sets. At the end of the season, it appears weak, shrivelled, and exhausted, and is rendered unfit to produce flowers the succeeding year. A root of the same kind, that has been fed by the oily and mucilaginous juices of the earth, essentially differs in every particular. It has a plump appearance, is full of mucilage, with off-sets upon its sides.

All rich soils, in a state of nature, are thought to contain oil and mucilage; and in those lands which have been under the plough for some years, they are found in proportion to the quantity of putrid dung that has been laid upon them, making an allowance for the crops they have sustained.

To set this matter in a clearer light, let us attend to the effects of manures of an oily nature, and we shall soon be satisfied that oil, however modified and distinguished, is one of the chief things concerned in vegetation.

Rape-dust, when laid upon land, is a speedy and certain manure, though an expensive one, and will generally answer best on a limestone land, or where the soil has been moderately limed.

This species of manure is much esteemed by the farmer. It contains the food of plants ready prepared; but as it is not capable of loosening the soil by any fermentation, the lands

upon which it is laid ought to be in excellent tilth. At present, that useful article of husbandry is much diminished in goodness, owing to the improved methods of extracting the oil from the rape. Heat and pressure are employed in a double degree, and every other method is used to the prejudice of the farmer. Some persons, however, are of opinion, that the severe extraction of the oil does not materially injure the rape-dust.

Farmers that live in the neighbourhood of large towns use abundance of soot. It is an oily manure, but different from the former, containing alkaline salt in its own nature, calculated as well for opening the soil, as for rendering the oily parts miscible with water.

It is observed that the dung of pigeons is a rich and hasty manure. These animals feed chiefly upon grains and oily seeds; it must therefore be expected that their dung should contain a large proportion of oil.

The dung of stable-kept horses is also a strong manure, and should not be used until it has undergone the *putrid ferment*, in order to mix and assimilate its oily, watery, and saline parts. Beans, oats, and hay, contain much oil. The dung of horses that are kept upon green herbage, is of a weaker kind, containing much less oil. Swine's dung is of a saponaceous and oily nature, and perhaps is the richest of the animal manures. When made into a compost and applied with judgment, it is excellent both for arable and grass lands. The dung of stall-fed oxen, especially if oil-cake make part of their food, is of a rich quality, and greatly preferable to that of cows and oxen supported by grass only. A farmer, when he purchases dung, should attend to all the circumstances under which it is produced. One load of dung from a hunting stable, where much corn is used, is worth two loads produced by hay and green provender.

The dung of ruminant animals, as cows and sheep, is preferable to that of horses at grass, owing to the quantity of animal juices mixed with their food in chewing. And here I beg leave to remark in general, that the fatter the animal, *cæteris paribus*, the richer the dung.

Human ordure is full of oil and a volatile alkaline salt. By itself, it is too strong a manure for any land; it should therefore be made into a compost before it is used. The dung of carnivorous animals is plentifully stored with oil. Animals that feed upon seeds and grains come next, and after them follow those which subsist upon grass only.

To suit these different manures to their proper soils, requires the greatest judgment of the farmer; as what may be proper for one soil, may be highly detrimental to another.

In order to strengthen my argument in favour of oil (phlogiston) being the principal food of plants, I must beg leave to observe, that all vegetables, whose seeds are of an oily nature, are found to be remarkable impoverishers of the soil, as hemp, rape, and flax; for which reason, the best manures for lands worn out by these crops, are such as have a good deal of oil in their composition; but then they must be laid on with lime; chalk, marl, or soap ashes, so as to render the oily particles miscible with water.

The Book of Nature may be displayed, to show that oily particles consitute the nourishment of plants in their embryo state; and, by a fair inference, we may suppose that something of the same nature is continued to them as they advance in growth. The oily seeds, as rape, hemp, line, and turnip, consist of two lobes, which, when spread upon the surface, from the seminal leaves. In them the whole oil of the seed is contained. The moisture of the atmosphere penetrates the cuticle of the leaves, and, mixing with the oil, constitutes an emulsion for the nourishment of the plant. The sweetness of this balmy fluid invites the fly, against which no sufficient remedy has, as yet, been discovered. The oleaginous liquor being consumed, the seminal leaves decay, having performed the office of a mother to her tender infant. To persons unacquainted with the analogy between plants and animals, this reflection will appear strange. Nothing, however, is more demonstrable.

Most of the leguminous and farinaceous plants keep their placenta, or seminal leaves, within the earth; in which situation they snpply the tender germ with oily nutriment, until its roots are grown sufficiently strong to penetrate the soil. The curious reader will find this subject treated of at large in the third Essay.

It is usual to talk of the salts of the earth, but chemistry has not been able to discover any salts in land which has not been manured; though it is said that oil may be readily obtained from every soil, the very sandy ones excepted.

Marl, though a rich manure, has no salts. It is thought, by some, to contain a small portion of oleaginous matter, and an absorbent earth, of a nature similar to limestone, with a large quantity of clay intermixed.

Lime, mixed with clay, comes nearest to the nature of marl of any factitious body that we know of, and may be used as such, where it can be had without much expense. By increasing the quantity of clay, it will make an excellent compost for a light sandy soil; but to make the ground fertile, woollen rags, rotten dung, currier's shavings, or any oily manure, should be incorporated with it some time before it is laid on.

It is the opinion of some, that lime enriches the land it is laid upon, by means of supplying a salt fit for the nourishment of plants; but by all the experiments that have been made upon lime, it is found to contain no kind of salt. Its operation, therefore, should be considered in a different light. By the fermentation that it induces, the earth is opened and divided, and, by its absorbent and alkaline quality, it unites the oily and watery parts of the soil. It also seems to have the property of collecting the acid of the air, forming with it a combination of great use in vegetation.

From viewing lime in this light, it is probable that it tends to rob the soil of its oily particles, and in time will render it barren, unless we take care to support it with rotten dung, or other manures of an oily nature.

As light sandy soil I contain but a small portion of oleaginous particles, we should be extremely cautious not to overdo them with lime, unless we can at the same time assist them liberally with rotten dung, shavings of leather, woollen rags, shavings of horn, and other manures of an animal kind. Its great excellence, however, upon a sandy soil, is by mechanically binding the loose particles, and thereby preventing the liquid parts of the manure from escaping out of the reach of the radical fibres of the plants.

Upon clay the effect of lime is different; for by means of the gentle fermentation that it produces, the unsubdued soil is opened and divided; the manures laid on readily come into contact with every part of it; and the fibres of the plants have full liberty to spread themselves.

It is generally said that lime answers better upon sand than clay. This observation will undoubtedly hold good as long as the farmer continues to lime his clay lands in a scanty manner. Let him treble the quantity, and he will then be convinced that lime is better for clay than sand. It may be justly answered, that the profits will not admit of the expense. I agree. But then it must be understood that it is the application, and not the nature of the lime, that should be called in question. Clay, well limed, will fall in water, and ferment with acids. Its very nature is changed.

Under such agreeable circumstances, the air, rains, and dews are freely admitted, and the soil is enabled to retain the nourishment that each of them brings. In consequence of a fermentation raised in the soil, the fixed air is set at liberty, and in that state of activity it becomes an useful instrument in dividing the tenaceous clay. However, let the farmer, who uses much lime for his clay lands, be instructed to manure them well, otherwise the soil will bake and become too hard to permit the roots of the plants to spread themselves in search of food.

It is the nature of lime to attract oils and dissolve vegetable bodies. Upon these principles we may account for the wonderful effects of lime in the improvement of black moor-land. Moor-earth consists of dissolved, and half-dissolved, vegetable substances, It is full of oil.—Lime dissolves the one, and assimilates the other.

Such lands, not originally worth sixpence per acre, may be made, by paring, burning, and liming, to produce plentiful crops of turnips, which may be followed with oats, barley, or grass seeds, according to the inclination of the owner.—These observations, however, are rather foreign to the argument of the present essay, to which I shall now return.

To the universal principle, oil, (phlogiston) we must add another of great efficacy, though very little understood; I mean the nitrous acid of the air.

That the air does contain the rudiments of nitre, is demonstrable from the manner of making salt-petre in the different parts of the world. The air contains no such salt as perfect nitre; it is a factitious salt, and is made by the nitrous acid falling upon a proper matrix of the rubbish of old houses, fat earth, and any fixed alkaline salt. The universal acid, as it is called, is attracted by these materials, and forms true nitre, which is rendered pure by means of crystalization, and in that form it is brought to us. In very hot countries, the natural earth forms a matrix for nitre, which makes the operation very short.

It is observed that nitre is most plentifully formed in winter, when the wind is northerly: hence we may understand the true reason why land is fertilized by being laid up in high ridges during the winter months. The good effects of that operation are wholly attributed to the mechanical action of the frost upon the ground. Light soils as well as the tough ones, may be exposed in high ridges, but with some limitation, in order to imitate the mud walls in Germany, which are found by experience, to collect considerable quantities of nitre during the winter.

After saying so much in praise of nitre, it will be expected that I should produce some proofs of its efficacy, when used as a manure. I must confess that experiments do not give us any such proofs. Perhaps too large a quantity has been used; or rather, it could not be restored to the earth with its particles so minutely divided, as when it remained united with the soil, by means of the chemistry of nature. I shall therefore consider this nitrous acid, or as some call it, the *acidum vagum*, in the light of a vivifying principle, with whose operations we are not yet fully acquainted.

I have already observed, that there subsists a strong analogy between plants and animals. Oil and water seem to make up

the nourishment of both. Earth enters very little into the composition of either. It is observed, that animals take in a great many earthy particles at the mouth, but they are soon discharged by urine and stool. Vegetables take in the smallest portion imaginable of earth; and the reason is, they have no way to discharge it.

It is highly probable, that the radical fibres of plants take up their nourishment from the earth, in the same manner that the lacteal vessels absorb the nutriment from the intestines; and as the oily and watery parts of our food are perfectly united into the milky liquor, by means of the spittle, pancreatic juice, and bile, before they enter the lacteals, we have all the reason imaginable to keep up the analogy, and suppose that the oleaginous and watery parts of the soil are also incorporated, previous to their being taken up by the absorbent vessels of the plant.

To form a perfect judgment of this, we must reflect that every soil, in a state of nature, has itself a quantity of absorbent earth, sufficient to incorporate its inherent oil and water; but when we load it with fat manures, it becomes essentially necessary to bestow upon it, at the same time, something to assimilate the parts. Lime, soap-ashes, kelp, marl, and all the alkaline substances, perform that office.

In order to render this operation visible to the senses:— Dissolve one drachm of Kussia potash in two ounces of water; then add two spoonfuls of oil. Shake the mixture, and it will instantly become an uniform mass of a whitish colour, adapted, as I conceive, to all the purposes of vegetation.

This easy and familiar experiment is a just representation of what happens after the operation of burn-baking, and consequently may be considered as a confirmation of the hypothesis advanced. Let us attend to the process.

The sward being reduced to ashes, a fixed alkaline salt is produced. The moisture of the atmosphere soon reduces that salt into a fluid state, which, mixing with the soil, brings about an union of the oily and watery parts, in the manner demonstrated by the experiment.

When the under stratum consists of a rich vegetable mould, the effects of burn-baking will be lasting. But when the soil happens to be thin and poor, the first crop frequently suffers before it arrives at maturity.

The farmer, therefore, who is at the expense of paring and burning a thin soil, should bestow upon it a portion of rotten dung, or shambles manure, before the ashes are spread, in order to supply the deficiency of oily particles; and he should be very careful not to keep this kind of land too long under the plough.

In consequence of this prudent management, the crop will be supported during its growth, and the land will be preserved in health and vigour.

For such weak lands, it is highly probable that oil compost will be found the cheapest and most effectual manure.

Hitherto I have considered plants as nourished by their roots. I shall now take a view of them as nourished by their leaves. An attention to this part of the vegetable system is essentially necessary to the rational farmer.

Vegetables that have a succulent leaf, such as vetches, peas, beans, and buck-wheat, draw a great part of their nourishment from the air, and on account impoverish the soil less than wheat, oats, barley, or rye, the leaves of which are of a firmer texture.

In this manner the vegetable creation renders the air pure by assimilating to itself those putrescent particles, which, if not removed, would render the atmosphere unfit for animal respiration. Some modern philophers have attempted to destroy this opinion, but they must bring stronger proofs than those they have produced, before they can expect to tear from the human breast an idea so full of harmony.

Rape and hemp are oil-bearing plants, and consequently impoverishers of the soil; but the former less so than the latter, owing to the greater succulency of its leaf.

The leaves of all kinds of grain are succulent for a time; during which period the plants take little from the earth; but as soon as the ear begins to be formed, they lose their softness, and diminish in their attractive power.

The radical fibres are the more vigourously employed in extracting the oily particles of the earth, for the nourishment of the seed. Such, I apprehend, is the course of nature.

WATER MEADOW LATELY FORMED IN YORKSHIRE.

To the Editor of the Agricultural Magazine.

SIR,

I HAVE just had some conversation with a person skilled in the art of floating meadow land, according to the plan practised in the county of Gloucester, who has given me a report of his late operations in Yorkshire, which as it is of a rather encouraging complexion, and tends strongly to remove the general dread of engaging in this novel branch of husbandry on account of its expence, I shall beg of you to assist me in making it public.

This person informs me that he has just converted fourteen acres of poor grass land, the property of Mr. Grimston, of Neswick, near Driffield, into water meadow, in the most complete and costly method that is ever adopted, and the whole expense did not exceed seven pounds per acre, although he was under the necessity of removing two small hills or eminences which contained several hundreds of cart loads each.

Mr. Grimston, with a degree of spirit and discernment highly creditable, determined to have his meadow made as perfect as possible at once, and desired the floater, by name Portlock, to begin his formation upon that principle. The floater, accordingly, pared off the whole of the turf, to be preserved for replacing, and then after having stretched two lines, one along the side of the floating gutter or top of the ridge, and another along the side of the drain, at the distance of seven yards, (for it seems he had but a scanty allowance of water,) he proceeded to slope off or cut down the soil to the last mentioned line, to the depth of three inches, and threw it to the side of the former line, or towards the top of the bed, with a regular descent, one from the other. Thus the bed, by three inches having been taken from one part to elevate the other, gained six inches fall: which he informs me is a sufficient descent for a bed of that width where there is no great command of water. Thus was every part of the meadow thrown into regular ridges at once, a complete turf afforded it, a double descent given to each ridge, that is, a descent in each floating gutter and drain, as well as in the beds, and the whole meadow brought to that state of perfection which is requisite to reap, undiminished, the abundant advantages of irrigation.

In the abovementioned expence of seven pounds per acre, are to be reckoned the charge of making and placing all the flood hatches which, it appears, were very numerous, at the request of the proprietor; a flood-hatch to almost every floating gutter to give a greater command over the water, that any particular part might be watered or laid dry at pleasure.

This formation of the meadow commenced at the beginning of the month of October last, and a considerable part of it would have been under water before the end of November, but the springs which supply the water did not break freely, as it is termed, before the beginning of January, as I believe was the case with most springs this last winter: notwithstanding this deficiency of water, however, the proprietor of the meadow was enabled to turn into it 200 ewes with their lambs, on the second day of April, where, it is confidently expected, they will find ample support for the term of three weeks.

This promt production of early grass, procured at no very alarming enormity of cost, speaks in favour of this branch of

husbandry, I think, and I hope, Sir, you will think so likewise, in a language which deserves a general hearing and attention,

I am, Sir, your humble servant,

London, April 23, 1803. T. W.

THE MOST PROFITABTE USE OF STRAW.

To the Editor of the Agricultural Magazine.

SIR,

THERE are no objects, in the whole range of rural economy, of greater moment than these two; the most effectual mode of increasing our quantity of fodder, and the cheapest methods of procuring manure, and indeed these two are almost natural consequents of each other. And the general recommendation towards the obtaining of these objects is, the planting of a variety of green crops upon highly manured land; but I shall pursue a different plan in the council which I shall presume to give for these purposes; and only advise the farmer to apply to the best advantage that *saving knowledge* of which he is seldom found destitute. I shall only advise him to use cautiously the means which he already possesses, not to act merely upon the plan of present profit, but to look forward to consequences. I address myself particularly to those farmers who occupy their own land, for tenants, under the wise restrictions of leases, stand not in need of the council which I am about to give.

I observe in various parts of England large quantities of wheat, rye, and sometimes oat straw rendered useless towards the productive purposes of agriculture, by being used as a covering to houses and other buildings. This, as far as it goes, and its extent is not very confined, is a certain loss to the community, and to the proprietors too, if contracted notions would allow them to see it, both of animal food and productive manure.

Were the straw thus consumed only subjected to the strokes of the chaff-cutter, and given to young cattle, (the increase of which cattle is at this time peculiarly a great national desideratum,) we should soon experience its worth in a higher degree even than as a shelter from the inclemency of weather.

For instance, were the breeders in Herefordshire to use every particle of their straw in the shape of chaff, and to give it to their steers and oxen, alternately with turnips, potatoes, cabbages, or similar food, they would be enabled to keep them a year longer, at a very cheap rate, than is usually the case: and the breeder, besides the additional quantity of manure which he would gain, would find his beasts more improved in the space of the last year than in the two former

years, and the feeder would find them more fit for his purpose, and of course more profitable. And what I say of this species of cattle may, with equal force, be said of almost every other.

These farmers alluded to, however, will tell us, "that they receive an enormous price for, or make a great profit of, the straw which they either sell or use for thatch." This I allow, and it is this prompt payment, which seems attended with no deductions, that captivates and deceives them.

But let these persons reflect, that from this seeming clear profit, they are first to deduct the expences of preparing, or if they sell their straw, of delivering out; that is, the labour of their servants, horses, &c.

In the second place they are to deduct the cost they are at in providing other manure to supply the place of that which would have arisen form the straw if taken as food.

In some places, other kinds of manure are to be procured, and then their grounds, year after year, robbed of a part of their natural manure and support, will afford crops less and less fruitful, till at last they will be reduced to the extreme of having no straw to sell or use. But supposing that they are so situated as to be enabled to procure other species of manure, yet the extra expence of distant cartage and laying them on their lands, compared with the easy carrying out of what is already upon their premises, will form no small deduction from the supposed clear profit above-mentioned.

And after all, let them reflect on the truth which the practical and theoretical farmer agree in, that a mixture of manures has the most beneficial effect. And let them fully appreciate the value of the manure made in the common farmyard, which is certainly the most fertilizing of all mixtures, and they will discover, that they are receiving with one hand only in order to pay out more profusely with the other, when they venture to sell, or to use their straw for thatch.

But I may here be asked, with what materials are buildings to be covered where neither slates nor tiles are to be found? To this I answer, that slates or tiles are to be procured, in every part of this island, at a rate ultimately less expensive than a covering of straw when its manifold, extended, and full value is taken fairly into consideration. There is no canal in England which does not convey slates from place to place; and there is scarcely a parish in the kingdom where bricks are not, or might not, be made, and where these are made, tiles may be made likewise.

I am confident, that if this one simple regulation, which I have mentioned, namely the making the most of our straw,

were duly attended to, that we should soon experience a considerable reduction in the price both of cattle and butchers' meat.

I am, Sir, yours,

T. C.

For the Agricultural Magazine.

USEFUL TABLES FOR FARMERS AND GARDENERS.

Division of an Acre, into Roods, Rods, Yards, Feet, and Inches.

AN account of the number of plants, or trees, which may be planted on a rod or acre of land, at different distances, a calculation of the value of several crops on an acre of land, and value of it for building.

I.

In an acre are

4 Roods, each rood 40 rods, poles or perches.
160 Rods, 16 feet and a half each.
4,840 Square yards, 9 feet each.
42,560 Square feet, 144 inches each.
174,240 Squares of 6 inches each, 36 inches each.
6,272,640 Inches, or squares, of one inch each.

II.

Division of a Rod.

To shew how many plants may be raised on a rod of land at different distances.

In a rod are 272¼ square feet, or 9,204 square inches.

A Rod will contain,

Trees or Plants.	Number of inches asunder.	Square inches to each.
2,450 and 4 inches over	4 by 4 . .	16
1,960 . . .	5 by 4 . .	20
1,633 and 12 ——	6 by 4 . .	24
1,089 . . .	6 by 6 . .	36
816 and 36 ——	8 by 6 . .	48
612 and 36 ——	8 by 8 . .	64
490 and 4 ——	10 by 8 . .	80
392 and 4 ——	10 by 10 . .	100
272 and 36 ——	12 by 12 . .	144
261 and 54 ——	15 by 10 . .	150

III.

An Acre will contain.

Trees or Plants.	Numbers of feet asunder.	Square feet to each.
108 and 360 feet over,	at 20 feet asunder, or	400
160 . . .	16½ ditto	272¼
134 and 144 feet over	18 ditto	324
302 and 72 ditto	12 ditto	144
435 and 60 ditto	10 ditto	100
680 and 40 ditto	8 ditto	64
888 and 43 ditto	7 ditto	49

Trees or Plants.	Number of feet asunder.	Square feet to each.
1,089	8 by 5	40
1,210	6	36
1,361 and 8	8 by 4	32
1,452	6 by 5	30
1,555 and 20	7 by 4	28
1,815	6 by 4	24
2,178	5 by 4	20
2,722 and 8	4 by 4	16
2,904	5 by 3	15
3,630	4 by 3	12
4,840	3 by 3	9
5,445	4 by 2	8
7,260	3 by 2	6
8,712	2½ by 2	5
10,890	2 by 2	4
19,305	1½ by 1½	2¼
21,780	2 by 1	2
43,560	1	1

A mile square contains 640 acres.

IV.

To calculate the value of several Crops on an Acre of Land.

		d.	£.	s.	d.
19,360	plants at	¼ each	20	3	4
9,680		½ —			
4,840	a plant to each yard	1 —			
2,420		2 —			
1,210		4 —			
605		8 —			
43,560	a plant to each foot	1	181	10	0
		½	90	15	0
		¼	45	7	6
20,000	plants	at 1d. each	83	6	8
10,000	—		41	13	4
5,000	—		20	16	8
1,000	—		4	3	4
500	—		2	1	8
250	—		1	0	10
160	—		0	13	4
100	—		0	8	4
4,840	plants at	1d.	20	3	4
		2d.	40	6	8
		3d.	60	10	0
		4d.	80	13	4
		6d.	121	0	0

The value of an Acre of Land for Building.

	s.	d.	£.
4,840 square yards at	5	0	1,210
	4	0	968
	3	0	726
	2	6	605
	2	0	484
	1	0	242

A NATURAL PROPENSITY OF SWINE.

To the Editor of the Agricultural Magazine.

SIR,

I HAVE been inclined, sometime, to combat a position laid down in your Magazine for the month of November last, page 327, founded upon the experience, as is there asserted, of a Mr. Saunders, of Stroud, who says, that "*cleanliness*, contrary to the common opinion formed of the swine species, is essentially conducive to the growth and well being of a pig." Now, Sir, this position seems daily to be contradicted by what we see of the natural habits of this animal, having lately read what Varro says on this subject, I shall venture to place the opinion of a wise Roman in opposition to that of Mr. Saunders and of your Correspondent Viator.

Varro in his De Re Rustica, de Sue, says, "a place adopted for the fattening of swine, should be wet or marshy, because they delight not only in water but in mud." And again, in the next page, "that they may roll in the mud, which is as refreshing to them, as the bath is to man."

But that your readers may judge for themselves of the fairness of my translation, I shall beg of you, if you favour me with the insertion of this, to give the latin likewise, which is as follows:

Page 227, "In pastu locus huic pecori aptus uliginosus, quod delectatur non solum aqua, sed etiam luto." Page 228, "Ut volutentur in luto, quæ est illorum requies, ut lavatio hominis."

Whilst, however, I am thus venturing to opposed authority to the opinion of Mr. Saunders I do not wish to detract in the least from the merit of his discovery, from which I expect a valuable result.

I am yours,

AN OXONIAN.

THE NATURAL HISTORY AND BOTANICAL DESCRIPTION OF THE PINUS CEMBRA, OR APHERNOUSLI PINE, WITH THE USES OF ITS TIMBER, AND THE VIRTUES AND QUALITIES OF ITS KERNELS AND RESIN; FROM AUTHORS OF EMINENCE FOR ABOVE 200 YEARS. WITH DIRECTIONS FOR THEIR CULTIVATION IN THIS KINGDOM.

To the Editor of the Agricultural Magazine.

SIR,

THIS curious and valuable timber-tree, the Pinus Cembra, or Aphernousli Pine, although it has been described by various Botanists for above 250 years past, has been but lately known in England, and at present there are but very few plants to be found in the gardens of this country.

As it grows in so many parts of the Continent, it is a matter of surprise, that our various travellers have taken so little notice of it, on account of the majestic appearance which they make on bleak and barren mountains, where one would think that scarcely any plant would grow, and the kernels being eatable.

It is to Mr. Harte, Canon of Windsor, that we are indebted for the first authentic account of it from any English traveller, but it is proper also to insert the descriptions from various foreign authors who have described it, and arrange them in their chronological order, according to the period of time in which they were written.

To Matthioli we are indebted for the first account of it, who calls it,

Pinus Cembra. Matthioli's Commentary on Dioscorides, lib. i. c. 74. where five prints cut in wood may be seen. - - Fol. Venet	1548
Pineaster. Belloni de Arboribus Coniferis. 12mo. Ant.	1553
Pinus sylvestris Cembra. Camerarii Epit. 42. Francs. 4to. - - - -	1586
Pinus Foliis Quinis, cui ossicula fragili putamine, sive Cambro. Joh. Bauhini. Hist. Plant. Fosi. Ebroduni	1659
Pinus Sylvestris montana tertia. Baulini Pinax. 491. Basil 4to. - - -	1671
Larix Sempervirens, foliis quinis, nucleis edulibus. Bregnius. Exoticarum plant - Fol. Godani	1678
Pinus Sativa, cortice fisse, foliis setoris subrigidis abunâ vaginâ quintis. Amman. Sterpes, Ravieres Ruthenicæ. - - 4to. Petropoli.	1739
Pineaster. Micheli Genera. 223. 4to. Florent.	1729
Pinus foliis quinis, cono erecto, nucleo eduli. Haller, Helvet. 150. - Fol. Gœtting.	1742
Pinus foliis quinis, cono erecto, nucleo eduli. Gmelini Flora Sibirica, 1. p. 4to. Petropolis.	1750

Pin à cinque feuilles, dont les Cones se tiennent droits, et les Neyaux sont bons a manger, ou Alviez, des Brianconnis
Du Hamel. Traité des Arbres et Arbustes. T. 2. pl. 32. - - 4to. Paris. 1755

And lastly, Linnæus and Mr. Harte.

Pinus foliis quinis lœvibus. Iter Suanicum.
Habitat in alpibus Sibiriæ, Tatariæ, Helvetiæ. Vallesiæ Baldi, Allobrogum. Tirolensium. Tridentinorum.
Linnæi Species Plantarum. - 8vo. Holmiæ 1763

Pinus Cembra, or Aphernousli pine
Harte's Essays. - 8vo. London 1764

From the preceding authors it appears that it was known and described by them above two centuries ago, and that it grows on the coldest and most mountainous parts of the following countries:

Switzerland,	Tirol, Trent,	Tartary,
Piedmont,	Vallesia,	Dauphiny, and
Savoy,	Mount Baldus,	Siberia.

As these trees are natives of various countries much colder than England, and grow on very mountainous tracts of land, there cannot be a possibility of doubt against their succeeding here, and their timber arriving at perfection, and will prove a very valuable acquisition for plantations in such places, where scarce any of our native trees will thrive.

The Aphernousli pine, according to Mr. Harte, is of an healthy vigorous nature, grows very tall, and will bear removing when it is young, even in dry warm weather, but I do not recommend the practice.

Its timber is large, and has many uses within doors, or under cover; its grain is finer and more beautifully variegated than deal, and the smell is more agreeable; it is useful for wainscoating, flooring, and other joiners' work, and the wood makes excellent firing for stoves, ovens, and kilns.

The bark of the trunk of the tree is of a whitish cast; and the branches resemble those of the spruce fir, and the tree altogether something of the Weymouth pine.

The leaves are long, smooth, and are produced by fives.

The cones are of a purplish colour, shaded with black, about three inches long, the same in circumference, and grow erect, a dozen weighed fifteen ounces, or about one ounce and a quarter each; under each scale there are two kernels, and from a hundred to a hundred and fifty in each cone.

The husk, or sort of shell which encloses the kernels, is easily cracked, and the kernels are covered with a brown skin which peels off; they are about as large as a common pea, triangular like buck-wheat, and white and soft as a blanched almond, of an oily agreeable taste, but leaving in the mouth

that small degree of asperity which is peculiar to wild fruits, and not unpleasing. These kernels make a part sometimes in a Swiss desert, and supply the place of mushrooms buttons in ragouts, and on account of their balsamic oil are recommended in consumptive cases. An odoriferous white resin is extracted from this tree.

Another traveller of credit informs us, that he has seen trees ninety feet high, and near ten feet in circumference at their bases.

To Mr. Heim, of Florida Gardens at Brompton, Nurseryman, a native of Switzerland, the public are obliged for having several hundred cones of this valuable tree introduced into England, which he collected in that country some years ago, with several other curious Alpine seeds and plants*.

THEIR CULTIVATION.

In their cultivation it is necessary to imitate, as nearly as possible, their native soil and climate, and as in those countries, where the ground is constanly covered with snow during all the winter months, there is no intermediate season betwixt winter and summer, like our spring, but on the snows melting about April, warm weather instantly ensues; nature therefore indicates that a gentle hot-bed is not improper to sow them upon, to give them a better chance of succeeding here.

All pines and firs in general thrive best in a sandy loam, therefore about the end of March, or beginning of April, make a hot-bed, and have a parcel of boxes or pots, (at least twelve inches deep) filled with good sandy loam; in these plant the kernels four inches asunder, and one inch deep. When the violent steam is gone off, place the boxes or pots on the bed, and water and shade them as occasion requires. By an experiment made of forcing some of the kernels in a stove, since their arrival here, they came up in three weeks, and are shewing already a second shoot, since their seminal leaves, which are from eight to thirteen, but have not had an opportunity of seeing them since.

About June, if the weather proves warm, it will be proper to remove them to a shady border, where they must remain till the approach of winter, and if the stems appear weak, or violent rains should leave their roots bare, spread some loam over them, whenever they require it, and let them be constantly kept free from weeds, and frequently watered in dry weather, to raise them as strong as possible against winter.

On the approach of winter, it will be prudent to put them in a frame placed in a warm situation, with either glasses or

* The meaning of the word aphernousli, he says, is from the German word apher, a pine, and nousli, a small nut, which signifies a nut-bearing pine, on account of the kernels being eaten.

mats over them, because in their native countries, whilst young, they are first covered with leaves and afterwards defended by snow, from the piercing winds; whereas in this country, they would be liable to alternate frosts and thaws, which prove more prejudicial than one continued frost, when defended by snow, and oblige us to shelter in winter, plants which come from such climates.

The following April they will require transplanting, because they will be too much crowded, which will be done with great ease, by their being at such a distance, and as they will then be too small for planting where they are to remain, it will not be amiss to plant each out into single upright pots, and then they are always ready for planting out with balls of earth to them, without disturbing their fibres, and if wanted to be sent to a distance, each ball can be tied up in paper or coarse cloth, and the earth preserved to the roots.

In these pots they may remain for two, or perhaps three, years more, accordingly as they grow, and if you would still wish to keep them longer, for an opportunity of removing them at pleasure, with safety, they must then be planted into baskets about ten feet deep and one foot over, which will preserve them for about three years more, but no pines or firs remove well if transplanted large, and succeed best when not above two feet high.

As the culture of this pine is at present but little known, I would recommend also trying another method, which has been frequently attended with success, with pines and firs, and is less trouble and expence. It is, to sow some of them on a north border of sandy loam, laid at least a foot deep, and to plant the kernels in rows, at the distance of six inches by four, which will permit the ground to be stirred betwixt them with a hoe, and afterwards to be carefully taken up with a trowel, when two years old, and planted in pots.

As the poets in every age, from Homer to the present time, have been stricken with the beautiful part of an alpine landscape, I shall just make short quotations from each, to inspire gentlemen with the ideas of converting their barren British Alps into beautiful landscapes, covered with stately timber-trees, an ornament to their country and an advantage to themselves and their posterity.

Homer paints it in one verse, ευνοσιφυλλος. Iliad x.

Virgil, Caput piniferum Atlantis. Æn. 4. 249.

Lucan, Rupens piniferæ, 2. 431.

Valerius Flaccus, Piniger othrys. 6. 393.

Statius, Theb. Nutant mutata cacumina montes. 6.

And then conclude with our poet Cowley, who being passionately fond of agriculture, appears to have painted a forest of mountain aphernouslis, with as much justice and sublimity

as if he had sketched out the description at the feet of the Swiss alps:

Sublimi feriunt vorantes vertice nubes.
Quantum despiciunt montana cacumina valles,
Tantum ILLÆ stantes in summo, montibus ipsis
Altius assurgunt; sic stabat turba gigantum,
Sic superinjecta frondoso pelio ossa
Stabent terrores superum. Couleius de Plantis, l: 6.

——————— On forests, forests rise,
'Till the top branches touch the dewy skies,
As Alpine cliffs o'ershade the vales below,
So these hang nodding o'er th' aerial brow
Of Alps.—Earth's giants thus provok'd the fight,
(While Pelion groan'd oe'r-pil'd with Ossa's height)
A terror to the gods!

Harte's Essays on Husbandry, p. 104.

I am your's,
RICHARD WESTON.

ON A RICH AND CHEAP COMPOST, &c.

By Dr. Hunter.

IN the last Essay I endeavoured to show that oil, made miscible with water, constitutes the chief nourishment of vegetables. A greater number of proofs might have been produced in support of that doctrine; but I flatter myself that those already advanced will be thought sufficient.

Having reason to believe that my theory was founded upon facts and experiments, I was desirous of converting it to public utility. And as I apprehend that a compost might be discovered, upon the principles advanced, which would come cheap to the farmer, and be of easy carriage, I diligently employed myself in prosecuting the inquiry.

In the course of investigation I took care to reason upon proper data; carefully avoiding every degree of partiality to my system. In philosophy nothing is so delusive as prejudice.

After making various trials, I at last discovered what I so ardently sought after; but as I have not the vanity to think my experiments sufficiently conclusive, I embrace this opportunity to request the assistance of the practical farmer, in order that the merits of the invention may be fully determined.

Should my theory concerning the food of plants be found erroneous, the compost, of course, will be disregarded. But, on the contrary, should it be agreed to, that oil, under certain modifications, made miscible with water, constitutes the chief nourishment of vegetables, then the invention will probably become a subject for future experiment.

Though theory may direct our enquiries, yet experience must at last determine our opinions, for which reason I propose to enlarge my experiments; and as I have no other view

but the investigation of truth, I shall lay them faithfully before the public, whether they prove successful or not.

We know that a number of experiments, made by different persons, and in different places, are essentially necessary towards establishing the truth of any received opinion in Agriculture. How much more necessary is it to request the assistance of the practical farmer, in determining the merits of a new invention? For such I esteem the compost I here communicate.

Virgil, indeed, has recommended the lees of oil as a manure, and the ingenious Dr. Home has mentioned olive oil; but neither of them reflected upon the absolute necessity of rendering the oil miscible with water, by means of an alkaline salt.

I judge it unnecessary to repeat what I have already advanced upon the food of plants. I shall therefore refer the reader to the first Essay, as it contains the greatest part of the reasoning upon which the following compost is founded.

To make Oil-Compost.

	l.	*s.*	*d.*
Take North-American pot-ash 12 lb. -	0	4	0
Break the salt into small pieces, and put it into a convenient vessel with four gallons of water. Let the mixture stand forty-eight hours, then add coarse train-oil, 14 gallons -	0	14	0
	£ 0	18	0

In a few days the salt will be dissolved, and the mixture, upon stirring, will become nearly uniform.

Take fourteen bushels of sand, or twenty of dry mould. Upon these, pour the above liquid ingredients. Turn this composition frequently over, after adding to it as much fresh horse dung as will bring on heat and fermentation; in six months it will be fit for use.

I apprehend that the above quantity will be found sufficient for an acre: my trials, however, do not give me sufficient authority to determine upon this point.

For the convenience of carriage, I have directed no more earth to be used than will effectually take up the liquid ingredients. But if the farmer chooses to mix up the compost with the mould of his field, I would advise him to use a larger portion of earth, as he will thereby be enabled to distribute it with more regularity upon the surface. I have not yet had any extensive trial of its efficacy upon pasture and meadow grounds: but I presume that whatever will nourish corn, will also feed the roots of grass. When used upon such lands, it should be put on during a rainy season, as all top-dressings are injured by the solar heat.

All kinds of cattle must be kept off the lands for some time, as they will bite the grass too close in quest of the salt contained in the compost, which I have found to be the case in small trials.

I shall here observe, that the oil-compost is only intended to supply the place of rape-dust, soot, woollen rags, and other expensive hand-dressings. It is in all respects inferior to rotten dung: where that can be obtained, every kind of manure must give place to it.

At the same time that dung affords nourishment, it opens the pores of the earth. Hand-dressings, on the contrary, give food to plants, but contribute little towards loosening the soil. This is is an useful and practical distinction, and may be applied through all the variety of manures made use of by the farmer.

I presume that the oil-compost resembles the natural food of plants; but I submit that, as well as every thing else, to experience, our unerring guide.

It may be objected, that it has not sufficiently undergone the *putrid ferment*, to attenuate the oily particles. The use of rape-dust, soot, horn shavings, and woollen rags, take off that objection, and at the same time confirm the theory upon which the above compost is founded.

I do not take upon me to direct the experienced farmer in the manner of using this new compost. I would have every person apply it in the way most agreeable to himself. Many things will occur to the practical husbandman, that no reasoning of the philosopher could foresee. By attending to the different ways of using it, we may reap considerable advantages. Improvements may be collected even from the highest degree of mismanagement.

Facts must ever be the foundation of our reasoning. Without them, the philosopher is a kind of *Ignis fatuus*. Instead of unfolding nature, he covers her with a cloud, and endeavours, as it were, to bring old Chaos back again into the world.

Should I presume to instruct the farmer in the management of the compost, I would recommend it to be sown immediately after the grain, and both harrowed in together.

The following experiment, though trifling in its own nature, gave me the first encouragement to prosecute the subject upon a larger scale.—I took four pots, N° 1, 2, 3, 4.

N° 1.—contained 12 lb. of barren sand, with 1 oz. of the sand oil-compost.

N° 2.—12 lb. of sand, without any mixture.

N° 3.—12 lb. of sand, with ½ oz of slacked lime.

N° 4.—12 lb. of sand, with 4 oz. of the sand oil-compost.

In the month of March, I put six grains of wheat into each pot, and during the summer I occasionally watered the plants with filtered water. All the time that the plants were consuming the farina, I could observe but little difference in their appearance. But after one month's growth, I remarked N° 1. was the best. N° 2. the next. N° 3. the next. N° 4. much the worst.

In August I made the following observations:

N° 1. had five small ears, which contained a few poor grains.

N° 2. had three small ears, which scarce deserved the name of ears, containing a few grains, much inferior in goodness to the former.

N° 3. had no ears. Only I observed two very small ones within their respective sheaths, which, for want of vegetable strength, never made their appearance.

N° 4. had no ears; the stalks appearing stunted in their growth.

I removed the plants from their pots, and took a view of the roots of each.

N° 1. The roots tolerably large, and well spread.

N° 2. The roots not so large.

N° 3. The roots very short and small.

N° 4. The roots much the shortest, with the appearance of being ricketty.

Upon this experiment I remark:

1. That the oil-compost may be considered as a vegetable food: but that, when used too liberally, the alkaline salt will burn up the roots of the plant, and hinder vegetation. For which reason I would recommend the compost to be exposed to the influence of the air, for some months, before it is laid on.

2. That lime contains no vegetable food, and is, in its own nature, an enemy to vegetation. It is, however, of excellent use in assisting vegetation, in the manner described in the first essay.

My experiments teach me, that all kinds of soils may be benefitted by this manure. The limestone, gravelly, sandy, and chalky soils seem to require it most. The rich loams and good clays have nourishment within themselves, and stand more in need of the plough than the dunghill.

It is observed by farmers, that rape-dust seldom succeeds with spring-corn, unless plentiful rains fall within a few weeks after sowing. I have more than once made the same observation upon the oil-compost, which induces me to recommend it for winter crops only. From the unctuousness of its nature, it is more than probable, that it should lie exposed for a long time to the influence of the weather, which benefit it is deprived of when used for barley, and such crops as are sown late in the spring. I am confirmed in this idea, from repeat-

ed experiments made with the compost upon turnips, which generally proved unsuccessful. But at the same time I invariably found that those parts of the field on which the compost had been spread, produced the best crops of grain the following year. From this slow manner of giving its virtues, it seems to be an improper dressing for all plants that have a quick vegetation.

Agreeably to the theory advanced in the first Essay, I presume that all lands, which have been exhausted by frequent crops, are robbed of their oily particles, and consequently have become barren. The oil-compost, as it plentifully restores particles similar to those that are carried off, has a fair appearance of proving an excellent restorative. To lands under such circumstances, lime alone is the worst manure that can be applied.

This last observation naturally leads me to wish for a general history of manures, upon sound and rational principles. I cannot help regarding that necessary part of husbandry, as a subject but imperfectly understood. Whoever succeeds in that difficult task, will prove himself a real friend to mankind. Without it, agriculture must remain a vague and uncertain study.

REGULATIONS FOR MAKING POOR LAND RICH.

FIFTH ESSAY ON RURAL ECONOMY.

To the Editor of the Agricultural Magazine.

SIR,

THIS Essay, continued from No. 42, page 18, was originally written for men of the first consequence in the state. But as I do not see the least prospect of due patronage, I now offer it to the world at large. I may perhaps send two or three more papers, and then let the subject drop, although I have for years had the thought much at heart, and dedicated time and expence for forming a rational system of agriculture, with a view to increase the provisions of the country, for the benefit of society. How far, however, (were it properly supported,) it might operate, it is impossible for any one to say.

Seven years ago I solicited the honor of some conversation, and also about four years since, upon this subject, but not having met with the encouragement expected, I have been tempted to detail the system, and have given these essays in order to bring the business before the public, or rather to lead the public mind to receive it, should the general outline, when explained, be found worthy of attention.

The Sixth Essay may be what I wrote as a Prize Essay, published with permission from the Board of Agriculture, for

which I had the honor of a medal, the subject was *Growing of Wheat*; and the mode there specified, properly reduced to practice, would probably yield a much greater quantity of fine corn on the same breadth of land than any other plan before thought of.

Another essay for explaining the necessity of about ten clauses in an act of parliament for directing the system for establishing Herdsmen's-farms, under the sanction of government, but without being attended with any expence to the public, or compulsion on individuals.

The eighth paper to prove that all the principles in agriculture are virtually hinted at in three short sentences, formed and originally published by me, and which, when worked upon, would double the whole *productive system of provisions*, on just as much arable land of naturally kindly soil, but which was unproductive from no other cause than weeds, poverty, and neglect.

Fortunately the poorer lands are more applicable to our purpose than the richer would be, because the product of the latter cannot be doubled, but those of the poorer sorts may, and in proportion as the system of the Herdsmen's-farms advances, we shall likewise have the additional benefit of doubling the price of the land. The world must remember, that we are not attempting to bring back the prices of former times, the opulence of the country will not admit of that, but what I am aiming at is, to introduce such a regular supply from the product of the soil, as to keep provisions as near as possible at a medium price, as either extreme would operate to mischievous purposes.

A few more essays may close the business, and when the papers are collected, form a volume sufficiently respectable, I hope, for making a valuable library book of agricultural tracts. But I am by no means satisfied with this my own mode, unless it has the honor of sanction from government, for without the detailed thoughts are supported by administration they cannot produce any material effect.

The Herdsman's-farm, worked under a course or tilth of four or six years, comes round very well, and the land is constantly employed to valuable purposes. What quantity of land should be assigned to each may be difficult to determine, as it must be governed by local circumstances: but I am inclined to say thirty-two acres; as that quantity will support a sufficiency of stock for producing active valuable manure, and may be easily managed by two peasant families, a man, his wife, and children, at seventeen shillings a week, as herdsman. A deputy, his wife, and family, at sixteen shillings, and each a small cottage. This establishment, when brought into due return of crops, will produce much fruit, milk, but-

ter or cheese, poultry, meat, and corn, with numerous successive litters of young pigs, and each of these articles must be brought into regular detail before they can be understood for practice.

It is allowed, that there are in the fifty two counties of England and Wales three millions of acres of land, properly coming under the description alluded to, and were but one or more of these farms near to every large village or town, as conveniency might offer, only consider what a wonderful increase of product would from hence be sent to market.

It appears perfectly rational to expect by the powers of money, conducted under a judicious system, and strictly attended to, that there may be drawn from the surface of the soil only, a sufficiency of manure for making poor land rich, without any material expence for manure, after the first year. Undoubtedly the setting out will be heavy, for on the commencement there must be a very good fallow with plenty of manure to secure a full crop of turnips; after this time the system will support itself when brought into a regular alternate succession of two feeding crops, followed by one white or exhausting crop, in every two years, and the regular tilth coming round once in six years. The feeding crops must be rigidly eaten off upon the land, and applied to no other purpose. The judgment of the herdsman will, in some measure, appear, by his securing the regular quantity of food and number of stock to suit with each other. Every description of stock must be kept in high conditon, and there is no taking one step in the business without a power vested somewhere, for borrowing, paying, and regulating money concerns, with other restrictions, &c. &c.

The tilth of the six years is as follows, for the herdsmen's farms:

First year, rye or tares, to be eaten off as soon as possible, and turnips sown directly after.

Second, barley and clover.

Third, first crop and second crop of clover mown, put into racks, and eaten upon the land.

Fourth, the wheaten crop.

Fifth, one acre or more of potatoes.

One ditto, cabbages.

One ditto, carrots.

One ditto, Parsnips.

Each to be taken off in time for a good wheat season, which makes the sixth.

Should 32 acres be the assigned quantity of land and the parties are desirous of fruits, take two acres for that purpose.

Fruit . . . . . 2 *Acres.*
The regular rotation of crops under the plough being 6 and 4 acres in each, making . . 24
But first in some convenient corner, or as may best suit the soil, before the land is marked out, appropriate six acres for growing grass and rough hay for the oxen, cows, and sheep . . . 6

Thus you have applied the 32 *Acres*

Which 32 acres are to produce *Acres.*

Fruit	2	*Forty acres in crop on 32 acres of land with no fallow, and the weeds subdued*
Wheat	8	
Barley	4	
Rye and Tares	4	
Turnip	4	
First and second crop of Clover	8	
Cabbage, Potatoes, Carrots. and Parsnips	4	
Grass and Rough Hay	6	

I am, Sir, the Public's Friend,
WHEAT-SHEAF.

ENUMERATION OF PATENTS LATELY ENROLLED.

1803, *Feb.* 1. JAMES GAYLEARD, of New Bond street, Middlesex, Staymaker; for long-stays, short-stays, and corsetts, on an improved construction.

——— 5. Stephen Hooper, of Walworth, Surrey; for machines, or machinery, upon improved principles, and methods of using the same, for the purpose of cleaning creeks, bars of harbours, and preventing bars from making.

——— 10. William Henry Clayfield, of the city of Bristol, Wine-merchant; for a method of reducing and extracting lead, and other metals, from a compound supstance, commonly known by the name of Regulus.

——— 21. Timothy Cobb, of Banbury, Oxfordshire, Woollen-manufacturer; for improvements in the manufacturing a certain kind of piece goods, called Shag, or Plush.

——— 23. Jonathan Woodhouse, of Ashby-de-la-Zouch, Leicestershire, Engineer; for a method of forming a cast-iron rail, or plate, which may be used in making iron-rail roads, or ways, for the working and running of waggons carts, drays, and other carriages, on public and other roads; and also, a new method of fixing, fastening, and securing, such cast-iron rail, or plate, on such roads.

——— 28. Robert Kirkwood, of Edinburgh, Engraver, and Copper-plate Printer; for improvements on the copper-plate printing-press.

——— 28. Thomas Johnson, of Bradbury, Cheshire, Weaver; for a method of preparing, and dressing cotton warp.

Feb. 28. Robert Mason, of Cumberland-steet, Portsea, Hampshire, Gentleman; for improvements on a common waggon, whereby the same may be separated, and used as two carts, which he denominates the "Patent Hampshire Waggon."

——— 28. Benjamin Haden, of the parish of Sedgley, Staffordshire, Bagging Weaver; for an improvement in the manufacure of bagging, for packing of nails, and other purposes.

CRITICAL CATALOGUE.

Georgical Eſſays. By A. Hunter, M. D. F. R. S. L. and E. *In* 4 *vols.* 8*vo. with plates.*

THE deſign and execution of this work cannot be better explained than in the words of Dr. Hunter's preface, we ſhall therefore tranſcribe it without apology.

"About the year 1770 a few gentlemen formed themſelves into a ſociety at York, for the purpoſe of giving encouragement to the Agricuture of their reſpective neighbourhoods; and in order to confer ſtability and reputation upon their undertaking they took upon themſelves the title of the *York Agricultural Society*, with a Preſident, two Vice-Preſidents, a Treaſurer, and Secretary. Convinced that reſpectability was unattainable without reſponſibility, the ſociety agreed to affix their reſpective ſignatures to all the papers read at their board, and they alſo agreed that ſuch papers as were thought to poſſeſs diſtinguiſhed merit ſhould be publiſhed in a work bearing the title of *Georgical Eſſays*. In about twelve months from the commencement of the inſtitution, the firſt volume made its appearance, and under the moſt favourable circumſtances, the ſociety were induced to promiſe a continuation of the work; but in conſequence of the death of many of the moſt active members, the publication was diſcontinued ſo that only one volume exiſts to record the induſtry and attention of the York Agricultural Society. The ſociety is now no more, its diſſolution having taken place about 18 years ago. Having had a principal ſhare in the publication of the Georgical Eſſays I feel myſelf called upon not to ſuffer them to paſs into oblivion; and I the more willingly engage in the undertaking as I mean to make it the baſis of a more extenſive publication. It is my intention to draw into one focus, all that is widely diffuſed through numberleſs volumes of Agricultural information; and in ſo doing I expect to be able to exhibit to the favourers of Agriculture, a field well cultivated, and free from all unſightly and noxious weeds. In this propoſed collection there will be ſome papers that have never appeared in public; but by far the greateſt number have been publiſhed in different periodical works. The diſtinguiſhed authors of theſe papers will, I flatter myſelf, approve of this method of rendering their public ſpirited exertions more generally known, for it cannot be expected that a number of high-

priced books, all of them containing ſome papers of uſeful information, can be the object of general purchaſe."

After this expoſition by the compiler it will be the more unneceſſary for us to enter into any examination of the varied contents of theſe volumes, as our limits would not admit even of a recapitulation only of the very numerous papers and eſſays of which they are compoſed, and of which Doctor Hunter's contributions form no inconſiderable portion. We have, no doubt, but that the practical as well as the ſpeculative Agriculturiſt will acknowledge his obligations to the compiler for concentrating from the various ſources which he has conſulted, ſuch a body of uſeful information on a ſubject ſo intimately connected with the welfare and proſperity of States, and of this kingdom in particular.

It would have been, in our opinion, a conſiderable improvement in the plan of this ſelection if all the papers on the various branches of rural and domeſtic economy had been arranged under their reſpective heads; it would at leaſt have added materially to the utility and convenience of the work.

At the concluſion the Doctor ſignifies his intention of publiſhing two volumes annually, on the ſame plan, if the work here announced, experienced a favourable reception from the public.

We already have, and ſhall in future, avail ourſelves of the author's permiſſion, to lay before our readers ſuch of the original papers that have appeared for the firſt time in this collection, as we conceive moſt worthy of the attention of the practical farmer.

II. *L'Agriculteur du Midi; the Southern Farmer; or, a Treatiſe on the Agricultural ſyſtem proper for the Southern Departments, which eſtabliſhes the principles of cultivation, ſhews their application, points out their effects, and furniſhes the means of reſtoring to exhauſted land its original fecundity.* By André Louis Eſprit Sinety, *Member of the Academy of Marſeilles, of the Council of Agriculture, Arts, and Commerce, of the Department of Bouches du Rhone. In 2 vols. 12mo. with an Engraving repreſenting an Oil Mill, invented by the Author.*

This work is the reſult of the theory and practice of a zealous and intelligent agriculturiſt, of a good citizen who inceſſantly aiming to render himſelf uſeful, divides his time between rural labours, which he directs, the operations of the Academy of Marſeilles, at which he preſides, of the Council of Commerce, which he enlightens with his ſage patriotic ideas.

The ſouthern departments of France ſituated between the eaſtern Pyrenees and the Var, but more particularly the territory of Marſeilles and Aix, and the diſtricts ſituated along the coaſt, require a particular method of culture.

Excellent inſtructions and complete treatiſes on agriculture proper for countries in a high ſtate of cultivation, have been long ago publiſhed. But countries where agriculture is in a low ſtate, ſuch as the diſtricts in the ſouth of France, are abſolutely deſtitute of inſtruction, or only poſſeſs works ſuited to certain productions; they have no complete treatiſe, and ſtill leſs any elementary principles.

If farmers have been able to fertilize a ſoil almoſt univerſally ſteril and expoſed to conſtant aridity, and the occaſional aſperity of the climate, it has only been by efforts of the moſt active induſtry. They

have obtained good crops only by multiplying the vegetables capable of being naturaliſed, and by continual laborious perſevering oppoſition to the rigour of nature.

The ſoil of theſe diſtricts, naturally unfruitful, has become ſtill more ſteril by being exhauſted. Worn out with the ancient method of culture, which dates from the period when the Phoceans, the founders of Marſeilles, taught the natives the art of cultivating the precious plants and trees which they brought with them from Greece, the ſoil has every year become worſe and worſe.

All hiſtorians have deſcribed theſe parts as being originally ſteril, and *Monteſquieu* upon occaſion of the foundation of Marſeilles, ſays the ſterility of its territory compelled the citizens to be induſtrious, in order to ſupply what nature denied them.

The ſoil of the ancient Provence is almoſt entirely of the ſame nature, and nothing but induſtry, attended with the moſt laborious perſeverance and the greateſt expence, could ever have rendered theſe parts fertile. But this fertility, forced for upwards of two thouſand years, is an additional cauſe of the degeneracy of the ſoil, and if it be conſidered what a diſcouragement the aridity of the climate (which annually increaſes owing to the total deſtruction of the woods,) muſt have been to farmers, their indefatigable efforts to obtain ſome productions from this ungrateful ſoil cannot but excite aſtoniſhment. Yet there is no country that produces ſo great a quantity of precious vegetables, or that preſents to the view of the obſerver a more pleaſing, more varied, and more laboured cultivation. The induſtry of the firſt cultivators of this country knew how to turn even the moſt barren rocks to account. Wheat, grain of every kind, pulſe, all ſorts of fruit trees, but principally the vine and olive, are there cultivated. The ancient method of culture is ſtill followed by the farmers with little variation, and produces a gradual and indeed annual deterioration of their property.

The author who had made theſe important ſubjects his ſtudy for above twenty years, has aſcertained the original and accidental cauſes of this degeneracy. He is convinced that if it be ſometimes occaſioned by the nature of the ſoil and climate, it muſt more frequently be attributed to the ignorance, and he has attempted as much as poſſible to diminiſh the influence of former, and to correct thoſe which originate in the negligence of farmers, by methods of improvement yet unknown.

He has aſcertained that the ancient mode of cultivation is the only one ſuitable to this ungrateful ſoil; but that the farmers of the preſent day being more negligent and leſs induſtrious, are continually removing farther from the principles to which ancient cultivators of theſe parts owed their ſucceſs, and which is an additional cauſe of their degeneracy.

From numerous experiments he concludes, that the art of breaking up and laying down lands, and of farming plantations, is ſtill in its infancy. And this moſt eſſential branch of agriculture, by which alone the ſoil can be regenerated, is the moſt important object of the inſtructions he has publiſhed for the benefit of his fellow citizens.

His work conſequently contains two parts. The firſt explains to the proprietors, the ancient method of cultivation, the cuſtoms

and rules which farmers have abandoned, and the abuſes introduced by the indolence, negligence, and frequently the immorality of thoſe to whom proprietors are obliged to entruſt the management of their concerns.

He calls their attention to all theſe ſubjects. In this manner he analyſes the cuſtoms and rules of agriculture, he demonſtrates their excellence by reaſoning grounded on the nature of the ſoil, climate, and productions. He proves, by the ſucceſs of his experiments, the improvement of which this method is ſuſceptible.

Suiting himſelf always to the meaneſt capacity, his inſtructions poſſeſs that clearneſs and plainneſs which render them uſeful to every one.

The different operations for vines, olive trees, and for land intended to be ſown; the ſeaſons proper for thoſe various operations, the weather ſuitable for performing them, the methods of counteracting the prejudicial effects of bad management, the abuſes introduced through the ignorance of farmers; the rules of agriculture which according to ancient cuſtom form a kind of rural code, regulating the reſpective intereſts of proprietors and their ſervants, the annual harveſting of the moſt valuable crops cultivated in thoſe parts; the important theory of manures, the manner of preparing and employing them according to the quality of the ſoil, and the various productions; laſtly, the danger of abandoning the ancient modes of culture, and the incalculable loſſes proceeding from their diſuſe,—ſuch are the ſubjects of the firſt part of this work, which may juſtly be conſidered as an elementary one.

The ſecond part, which is of ſtill greater importance, being particularly deſigned to improve the ſoil, its productions and culture, only concerns proprietors, and treats of every thing belonging to the management of a farm.

The vine and olive, the moſt valuable vegetables naturalized and cultivated in theſe diſtricts, appeared to claim his particular attention. He was particularly ſtruck with the decay to which they are ſubject. But without attributing it like moſt other agriculturiſts to the inclemency of the climate and the ſeverity of the ſeaſons, he has ſought its cauſes, and found them in certain errors in their cultivation, in the thoughtleſs methods of planting and re-producing them from ſtocks degenerated by time or by accidental cauſes, and in the faultineſs of common practice.

The knowledge and employment of different kinds of land proper for the vine and olive, the ſituation and aſpect of the ſoil, its preparation and diſpoſition when cleared and replanted, the preparation and ſelection of the different kind of plants according to the nature of the ſoil; the method of planting, rearing, propagating, and treating them when diſeaſed, of deſtroying whatever is inimical to them, of preſerving them in a ſtate of fecundity, to improve their productions and keep them, as well as their fruits, from every thing that might injure them; and laſtly, the means of ameliorating an impoveriſhed ſoil—all theſe objects are treated of methodically, in the ſecond part. The precepts of proceſſes which the author inculcates preſent to agriculturiſts methods hitherto unknown, of the ſucceſs of which they are aſſured by phyſical demonſtration.

In this manner he treats of the culture of the vine and olive, which may be ſaid, in many reſpects, to be in its infancy, from the principle of their reproduction to the ceſſation of their growth. The ſimplicity and utility of the methods and proceſſes he preſcribes, render their application the more eaſy, and demonſtrate their neceſſity and advantages.

There doubtleſs exiſt particular treatiſes on the cultivation of thoſe productions, but ſome recommend methods, the ſucceſs of which is grounded only on experiments made in other countries, and are inapplicable to the nature of the ſoil and the aridity of the ſouthern provinces. Others have with great trouble analyſed the diſeaſes of theſe vegetables, and aſcertained the different ſpecies of inſects which attack and deſtroy their fruits, and particularly thoſe which injure the olive. But they have not preſcribed any methods of cure for the moſt common diſeaſes of thoſe trees, nor the means of deſtroying their enemies. But moſt of theſe treatiſes poſſeſs rather the merit of erudition than that of inſtruction, and being ſuited to the capacity of farmers; nor can any of them be conſidered like the preſent work, univerſal treatiſe on agriculture for thoſe provinces.

III. *Facts and Obſervations relative to Sheep, Wool, Ploughs, and Oxen; in which the Importance of improving the ſhort-wooled breeds, by a Mixture of the Merino Blood is deduced from actual Practice. Together with ſome Remarks on the Advantages which have been derived from the Uſe of Salt.* By John Lord Somerville, 8vo. 3s. 6d.

To the meritorious and patriotic exertions of men diſtinguiſhed for birth, affluence, and talent, this country is doubtleſs indebted for the improvements lately made in almoſt every branch of practical agriculture. The improvement of our breeds of ſheep in particular has engaged that portion of attention ſo juſtly due to the important ſubjects involved, the ſtaple manufacture of the kingdom, and the ſupply of the public markets.

Amongſt the moſt zealous labourers in a cauſe, in which not only the nation at large, but each individual is more or leſs concerned, muſt be placed the late Preſident of the Board of Agriculture. Of his exertions for the advancement of his favourite purſuit, whilſt in that diſtinguiſhed ſituation, we need not here remind the reader. Our object is to make him acquainted with the freſh proof his lordſhip has given, in the pamphlet before us, of his unwearied aſſiduity to extend the knowedge of whatever may be beneficial to his country.

The principal object of the work here announced, is to ſhew the ſuperiority of the Spaniſh Merino or croſſes from that breed, both in the quality of their fleece and of their meat. "No ſpeculative opinions (ſays his lordſhip) are here brought forward, but the author has, without any embelliſhment of language, adduced ſuch facts as have, for ſome years paſt confirmed, and ſtill continue to confirm, that of which as a matter of duty rather than of inclination, he was led to treat. He has now brought theſe ſubjects to a concluſion, and he truſts a ſatisfactory one."

The noble author begins by detailing from actual experience the advantageous reſults from croſſing the Ryeland and Spaniſh breed.—"Eighty-ſix ewe hogs of this mixed breed carried 235lb. 3 oz. of well-

waſhed wool, which at 3s. 2d. per pound amounted within a very few ſhillings to 37l. per pack. After the committees of the Bath Agricultural Society's deciſion, its value may ſafely be rated at 3s. 6d. per pound, or 42l. ſterling, per pack. The croſs with our South Down ſheep, both with reſpect to the frame and wool, keeps pace with that of the Ryeland. Having a flock of each ſort I am unable to give the preference to either."

We can ſtate from good authority that the price mentioned by his lordſhip of the half Spaniſh wool, is the current price at market, and that there is a conſtant demand for it.

His lordſhip very juſtly laments, that the public in general are ſuch ſlaves to ſize in the purchaſe of meat, and obſerves that the ſmall ſheep, firm in its grain, is without doubt a more marketable commodity. In confirmation of his own opinion, and the argument he advances, he ſays: "One of the firſt cutting butchers in London has often been heard to ſay, that he could not afford to buy fat coarſe-grained ſheep; for that beſides the loſs in ſpine fat, which he was obliged to cut from roaſting joints, there was not lean enough to ſupport the fat, which therefore roaſted away; and that ſo long as meat bears a better price than tallow, ſo long he muſt deal in South Downs, and ſheep of that deſcription."

The work of M. Laſteyrie on the Introduction of the Merino breed into the various countries of Europe, engages a conſiderable portion of his lordſhip's atrention,

The obſervations on the advantages that have been derived from the uſe of ſalt for oxen and ſheep, appear to deſerve the ſerious conſideration of agricultural men. The practice, his lordſhip believes, is not to be found any where in the kingdom, excepting on his own eſtates; but doubtleſs its beneficial effects need only to be publicly known in order to make it generally adopted.

In a letter to M. François de Neufchateau Lord Somerville very clearly demonſtrates the ſuperiority of his patent double-furrowed plough, over thoſe in common uſe. This is ſucceeded by an account of the cattle ſhows of 1802 and 1803, at Langhorn's Repoſitory for premiums offered by his lordſhip. With regard to thoſe offered for oxen he ſays: "Our only object is the introduction of oxen in the labour of huſbandry, and by no means to advance one good working breed at the expence of another."—He then proceeds: "How many millions of money have been expended in procuring corn by importation within the laſt four years, and how cruelly thouſands of our fellow ſubjects have ſuffered from the want of bread, need not here be urged, for the occurrence is too freſh in every memory; but we are bound to repeat what before has been advanced, and without contradiction; that taking the number of heavy cart-horſes at 500,000, which probably comes far ſhort of the actual number; and admitting 200,000, from local circumſtances to be uſeful, the remaining 300,000 are totally ſuperfluous, the latter conſume at the rate of one peck of corn per day for nine months in the twelve, ſixty-three buſhels per annum, which nearly equals thirty-ſix buſhels of wheat, equal to the average bread of ſeven perſons, during the whole year, whereby it cannot be denied that 300,000 cart-horſes conſume the bread corn of 2,100,000 perſons, which admitting the population to be ten milllions

of perſons (Ireland not included) is more than a fifth part of the whole, and which cannot have coſt much leſs than twenty millions of money. We alſo ſtated a circumſtance worthy to be repeated; that in the year 1754. the inordinate uſe of cart horſes began to prevail, treſpaſſing in many inſtances on the natural inhabitant the ox: about the very ſame year our exports of corn began to abate, and they have kept pace with each other: in 1774 theſe exports, except in an inſtance or two, ceaſed altogether; from that time the import commenced, and has, together with an immoderate uſe of cart-horſes, increaſed to this day. They have gone hand-in-hand together."

This much will be ſufficient to ſhew the utility of this little work, and the patriotic intentions of its noble author, in preſenting ſuch facts to the conſideration of landed proprietors and farmers in general, as if duly attended to, cannot fail of producing incalculable national benefit, as well as great individual emolument.

HISTORY.

National Transactions.

GREAT BRITAIN.

IN the appearance of the political hemiſphere, little if any alteration has taken place ſince our laſt. With regard to the queſtion of peace or war, policy muſt declare in favor of the former, but yet the preſent armament muſt be conſidered a matter both of prudence and neceſſity. The ſpirit with which we have engaged in it will be a uſeful leſſon to the Firſt Conſul, and teach him that we can puniſh any aggreſſion or reſent any inſult that threatens to endanger the ſecurity, or tarniſh the honor of the nation.

An account is ſaid to have been received from the Cape of Good Hope, ſtating the ſurrender of that colony to the Dutch forces ſent thither for the purpoſe of taking poſſeſſion of it.

We ſhall proceed to our uſual brief ſtatement of the proceedings of Parliament, previous to its adjournment for the Eaſter receſs.

HOUSE OF LORDS, *Monday, March* 21. Lord Carliſle moved for a return of the number of artificers employed in the dock yards from the month of May laſt to the preſent time. The motion was objected to by Lord Pelham and the Lord Chancellor, who obſerved, that nothing had been brought forward in ſupport of it; it was accordingly withdrawn.

Tueſday, March 22. The Iriſh poſtage bill was read a firſt time.

Wedneſday, March 23. The Paddington canal bill was read a third time and paſſed. The Iriſh Bank reſtriction bill a firſt time, and the Iriſh poſtage bill a ſecond time.

Friday, March 25. Lord Pelham preſented a Meſſage from his Majeſty (ſimilar to the one preſented on Thurſday in the lower Houſe) which was ordered to be taken into conſideration on Monday. The ſecond conſideration of the inſolvent debtors' bill was ordered for Thurſday.

Monday, March 28. Lord Ellenborough, in conſequence of having moved for the poſtponement of the Iriſh chalking bill, preſented a new bill to the Houſe, the ſecond reading of which was referred to the firſt Tueſday after the the Eaſter receſs.

Tueſday, March 29. The militia officers' bill, the clergy reſidence bill, and ſeveral other bills were brought up from the Houſe of Commons, and read the firſt time.

Wedneſday, March 30. The clergy reſidence ſuſpenſion bill was read a ſecond time, after ſome obſervations from the Biſhop of St. Aſaph, who objected to the continuation of the ſuſpenſion.

Thurſday, March 31. On the ſecond reading of the militia officers' bill, Lord Carnarvon roſe and made ſeveral objections to it, conſidering it a decided departure from the principles on which the militia of the country was originally founded. He was replied to by Lord Hobart and the Duke of Montroſe, and after a long converſation, the queſtion being put, there appeared—Contents 41, Non-contents 2. The bill was accordingly read a ſecond time, and committed for Monday.

The Houſe in a Committee on the clergy reſidence ſuſpenſion bill, the Biſhop of St. Aſaph renewed his objections, and moved an amendment, that in place of the words, "8th of July," the words "13th of May," be inſerted. The Lord Chancellor, Lord Alvanley, and Lord Ellenborough, ſpoke in favour of the 8th of July, principally on the ground that it would give more time to the learned and right honourable gentleman in the other Houſe to bring forward his intended bill; they at the ſame time declared their intention of oppoſing any future ſuſpenſion bill. The amendment was accordingly withdrawn, and the bill went through a Committee.

Friday, April 1. The clergy reſidence ſuſpenſion bill was read a third time and paſſed.

HOUSE OF COMMONS, *Monday, March* 21. The clergymans' non-reſidence bill was read a ſecond time. The reſolutions of the Committee on the India Budget were read and agreed to. The Maſter of the Rolls gave notice, that he ſhould ſhortly move for leave to bring in a bill to exempt the Roman Catholics of this country from taking any oaths but the oath of allegiance, to entitle them to the benefit of the 18th of the King.

Tueſday, March 22. The report of the Committee on the petition of the woollen manufacturers was ordered to be taken into conſidertion on Tueſday next. The Grenada loan bill was read a ſecond time, and the Iriſh bank reſtriction bill a third time, and paſſed. The Houſe in a Committee on the clergy non-reſidence bill, the blank for the time of its limitation was filled up with 8th of July next. The Houſe went through a Committee of the militia officers' bill; ordered to be reported on the morrow.

Wedneſday, March 23. A new writ was ordered for Brackley, in the room of General Egerton. The Roman Catholics bill was brought up and read a firſt time. The Houſe in a Committee of Supply; the Chancellor of the Exchequer ſtated the whole ſum that would be neceſſary at preſent amounted to 909,000l. On the report of the militia officers' bill, Mr. Windham made ſeveral objections to the appointment of officers not duly qualified; to obviate which in ſome meaſure, the Secretary at War moved a clauſe, by which the Lord Lieutenants ſhould not have power to appoint unqualified perſons to any rank higher than that of captain. The bill was ordered for a third reading on Monday.

Thurſday, March 24. The report of the Committee on the Great Grimſby election was ordered to be taken into conſideration on Friday April 1. The non-reſidence clergy's bill was read a third time and paſſed. Committee were ballotted to try the merits of the election for Oakhampton and Glaſgow, Renfrew, &c.

The Chancellor of the Exchequer preſented to the Houſe the following Meſſage from the King:

"His Majeſty having taken into conſideration the eminent ſervices of Sir James Saumarez, Bart. and particularly the brilliant victory obtained by him and the ſquadron of ſhips under his command, over a ſuperior ſquadron of Spaniſh ſhips in the Streights of Gibraltar, on the memorable 12th of July, 1801. has thought it neceſſary to confer upon him an annuity of 1,200l. a year during his natural life; and recommends the ſame to the conſideration of this Houſe." Ordered that his Majeſty's Meſſage be entered on the Jour-

nals, and that a Committee of the whole Houſe do take it into conſideration to morrow.

Friday March 25. In a Committee on his Majeſty's Meſſage, the Chancellor of the Exchequer moved, "that the annual ſum of 1,200l. be granted out of the Conſolidated Fund, to his Majeſty, in order to be ſettled on Sir James Saumarez, Bart. for life; and the ſame annuity do commence from the day of the action fought in July, 1801, off Algeſiras," agreed to. The Houſe in a Committee of Ways and Means, the Chancellor of the Exchequer moved "that the further ſum of four millions be granted to his Majeſty by loans on Exchequer bills—agreed to, and ordered to report on Monday.

Monday, March 28. The militia officers' bill was read a third time and paſſed.—Leave was given to the Secretary at War, to bring in a bill for increaſing the allowances made to innkeepers for ſoldiers billetted on march. The reports of the Committees of Supply reſpecting Sir J. Saumarez, and of the Committee of Ways and Means, were read and agreed to, and bills ordered.

Wedneſday, March 30. The Houſe went through a Committee on the Grenada Loan bill, and the chairman reported progreſs, and aſked leave to ſit again.

Thurſday, March 31. The Roman Catholics' oath bill was read a third time, and paſſed.—The Grenada Loan bill, Sir J. Saumarez's annuity bill, the four millions loan bill, and the American commiſſioners' bill, were ſeverally committed, and the reports ordered for to-morrow. The innkeepers' allowance bill was read a firſt time, and ordered to be read a ſecond time to-morrow

Friday, April 1. The St. Pancraſs workhouſe bill went through a Committee. The woollen manufacturers petition was ordered to be taken into conſideration on Wedneſday. The innkeepers allowance bill was read a ſecond time. Sir James Saumarez's annuity bill went through a Committee. Adjourned.

Monday, April 4. Sir James Saumarez's annuity bill, and the four millions Exchequer Bills bill, were read a third time and paſſed.

Thurſday, April 5. Leave was given to bring in a bill, authoriſing the Lord Chancellor and the Lords Keepers of the Great Seals of Great Britain and Ireland reſpectively, to direct the ſale, on mortgage, of the freehold properties of lunatics. Mr. Tierney moved an account of the ſums paid into, and charges upon the conſolidated fund, from the 5th of January, 1802, to the 5th of January, 1803, diſtinguiſhing the quarters. He alſo moved for an account of the net produce of the taxes for the one year, ending the 5th of January, 1803, diſtinguiſhing the quarters. Both accounts were ordered.

On the motion for the ſecond reading of the coroners' increaſed allowance bill, Mr. Shaw Lefevre moved an amendment, by inſerting inſtead of the word "now," the word "this day ſix months;" on which the Houſe divided, when there appeared for the amendment 49, againſt it 61. The bill was accordingly read a ſecond time, and ordered to be committed.

The report of the Committee on the Iriſh Revenue Act was brought up and agreed to. The American commiſſioners bill was read a third time and paſſed.

Wedneſday April 6. The Lunatics property bill was read a firſt time, as was alſo the bill continuing the Iriſh Revenue Acts. The Houſe in a committee of ſupply, it was ordered on the motion of Mr. Tierney, that 12,650l. be granted to George Martin, jun. an American Loyaliſt.

Sir W. Scott, after a prefatory ſpeech, moved "That leave be given to bring in a bill to regulate the mode of ſpiritual perſons holding farms, and to render more effectual the reſidence of the Clergy." Granted.

Thurſday April 7. The Innkeepers' ſubſiſtence rates bill was read a third time and paſſed. The Houſe went into a Committee on the various acts

propoſed to be repealed by the Committee on the Woollen Clothiers petition, and leave was given to bring in a bill for repealing, altering, and amending the proviſions, regulations, and diſpoſitions of the ſaid acts, ſo far as the ſame relate to the length, breadth, and weight, to the tempering, ſtretching, and ſtraining, of woollen cloth, to the boiling of wool, &c.

The report of the Committee of Supply was brought up and agreed to.

The Chancellor of the Exchequer brought up the bill for amending and rendering more effectual the law relating to ſpiritual perſons holding farms, and inforcing parochial reſidence—read a firſt time, and ordered for a ſecond reading on Thurſday the 21ſt inſtant.

The report of the Committee on the Grenada Loan Bill was brought up, and after a ſhort diſcuſſion agreed to.

On the motion of Mr. Addington, it was agreed that the Houſe adjourn to Tueſday the 19th inſtant. Mr. Patten having previouſly given notice of his intention to move an enquiry into the conduct of his Majeſty's Miniſters immediately after the receſs.—Adjourned.

SWITZERLAND. In Switzerland there are daily indications of the ſtubborn ſpirit of independence which ſtill reigns in the Cantons. Schwitz has elected the patriot General Aufder Maur, to be the Captain General of the Militia.

An addreſs of thanks was voted to Bonaparte, on the ſpecific ground that he had reſtored to them their ancient conſtitution, the only one adapted to the wants, or conſiſtent with the wiſhes, of the people. In all the Cantons where the feweſt changes have been introduced, the inhabitants appear more diſpoſed to reſume peaceful habits. In the ariſtocratic Cantons a ſpirit is daily diſcovering itſelf, which nothing but the preſence of French troops can prevent from breaking out into acts of direct hoſtility to the conſtituted authorities.

ITALY. It was lately ſtated that the independence of Malta was to be guaranteed by Ruſſia and Pruſſia. That appears to have been falſe. The artifices of France with regard to Malta are ſtill more apparent, from the circumſtance of Thomaſi, the newly appointed Grand Maſter, being the creature of Bonaparte; and his Lieutenant, M. De Buſy, being, contrary to the ſpirit of the Treaty of Amiens, a Frenchman.

M. de Thomaſi, the Grand Maſter, diſpatched M. de Buſy, inveſted with full power to take poſſeſſion of the iſland, where he arrived on the 28th of February. His firſt ſtep was to demand the delivery of the place, to which he received only a verbal anſwer in the negative, from the Britiſh Governor; but not ſatisfied with this, he wrote a letter, containing a formal demand of the place, in virtue of the 4th paragraph of the 10th article of the Treaty of Amiens. To this addreſs Sir A. Ball returned an explicit anſwer, ſtating, that as ſome of the Powers invited by the terms of the 10th article of the Treaty to guarantee the independence of Malta, had not yet acceded to that meaſure, he did not think himſelf authorized to put an end to the Government of his Majeſty in that iſland, until he received ſpecial inſtructions from his Court.

Accounts from Genoa ſtate that if a rupture takes place between France and England, a numerous Corps of French troops will proceed to Sicily, with the conſent of the King of Naples, to undertake from thence an expedition againſt Malta. The coaſts of Genoa and Tuſcany have been put in the beſt ſtate of defence. The garriſons of the iſlands of Elba and of Corſica have been reinforced. General Murat will command in Chief in Italy.

GERMANY. Should hoſtilities be unfortunately renewed between England and France, his Imperial Majeſty, it is ſaid, is determined to obſerve a *ſtrict ſyſtem of neutrality*. This reſolution has been communicated to the Ambaſſadors of thoſe nations. The neutrality of Auſtria is to be moſt rigidly obſerved in the harbour of Trieſt, and the other ports which the Emperor poſſeſſes in the Mediterranean. The harbours are to be open to the men of war

and merchantmen of both nations, who may alſo take in proviſions there. It being, however, Bonaparte's avowed ſyſtem, in caſe of a rupture, to ſet every Continental Power againſt Great Britain, this determination has been received with apparent diſpleaſure by the French Ambaſſador Champagne.

The Auſtro-Venetian country will, it is ſaid, be divided into ſeven provinces, viz. Venice and Dogado, the Friule, Treviſo, Padua, Vicenza, Verona, and Bellune, each of which will be governed by a Provincial Captain.

A deficit to the amount of two millions has been diſcovered in the Imperial Treaſury of Vienna. Some perſons ſtrongly ſuſpected, have been arreſted.

The marriage of the Archduke Palatine with the Princeſs of Baden, who is now at Peterſburgh, will be celebrated at Cracow, where the Emperors of Germany and Ruſſia will meet upon the occaſion.

FRANCE. The Firſt Conſul continues his preparations with unabated aſſiduity, doubtleſs in expectation of overawing the Britiſh government into an acceſſion to his demands. Yet the general opinion even in France, appears to be that no rupture will enſue. The vigorous meaſures of the Britiſh government are ſtated to have been as unexpected as they were unwelcome to his Conſular Majeſty

The differences between the United States and Spain, on the ſubject of the Miſſiſſipi, are ſaid to be in a train of adjuſtment, through the mediation of the Firſt Conſul, who has informed the American miniſter at Paris, that the interruption of the navigation of the Miſſiſſipi, had been the reſult of miſtake, and that meaſures ſhould be adopted in the cabinet of Madrid to remove all ſubjects of complaint.

Some of the expeditions fitting out for the colonies have been countermanded, and the troops will be employed in the defence of the coaſts, or perhaps in an attempt at invaſion, ſhould the negociations terminate unfavourably to the continuance of peace.

The plan which was lately preſented to the French legiſlature reſpecting the National Bank, has been withdrawn, and one entirely different preſented in its ſtead. The provisions of the new project are as follows: "The capital of the Bank of France ſhall conſiſt of 45,000 ſhares of 1000 francs each principal ſtock, beſide reſerved ſtock. There ſhall be no new call upon theſe ſhares. The yearly dividend from the 1ſt Vendemiaire, year 13, (Sept. 23, 1804,) ſhall not exceed ſix per cent. on each ſhare of 1000 francs. The exceſs of the profits over the annual dividend ſhall be converted into a reſerved fund. The reſerved fund ſhall be converted into five per cent. conſol ſtock, on which a ſecond dividend ſhall take place. The preſent reſerved fund ſhall be equally converted into five per cent. conſol ſtock. The dividend for the laſt ſix months of the year 11, ſhall be regulated agreeably to the old uſages of the bank. The dividend for the year 12 ſhall not exceed eight per cent. including the dividend from the reſerved fund."

HOLLAND. The reſult of the uncertainty as to peace or war, is a total ſtagnation of Dutch commerce. All the ports are filled with veſſels inactive; the merchants receive no commiſſion, nor dare they venture to give any: all the great enterprizes for which the government has eſtabliſhed prizes, or rather encouragements, remain unexecuted. The Greenland Whale Fiſhery, and Commercial Expedition to China, which ought to have by this time departed, ſtill wait the iſſue of the negociation.

It is ſaid, that in the event of a rupture, the Batavian government will equip twelve ſhips of the line, ſix frigates, and ſome other veſſels. But this meaſure would have no effect under the preſent circumſtances, as in caſe of a war with England, the Dutch ports would be blocked up by a ſuperior fleet. Such an armament, beſides, muſt be equipped with exceſſive difficulty, in the preſent critical ſituation of the finances.

Beſides the French troops that have already arrived, four battalions of Infantry and three ſquadrons of huſſars, are to follow them immediately. It

is certain that the head-quarters of these troops will remain at Breda, as long as the negociations continue.

Flushing has suddenly become the theatre of the most active military movements, and, by the dispositions of the French, it is already thrown, as it were, into a state of war. But what has more surprised and alarmed the inhabitants, is the publication of a consular decree, by which the town is put in a state of siege, and subjected to the government of a French general.

By an express order from the first consul, the Louisiana expedition is definitively suspended. The French general has debarked the troops that were on board the vessels; they will proceed, with the other troops newly arrived in this republic, to different destinations, both on the frontiers and elsewhere. In several of the Dutch towns, among others, at Nimuguen and Grave, their entrance was at first opposed by the commandants of the Dutch garrisons; but after an ulterior explanation, these commandants thought fit to yield to necessity and force.

Sr. Domingo. Dispatches received at Paris from St Domingo, to the 4th of March, states, that a detachment of 4,000 men had arrived from France, and the remainder of the reinforcements were expected daily. The army would then be able to resume offensive operations. It appears that the blacks had again shewn themselves on the plain, but were defeated with loss. The north is cleared of the insurgents; in the west the French extend to Mirebalais. The brigands are in the interior on the Mornes, between the north and the west. The black chiefs are represented to be discontented with each other, and some of them have been shot by their colleagues. The Spanish part remains untouched.

Agriculture.

HIGHLAND SOCIETY HALL.

EDINBURGH, 11th FEB. 1803.

THE Highland Society of Scotland, do hereby advertise, that they are to give the undermentioned PREMIUMS for ESSAYS and COMMUNICATIONS, bringing Barren Lands into Culture, with other Improvements in Agriculture; and also for Meliorating the Breed of Black Cattle, for the Year 1803.

ESSAYS.

CLASS FIRST.

A Gold Medal or Piece of Plate, of the value of Sixty Pounds sterling, will be given for the best and approved Essay or Communication

"On Peat Mosses, their diversity in respect to origin, situation, and present condition, and the circumstances requiring attention in their cultivation for bearing crops, in the preparation of peat as a manure, and in winning it for fuel."

It is expected in this essay that an account will be given of the implements, with drawings of any new ones employed in the draining and cultivation of mosses, and of the species of crops, and modes of management, adapted to mosses of different descriptions, with a statement of any facts or experiments tending further to illustrate these subjects.

CLASS SECOND.

A Gold Medal or Piece of Plate, of Fifteen Guineas value, will be given for the best and approved Essay on any of the following Subjects:

1st, "On the introduction of Sheep Farming into the Highlands of Scotland, and particularly whether the general and indiscriminate introduction of sheep husbandry will ultimately prove beneficial to the proprietors, the farmers, and the public at large; the extent to which sheep farming may be attempted, with a prospect of advantage, on the situation and circumstances in

which it promiſes to anſwer beſt, and on the means by which it may be accompliſhed with leaſt inconvenience and moſt benefit to all concerned."

It is the wiſh of the ſociety, that any writer treating of this important ſubject ſhould give a view of the comparative utility of cattle and ſheep, in relation to the Highlands, the ſeveral departments of rural induſtry purſued therein; the diſtance of the Engliſh markets, and ſuch other circumſtances as appear to be connected with the ſubject.

2d, "How far do froſts and conſiderable degrees of cold retard, or totally prevent the farther filling and ripening of corn, particularly oats? And in what ſtates of vegetation on approaching ripeneſs are the worſt effects to be apprehended? What are the ſtages of growth and ripeneſs? And what are the peculiar ſtages of the weather, and other circumſtances, in which corn, particularly oats, are rendered unfit for ſeed? And to what degree, and by what appearances, can the point of diſtinction between the good and the bad ſeed be readily aſcertained."

N.B. The ſociety is very deſirous of receiving the moſt accurate anſwer to theſe queries reſpecting corn, and it is therefore expected, that when the author draws inferences, they are to be ſupported by practical facts, or correct and well authenticated experiments, on ſuch a ſcale as may warrant a general concluſion.

CLASS THIRD.

1ſt, A Gold Medal or Piece of Plate, of Forty Guineas value, will be given to the Perſon who ſhall, on or before the 20th of November 1804, lodge with the Deputy Secretary of the Society, the beſt and approved Eſſay or Communication

"On the Accidents and Diſorders to which Sheep are liable, and particularly on thoſe deſtructive diſeaſes to which, in many ſituations and ſeaſons, they are incident, called in different parts of Scotland, the one by the name of braxy or braxit, or the ſickneſs, and the other by that of rot or the poke, &c. on the variety or different kinds of theſe diſorders, the cauſes inducing them, and the means of preventing or removing them in different caſes."

As there is reaſon to apprehend, that diſorders of different ſorts are included under each of theſe two general names, the ſociety wiſh that, ſo far as may be uſeful, a deſcription ſhall be given of the appearances which occur on opening the body of animals afflicted with any of theſe diſtempers.

2d, As alſo, a Gold Medal or Piece of Plate, of Twenty Guineas value, will be given to the perſon who ſhall, on or before the 20th of November 1805, lodge with the Depute Secretary the beſt and approved Eſſay or Communication

"Concerning ſuch of our Native Plants, particularly the Graſſes, as are moſt deſerving of culture, with the view of affording herbage for paſture or hay, diſtinguiſhing the climate and ſoil reſpectively adapted for them, and the time and manner of collecting and ſowing their ſeeds, or of otherwiſe propagating them; taking notice of the different ſpecies which are particularly preferred by cattle, horſes, and ſheep."

The premium for this eſſay is to be given under the following conditions:—To prevent confuſion and miſtake, the number of the ſpecies, of which an account is to be given, muſt not be under five nor above fifteen; and freſh or dried ſpecimens of the ſeveral plants, with a ſmall portion of the ſeed of each, are to be delivered along with the eſſay to the ſecretary.

CLASS FOURTH.

A Gold Medal or Piece of Plate, of Twenty-five Guineas value, will be given for the beſt and approved Eſſay or Communication on the following Subject.

And a Gold Medal or Piece of Plate, of Ten Guineas value, for the ſecond beſt and approved on the ſame Subject.

1ſt, "The natural hiſtory of Herrings, particularly marking their ſeaſons and mode of ſpawning, and the places they prefer for that purpoſe, their route

from thoſe places while in a ſtate of fry to maturity, the progreſs of their growth and nouriſhment during the time they uſually appear on the different parts of the coaſts and ſeas of Great Britain and Ireland, the varieties of them both as to ſize and quality, when they appear, and the changes that occur in theſe reſpects during the courſe of the ſame ſeaſon, and whether thoſe changes appear to be uniform or caſual, whether the rapidity of the tides, the depth of the water, or age of the fiſh, may have any effect in inducing or increaſing theſe varieties, or whether they may be owing to their being different and diſtinct ſpecies of herrings. Alſo the cauſes, ſo far as can be diſcovered, why they prefer one part of the coaſt to another, and ſometimes deſert their uſual haunts. Whether certain, and what modes, of fiſhing, have a tendency to diſturb the fiſh, and render the fiſhing leſs productive."

CLASS FIFTH.

A Gold Medal or Piece of Plate, of Ten Guineas value, will be given for the beſt and approved Eſſay or Communication, on any of the following Subjects, viz.

1ſt, "Upon the cauſe and origin of Moſs or Fog, which is ſo prevalent in the paſture grounds in Scotland; the beſt method to prevent and eradicate it, without ploughing up the ground for cropping."

It is expected that any writer treating of this ſubject will give an account ſo far as falls within his knowledge, of the methods already practiſed for eradicating the ſpecies of moſs or fog, referred to in the queſtion, with the ſucceſs attending them.

2d, "What is the beſt method of raiſing and training hedges on poor or expoſed lands, for the purpoſe of incloſures, and what kinds of plants ſucceed beſt in ſuch ſoils and ſituations."

3d, To the perſon in Scotland who ſhall on or before the 1ſt of December 1803, tranſmit to the depute ſecretary of this ſociety, a ſatisfactory ſtatement in writing of his having within the ſix years preceding that period, ſucceſsfully improved and brought into tillage the greateſt proportion of lands not hitherto in culture, and not leſs than twenty Scots acres."

The ſtatement to contain an account of the mode of cultivation, the expence attending it, the nature, quality, and value of the crops, and the ſituation of the ground previous to the improvement.

RULES OF COMPETITION.

In all theſe eſſays or communications it is expected that when facts not generally known are ſtated, they will be authenticated by proper references; and alſo, that the eſſays ſhall be written in a fair and legible hand. The ſociety would likewiſe recommend, that one page of the folio may be left blank, for any obſervations that may occur to members of the ſociety on peruſal.

Each eſſay or communication required to be given in, in the year 1803, muſt be lodged with the depute ſecretary of this ſociety, on or before the 10th November next, except as to the deſcription of the improvement of barren land, which is to be lodged by the 1ſt of December next. The periods fixed for lodging the eſſays on the diſeaſes of ſheep, is 20th November 1804, and on our native plants or graſſes, 20th November 1805, as above ſtated. Each eſſay muſt be inſcribed with ſome diſtinguiſhing mark or device.

A ſealed note containing the author's name, and inſcribed on the back with the mark, motto, or device, of his eſſay, muſt be lodged at the ſame time with the eſſay, and when the motto or mark on the eſſay or ſealed note is neglected by the author, ſuch eſſay will not be allowed to complete for any premium.

N. B. None of the ſealed notes, except thoſe which bear the diſtinguiſhing mark, motto, or device of a preferred eſſay, will be opened, and the ſociety are to be at liberty to publiſh the eſſays, for which premiums ſhall be adjudged, or ſuch parts of them as they ſhall think proper to be communicated to the public, and ſuch eſſays as are not found entitled to any premium will

be returned to the author when called for. Further, upon application from the gainer of any of theſe premiums, the ſociety in ſuch caſes as they may ſee proper, will allow them to be paid in money.

INVENTION OF A REAPING MACHINE.

To the perſon who ſhall invent the beſt and moſt approved machine for reaping, which upon trial ſhall be found, to the ſatisfaction of the ſociety, uſeful in ſaving labour and expence, ſimplicity of conſtruction being deemed an eſſential part of its merits, a Gold Medal or Piece of Plate of Ten Guineas value, or that ſum in money.

N. B. A ſpecimen of the machine to be lodged with the depute ſecretary on or before the 1ſt December next. By order of the directors,

LEWIS GORDON, Dep. Sec.

Suſſex Agricultural Society.

At a general meeting of the ſubſcribers of the Suſſex Agricultural Society, to arrange the prizes and premiums for the preſent year, held at the Star Inn, Lewes, March 16, 1803, the following reſolutions were agreed to:

PREMIUMS FOR SHEEP SHEERERS.

1. That Ten Pounds be given to three ſheep ſhearers who ſhall ſhear thirty ſheep each in one day, (to be taken out of the ſame flock) in the beſt and moſt workman like manner, viz. ſhearing the cloſeſt, and clipping off the greateſt quantity of wool, and doing the leaſt injury to the ſheep, by cutting them or otherwiſe, viz.

To the beſt ſhearer	Five Pounds.
To the ſecond beſt	Three Pounds.
To the third beſt	Two Pounds.

To be determined by three judges to be appointed for that purpoſe. A committee of all the ſubſcribers will meet on the third Saturday in May next, at the Star Inn, Lewes, at four o'clock in the afternoon, to appoint the judge to chooſe the flock, and to fix the day for the ſhearing, of which notice will be given in the Lewes Journal.

PRIZES FOR CATTLE AND SHEEP.

2. That Ten Pounds be given to the owner of the beſt bull, two years old.

3. That Ten Pounds be given to the owner of the beſt bull, three years old.

4. That Ten Pounds be given to the owner of the beſt bull, four years old, or upwards. No bull having gained two of the above prizes can be ſhewn for a third.

A piece of plate, value Ten Pounds, was adjudged at the ſhew of cattle in 1801, to Mr. Allrey, of Friſton, the owner of the beſt bull produced in the field, to be kept till ſuch piece of plate ſhall be challenged by the owner of any other bull. The challenge to be given on the day of the ſhew of cattle, and to be determined on the next enſuing day of ſhew. The challenger to ſtake five pounds againſt the piece of plate, or to pay half forfeit; on giving one months notice, that he does not mean to ſhew, to the holder of the piece of plate. This piece of plate was not challanged on the laſt day of ſhew.

5. That Five Pounds be given to the owner of the beſt heifer, two years old.

6. That Five Pounds be given to the owner of the beſt heifer, three years old, that ſhall have produced a living calf, between the 1ſt of January and the 1ſt of April preceding, and ſhall be in milk at the time of ſhew.

7. That Five Pounds be given to the owner of the beſt cow, four years old or upwards, under the ſame conditions as in the laſt article.

8. That Five Pounds be given to the owner of the beſt yoke of working oxen, of the ſame age, from four to ſix years old.

No bull, heifer, cow, or ox, will be permitted to be ſhewn for the prizes, but ſuch as ſhall be led to the place of ſhew by a ſtrong rope or chain, and ſhall be afterwards ſufficiently ſecured, ſo as to prevent the poſſibility of breaking looſe.

9. That Eight Pounds be given to the owner of the beſt South Down ram, one year old laſt lambing time.

10. That Eight Pounds be given to the owner of the beſt South Down ram, two years old laſt lambing time.

11. That Eight Pounds be given to the owner of the beſt South Down ram, three years old laſt lambing time.

12. That Eight Pounds be given to the owner of the beſt South Down ram, two years old laſt lambing time, which ſhall have worked the year before in the flock, not leſs than one month in the Autumn, and ſhall have returned to the flock on or before the 5th day of April, and ſhall have continued with the flock till the 1ſt day of July, upon the Down and Arable land.

13. That Eight Pounds be given to the owner of the beſt South Down ram, three years old laſt lambing time, under the ſame conditions as in the laſt article.

The Fleeces of all the Rams ſhewn for Prizes muſt be produced.

14. That Five Pounds be given to the owner of the beſt pen of twelve South Down ewes, viz. four of one year old, four of two years old, and four of three years old.

15. That Four Pounds be given to the owner of the ſecond beſt pen of twelve South Down ewes, of the ſame deſcription as the former.

16. That Three Pounds be given to the owner of the third beſt ditto.

17. That Two Pounds be given to the owner of the fourth beſt ditto.

18. That One Pound be given to the owner of the fifth beſt ditto.

The two and three year old ewes muſt have produced and reared a lamb, which had not been weaned before the 24th day of June, preceding the day of ſhow; and the ewes muſt have been kept with the flock ſheep, till within three days of the ſhew.

19. That Two Pounds will be given to the owner of the beſt South Down ram Fleece, in weight and quality.

20. That One Pound be given to the owner of the ſecond beſt.

No Fleeces to be permitted to be ſhewn for the prizes for Fleeces but ſuch as are the produce of the rams ſhewn for the South Down ram prizes. The Candidates to ſend their Fleeces marked in the ſame manner as the rams, to Mr. Whitfeld's Wool Warehouſe, three days before the day of ſhew with their names affixed.

21. That each Candidate ſhall produce a certificate of the age, as near as poſſible, of his ſtock ſhewn, the pedigree where it can be aſcertained, with the name of the breeder, and an account of the manner in which the ſtock had been kept for the laſt four months preceding the day of ſhew; and alſo conform to every other particular required by the ſociety in the foregoing reſolutions.

22. That each Candidate may ſhew cattle or ſheep for all the prizes, but ſhall be entitled to no more than one prize for each ſort of ſtock;—*i. e.* for bulls, heifers, cows, oxen, rams, not kept with the flocks,—rams kept with the flocks, and ewes.

23. That no prize be awarded, unleſs the animal or animals ſhewn ſhall be deemed by the judges to poſſeſs ſufficient merit to be entitled to it.

24. That three judges for the cattle, and three for the ſheep, be appointed by the committee, who will meet on the 26th of July next, at the Star Inn, Lewes, at one o'clock; and that the committee do conſiſt of all the Subſcribers; ſeven of whom ſhall form ſuch committee, if more ſhall not attend; but no perſon ſhall act as judge, or vote in the committee, on any queſtion in which he ſhall be intereſted.

25. That the cattle and ſheep be brought into the field, before eleven o'clock; ſuch as come after that hour, ſhall not be entitled to any prizes.

26. That three ſtewards be appointed for the management of the buſineſs on the day of the ſhew of cattle; and that John Fuller, Eſq. M. P. Mr,

Saxby and Mr. Knight, be requeſted to undertake that office for the preſent year.

That the judges be requeſted to aſſign their reaſons for their deciſions, in the ſhapes and wool of the animals to which they adjudge the prizes.

That the dinner be on table at three o'clock preciſely; and that at five o'clock the ſtewards ſhall adjourn to the field, where the report of the judges ſhall be declared.

*** The ſhew of cattle will take place between Brighton and Lewes races, of which notice will be given in the Lewes Journal; and the Candidates for the ſeveral prizes for ſtock muſt give notice in writing, of their intention of becoming ſo, to Mr. Whitfeld, of Lewes, the Treaſurer, on or before the 23d of July next.

PREMIUMS FOR THE INDUSTRIOUS AND DESERVING POOR.

28. That Fifteen Pounds be given to five labourers, who ſhall have brought up and ſupported to the age of two years, the greateſt number of children (within the laſt fifteen years) in habits of induſtry, with the leaſt proportionate relief from the pariſh, viz.

To the moſt deſerving	Five Pounds.
2d,	Four Pounds.
3d,	Three Pounds.
4th,	Two Pounds.
5th,	One Pound.

Certificates to be ſigned by two or more of the principal inhabitants of the pariſh or pariſhes where the Claimant has reſided during the bringing up of his family; and if any Claimants are poſſeſſed of property, ſuch property, with the manner in which they obtained it, ſhall be ſtated in the certificate.

29. That Ten Pounds be given to four Wives or Widows of labourers who ſhall have done the moſt work in huſbandry, between the 2d day of October, 1802, and the 2d day of October, 1803. The number of days, and the different kinds of work in which the women ſhall have been employed, with the number and ages of their children, ſhould they have any, (which will be taken into conſideration) to be ſtated in the certificates from their employers, viz.

To the moſt induſtrious	Four Pounds.
2d,	Three Pounds.
3d,	Two Pounds.
4th,	One Pound.

30. That Five Pounds be given to two houſhold men ſervants employed in huſbandry, under the age of 25 years, who ſhall have received wages during the greateſt number of years (not leſs than five) in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters of their continued good behaviour, viz.

To the Firſt	Three Pounds.
To the Second	Two Pounds.

31. That Five Pounds be given to two houſhold men ſervants employed in huſbandry, above the age of 25 years, who ſhall have lived the greateſt number of years, (not leſs than ſeven) in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters, of their continued good behaviour, viz.

To the Firſt,	Three Pounds.
To the Second,	Two Pounds.

32. That Ten Pounds be given to three labourers, who ſhall, with the aſſiſtance of their wives and children, under ten years of age, in working by taſk, or otherwiſe, during the next harveſt, earn the moſt money, not leſs (than ſix pounds) in proportion to the prices at which they ſhall have taken their work. Certificates to be ſigned by their employers, viz.

To the First, . . Five Pounds.
To the Second, . . Three Pounds.
To the Third, . . . Two Pounds.

33. That Five Pounds be given to two Women Servants in every kind of ſervice, under the age of 25 years, who ſhall have received wages during the greateſt number of years, (not leſs than five) in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters or miſtreſſes, of their continued good behaviour, viz.

To the Firſt, . . Three Pounds.
To the Second, . Two Pounds.

34. That Ten Pounds be given to four Labourers in huſbandry, having been married, who ſhall have lived the greateſt number of years (not leſs than ſeven) in the ſame ſervices, and who ſhall bring ſatisfactory certificates from their employer of their continued good behaviour, viz.

To the Firſt, . . Four Pounds.
To the Second . . Three Pounds.
To the Third, . . Two Pounds.
To the Fourth, . . One Pound.

No perſon who has received any premium from the ſociety for bringing up a family with the leaſt proportionate relief from the pariſh, or for long continuance in one ſervice, will be entitled to any premium on the ſame ground.

It is requeſted that each Claimant will obſerve, that every particular required by the ſociety, in the forgoing reſolutions, muſt be expreſſed in the certificate.—Many inconveniences having ariſen from certificates being incomplete, the Society have ordered ſome printed forms to be prepared, which may be had at the Lewes Bank.

The day for diſtributing the premiums to the induſtrious poor, will be fixed on the day of the ſhew of cattle.

*** Subſcriptions are received at the Lewes Bank, where thoſe gentlemen who have neglected to do it, are requeſted to pay in their ſubſcriptions for the former year.

Whitby Strand and Pickering Lyth Agricultural Society.

Sir R. B. Johnſtone, Bart. *Preſident.*
John Gray, Richard Smailes } *Vice-Preſidents.*

AT a Meeting of the Committee appointed by this Society, the following Premiums are ordered for cattle, ſheep, &c. bred within the ſaid diſtricts, to be ſhewn at Hackneſs in the ſaid North Riding, on Whitſun Tueſday next, at 11 o'clock in the forenoon:

	£.	s.
For the beſt two years old Bull	3	3
The ſecond beſt	2	2
For the beſt year-old Bull	3	3
The ſecond beſt	2	2
For the beſt two-years old Heifer	3	3
The ſecond beſt	2	2
For the beſt pair of Draught Oxen not more than four years old	3	3
For the beſt pair of two years old Steers	2	2
For the beſt one-year old Tup	5	5
The ſecond beſt	3	3
The third beſt	2	2
For the beſt Gimmer Hogs, not leſs than five in number, or not leſs than one-tenth part of the Candidate's whole ſtock	3	3
The ſecond beſt	2	2
For the beſt Boar	2	2
The ſecond beſt	1	1

Alſo ordered, that the following premiums be given without the reſtriction of being bred in the ſaid diſtricts:

For the beſt Bull . . . 5 5
For the beſt Tup, not more than two ſhear . . 5 5
For the beſt Cow with Calf, or that has had a Calf within twelve months, and has been one year in the ſaid diſtricts, prior to the day of ſhew . . . 3 3

All the above ſtock, except the Oxen and Steers, are to remain and be uſed within the ſaid diſtricts twelve months, or the premiums to be forfeited.

The ſtock are to be bona fide the property of the Candidate, and Certificates of their ages will be required.

The Tups and Gimmer Hogs are to be ſhewn with their wool on, but to be ſhorn, if the Judges think it neceſſary.

If only one Bull, one Tup, &c. be ſhewn, the Judges ſhall give ſuch premiums as they think proper. The Judges will be choſen on the day of ſhew.

No perſon will be allowed to ſhew for any of the above premiums without becoming a Subſcriber of, at leaſt, Half-a-Guinea, and unleſs he occupies Lands within the ſaid diſtricts.

It was alſo ordered, that a premium of five-guineas be given for the greateſt number of Acres (not leſs than ten) of waſte land brought into cultivation in the ſaid diſtricts, within the laſt three years. The Candidates for this premium muſt give notices in writing to the Secretary, on or before the firſt day of May next. And Certificates will be required of the original ſtate of the land, atteſted by ſome reputable perſon or perſons in the neighbourhood.

The Committee reſerve to themſelves the right of withholding any premium whatſoever, until they are convinced that the Claimant is, in every reſpect, fairly and fully entitled to it: and if it be found that he has attempted to impoſe upon the Committee, by falſe and unfounded claims, or has not abided by the reſtrictions required, he ſhall not only forfeit ſuch premium, but ſhall be diſqualified for receiving any future premium, and ſhall be no longer conſidered a member of the Society.

It was alſo ordered, that a premium of two-guineas be given to the labourer who has maintained the greateſt number of legitimate children (not leſs than ſix) within the ſaid diſtricts, without any, or with the ſmalleſt aſſiſtance from the pariſh. A Certificate will in this caſe be required of the number of the legitimate children and their ages, and whether the labourer has had any, or what, aſſiſtance from the pariſh, ſigned by the Miniſter, Churchwardens, and Overſeers of the Poor.

N. B. A fair for all kinds of Cattle will be held at Hackneſs on the ſame day, free from all Tolls.

THOMAS HUTCHINSON,
Secretary.

Hackneſs, 21ſt Feb. 1803.

Agricultural Society for the County of Durham.

At a meeting of the Society held at Darlington, on the 20th of December, 1802, it was reſolved to offer the following Rewards for the enſuing Year:

No. 1. TO the Farmer, whoſe farm (not leſs than 150 Acres) ſhall be deemed to be in the moſt ſkilful mode of cultivation, and beſt condition, five-guineas.

2. To the Farmer, who has, at his own expenſe, laid down to graſs a piece of ground, (not leſs than ten Acres) being part of his farm, of not leſs than 150 Acres; and which, at the end of three Years, ſhall appear to have been moſt ſkilfully laid down, and uſed as Meadow or Paſture, during ſuch three Years—five-guineas.

3. For the greateſt quantity, and beſt in quality, of Rye-graſs Seeds, produced from two Acres of ground—three-guineas.

The Candidates for any of the above three Rewards, are desired to send their claims to the Secretary on or before the 1st Day of July next; and their several farms, grounds, and crops will in due time be viewed by a Committee of the Society, appointed for that purpose, who will take fully into their consideration the nature of the soil, and the situation of the ground of each Candidate, and form their estimates accordingly.—The Candidates for No. 3, must also transmit to the Secretary a Certificate from two respectable persons in the Neighbourhood, certifying the quantity of ground, and the seed growing thereon.—The Rewards will be adjudged and paid at the meeting of the Society, to be holden at Durham in December next.

4. To the Cottager usually employed in Husbandry, by whom the greatest number of legitimate children (not less than six) have been maintained, educated, and placed in service, without assistance from his parish—four-guineas.

5. To the Cottager usually employed in like manner, who shall have maintained, educated, and placed in service, the next greatest number of legitimate children, under the same restrictions—two-guineas.

The case of such Claimant to be certified by the minister, and a major part of the Churchwardens and Overseers of the poor of the parish or place where such Cottager resides, and delivered to the Secretary on or before the first day of July next; and the Society earnestly requests that no minister or Parish Officer will grant any such Certificate, unless the facts contained in it are within their own personal knowledge, or ascertained to them by parochial records or other indisputable testimony.—The rewards will be adjudged and paid at the meeting of the Society, to be holden at Darlington in September next.

6. For the best Stallion for getting harness or draught horses; to be kept in the County of Durham as a Stallion, at one-guinea per Mare, for one season afterwards, and to attend Durham Market, in the usual manner—three-guineas.

7. To the best Stallion for getting Hunters or Road horses, with the same injunctions as last above mentioned in No. 6—three-guineas.

8. For the best Bull (not less than two years old) to be kept in the County of Durham one year afterwards—five-guineas.

The Horses and Bulls must be shewn at Darlington upon Easter Monday next, when the several Rewards will be adjudged and paid; and the successful Candidates must give such Security to the Society, at their meeting holden upon that day, for the performance of the different conditions annexed, as they may deem satisfactory.

9. To the best Tup, (whether aged or shearing), to be kept in the County of Durham for one Year afterwards—five-guineas.

10. For the best Cow or Heifer (in Milk or with Calf), bred in Darlington or Stockton Wards, to be kept in the County of Durham, for two Years afterwards, as a breeding cow—five-guineas.

The Tups, Cows, and Heifers, must be shewn at the meeting of the Society at Darlington, in September next, when the Rewards will be adjudged and paid,—the successful Candidates giving satisfactory Security for the Performance of Conditions.

11. For the best Cow or Heifer (in Milk or with Calf), bred in Chester or Easington Wards, to be kept in the County of Durham, for two Years afterwards, as a breeding Cow—five guineas.

These Cows or Heifers, must be shewn at the meetings of the Society at Durham, in December next, when the Reward will be adjudged and paid, Security being given by the successful Candidate.

REWARDS FOR FAT SHEEP AND CATTLE.

12. For the best Penn of five fat Wethers, under two years old, and which have not been fed with any other than green food—ten-guineas.

13. For the best Penn of five fat Wethers, under two years old, which

ſhall not weigh more than 24 pounds per quarter, and have not been fed with any other than grean food—ten-guineas.

Certificates, reſpecting the feeding of the Sheep, will be required at the time of ſhewing.

14. For the beſt fat Ox, certified to be under four years old at the time of ſhewing—ten-guineas.

15. For the beſt fat Ox, certified to be under four years old at the time of ſhewing, whoſe Carcaſe, when killed, ſhall not weigh more than 64 ſtone ten guineas.

The Candidates for the four laſt-mentioned Rewards muſt ſhew their Sheep, or Oxen, at the meeting of the Society to be holden at Mr. Hoult's, in Durham, on Friday the 16th of December next, at ten o'clock in the forenoon. And as no perfect judgment can be formed of the real merits of thoſe animals, by merely examining them when alive, they muſt be ſlaughtered upon the day they are ſhewn, and the Carcaſes examined by the Society the Day following,—when the ſeveral Rewards will be adjudged and paid. The Oxen requiring a greater length of time between their being killed and their Carcaſes being made fit for examination, will be ſhewn firſt.

The Society truſt that no perſon will preſume to ſhew any Stallion, Bull, Tup, Cow, or Heifer, unleſs they are in every reſpect ſuch as the public will be benefited in breeding from. The improvement of the different breeds is the grand object of the Society, and they beg it to be underſtood, that they ſhall deem themſelves juſtified in withholding the Rewards which they have offered, when any horſe, &c. *although the beſt of the Claſs*, ſhall not, in their judgment, poſſeſs a ſufficient degree of excellence to promote that deſirable end.

Reſolved unanimouſly, That none of the members of this Society will, in future, hire any Servants, without a Certificate of good behaviour from the laſt place of Service.

The ploughing match by the Greenock and Innerkip Farmer and Agricultural Society, took place on Thurſday, on the land of Cartſburn, in the preſence of the Judges, and upwards of 1000 ſpectators. Eleven ploughs were on the ground by 11 o'clock, and all of them did their work in a very maſterly ſtile; but, after due deliberation, the Judges awarded the prizes in the following manner, viz. The firſt prize to William Lindſey, farmer in Kilback, pariſh of Erſkine, for lot 7th.—The ſecond, to Robert Craig, ſervant to Mrs. Johnſton of Biſhopton Inn, for lot 9th.—The third, to John Lang, ſon to William Lang, farmer in Ingleſton, pariſh of Erſkine, for lot 10th—And the fourth, to John Algie, ſervant to William Warden, farmer in Finnart, old pariſh of Greenock, being for lot 13th. When the buſineſs was over, the Judges and a number of the members dined together at the Buck's Head Inn. The ploughmen were treated with a dinner at the ſame Inn, and ſpent the evening with the greateſt harmony and conviviality.

On Thurſday ſe'ennight, a Ploughing match took place by appointment of the Leſmahagow Farmers Club, on the farm of Drafan, and although it was the firſt trial of the kind, eight competitors belonging to the pariſh of Leſmahagow came forward, all of whom gave the greateſt ſatisfaction to the numerous ſpectators who were preſent, by the very maſterly manner in which they ploughed their ſeveral lots. The Judges, after the moſt careful examination of the work, adjudged the prizes in the following manner. The firſt, being two-guineas, to Hugh Gaw, ſon to James Gaw, farmer in Tower—The ſecond, being one-guinea and a half, to William King, ploughman to Mr. Cunningham in Drafan—The third, being one guinea, to John Smith, ploughman to William Clark, Eſq. of Kerſe—The fourth, being half-a-guinea, to Robert Weir, ſon to William Weir, farmer in Raw Hill; and the other competitors were allowed five ſhillings each.

The annual ploughing match appointed by the Carrick Farmers Society, took place on Wedneſday the 9th inſtant in a field in the farm of St. Murray,

near Maybole, belonging to Mr. James M'Jannet. Twenty-ſix competitors appeared, to whom the judges preſcribed a rule as to the depth and breadth of the furrows. They then retired till the work was all finiſhed; and, after minute inſpection, they adjudged the firſt prize to David Edgar, ſervant to David Kennedy, Eſq. of Kirkmichael.

The ſecond, to James Hannah, ſervant to Mr. Ebenezer Donaldſon in Dalduff, pariſh of Maybole.

The third, to Peter M'Intyre, ſervant to Mr. Alexander M'Hutcheon in Woodſtone, pariſh of Kirkmichael.

The fourth, to John Dick, ſervant to Mr. John M'Clymont in Barnton, pariſh of Kirkmichael.

The whole work was remarkably well executed conſidering the nature of the land and the ſeverity of the froſt, and gave univerſal ſatisfaction to the Judges, and numerous ſpectators. Every friend to his country muſt feel ſatisfaction in the rapid progreſs of agricultural ſkill in that part of the country, to which the Carrick Farmers Society, above 80 in number, conſiſting of many of the principal proprietors and reſpectable tenantry of that diſtrict, has not a little contributed.

On Monday the 7th of March laſt, the Spring Ploughing Match, under the patronage of the Mearnſhire Agricultural Society, took place at Fettereſſo. Seventeen ploughs ſtarted in a field of old ley, having drawn lots for the places which were marked on the poles which divided the ground. The ploughs ſtarted at twelve o'clock, and finiſhed by half paſt four. The Judges then went over the field, and after accurately examining the whole, adjudged the firſt prize to John Stephen, ſervant to William Murray in Grains of Fettereſſo; the ſecond, to John Steel; the 3d, to William Spalding, both ſervants to Mr. Barclay of Dry; and the fourth, to John Shand, ſervant to Mr. Duff of Fettereſſo. The Judges expreſſed great ſatisfaction with the whole performance, and had ſome difficulty in determining to whom the two laſt prizes ſhould belong, many being nearly equal. It was with great pleaſure the gentlemen of the Society preſent, obſerved a conſiderable degree of improvement in the ploughing ſince the laſt ſpring match. A numerous company of gentlemen were afterwards elegantly entertained at Mr. Duff's hoſpitable board, where a number of loyal and patriotic toaſts were drank. An excellent dinner was likewiſe ordered by Mr. Duff for all the ploughmen. Owing to the ſevere froſt, which had ſet in for ſome days previous, a number of ploughmen from a diſtance did not attend, ſuppoſing there could be no ploughing, although there was no interruption at the Herefordſhire Agricultural meeting, on Monday laſt, the following were declared the ſucceſsful candidates for the Society's premiums; E. Jones, Eſq. Fawley, for the beſt bull of all ages; T. A. Knight, Eſq. for the beſt three years old; Mr. Williams, of Thinghill, for the ſecond beſt ditto; J. G. Cotterell, Eſq. for the beſt yearling; and Mr. Jones, of Bremton, for the ſecond beſt ditto. The Preſident, Mr. Knight, informed the meeting, that although the late deciſion in London, gave a preference to the Devonſhire oxen exhibited there; on ſlaughtering them, the Herefordſhire were found to have three inches more of ſolid meat on the ribs, than the Devonſhire, to whom the premium had been awarded.

On Wedneſday April 1ſt was held the Anniverſary meeting of the York Agricultural Society, when the following premiums were adjudged, viz.

To Mr. Shaw of Malton, for the beſt Stallion for getting Hunters and Saddle Horſes, 5l. 5s.

To Mr. Weſt of Eddlethorp, for his old Stallion, as the beſt for getting Coach Horſes, 5l 5s.

To Mr. John Dawſon of Whighill, for the beſt Stallion for getting Cart Horſes, 5l. 5s.

G. Crompton, Eſq. of Nunmonckton; Mr. Milner, Biſhopthrope; Mr.

W. Laycock, Appleton; Mr. C. Hall, Ellerton; Mr. G. Hardwicke, Burton Houſe; and Mr. W. Hodgſon, Stamford Bridge, were the Judges

The following Gentlemen were appointed Officers of the Society for the enſuing year:

Sir M. M. Sykes, Bart. *Preſident.*
Hall Plumber, Eſq. } *Vice-Preſidents.*
H. J. Baines, Eſq. }
Thomas Hartley, Eſq. *Treaſurer.*
John Tuke, *Secretary.*

On Wedneſday April 1ſt our annual Palmſun Show of Stallions was held: beſides thoſe which received the premiums from the York Agricultural Society, ſeveral very capital horſes were ſhown, amongſt whom were Duncan, Cardinal, and a young horſe belonging to Mr. Weſt, jun. of Eddlethorp, all indeed excellent of their kind. On Thurſday there was a great ſhow both of fat and lean cattle. Fat ſold at high prices, but lean rather lowered ſince our laſt report. Sheep alſo fetched great prices.

At Blandford fair, on Monday, the moſt extravagant prices were aſked for every article there. Houſehold cheeſe ſold for two-guineas a hundred. Pigs were very numerous, but extravagantly dear.

At Roſs fair, on Monday, there was a conſiderable ſhow of lean cattle, which experienced rather a dull ſale. Good horſes ſold well. The prices of pigs and ſheep were nearly the ſame as at the late neighbouring fairs. There was a large quantity of cheeſe, of which beſt making ſold from 53s. to 58s. two meal, from 43s. to 46s. per cwt.

At Tewkeſbury fair, on Monday laſt, there was a fine ſhow of cattle, which ſold at rather advanced prices. A cow, bred and fed by Mr. Clifton, of Aſhchurch, and a Herefordſhire heifer, were ſhewn to amateurs and the curious. The cow was eminently diſtinguiſhed for her exceſſive fatneſs. She is deſcended from the late Mr. Fowler's ſtock, and is ſuppoſed to exceed, in point of ſhape and fatneſs, any one ever produced in England. She was exhibited to nearly one thouſand perſons. The heifer was remarkable for its weight, which was upwards of two thouſand eight hundred pounds.

The prices of leather at Liverpool fair, on the 15th inſtant were, light ordinary hides, 20½d. a 21d. per. Middling ditto 21½d. a 22d. Heavy ditto 23d. to 24d. Dreſſing ditto 21½d. a 22½. Horſe ditto 20d. a 23d. Calf Skins, Engliſh, 40lbs. to 60lbs. per dozen, 2s. 5d. a 2s. 7d.; 60lbs. per dozen, 2s. 4d. a 2s 6d. Iriſh, 1s. 8d. a 2s. 1d.

At Saffron Walden fair, on Saturday ſe'ennight, there was a great ſhow of horſes, which had a quick ſale, and fetched great prices. Good drafts ſold from 30l. to 50l.; hunters 30l. to 70l.; draft three years old colts, from 20l. to 35l. each. The beſt horſes were moſtly brought up on the Friday, and by ten o'clock on the Saturday morning there were few left in the fair, and thoſe very ordinary ones. Cow kind rather cheaper.

The prices of grain, on Thurſday, at Devizes market, were, wheat, 54s. to 60s. per quarter. Barley, 22s. to 27s. Beans 32s. to 38s. Oats, 19s. to 22s.

The average price of Sugar, for the week ending 23d March, is 39s. 7¼d. per cwt. excluſive of the duty.

At Morpeth market on Wedneſday laſt, both beaſts and ſheep advanced in price.

At Durham fair, laſt week, horſes met with a very briſk ſale and brought remarkably high prices; the ſale for mares was very dull, and the prices rather reduced. Cattle did not ſell ſo briſkly as of late, though the prices in general were nearly the ſame.

Accounts from various countries, particularly thoſe to the Eaſtward, ſtate that the wheats have, in general, been ſeverely injured by the froſt; and that a ſimilar injury has been ſuſtained by the corn ploughed in, as

well as by that ſown by the drill, harrowed in on clover-leys, or in the broad caſt way. Intelligence, however, from other quarters is of a far more favourable nature.

The ſucceſſion of dry weather has been highly favourable to the lambing of the South Down flocks; and indeed for all the purpoſes of huſbandry. The lambs which have hitherto been yeaned are remarkably ſtrong and very healthy, but the twins have not been ſo numerous as in ſome former ſeaſons.

The Wool of England, in the reign of Edward III. is generally ſuppoſed not to have exceeded in quantity 150,000 ſacks, of 360 pounds weight each, which is equal to 225,000 packs, of 240 pounds, according to the packages of theſe days. In later times computation have greatly varied. According to Davenant, there was in England alone, at the commencement of the laſt century, about 400,000 packs, worth 5l. each; which, when manufactured, produced eight millions in value. Trowel, in his plan for preventing the clandeſtine running of Wool, printed anno 1738, ſuppoſes 800,000 in England and Ireland, and about 925,000 packs in the three kingdoms. Others, about the ſame time, computed the number of packs at about 1,274,000. Mr. Arthur Young calculates the number of Sheep in England alone at nearly 29,000,000, and the value of the whole growth and labour of the Wool of Great Britain and Ireland at 17,695,529l. furniſhing employment to about a million and a half of people. We ſhall ſuppoſe, however, that there are only 28,800,000 ſheep in the whole iſland of Great Britain, producing at an average 5lb. weight of Wool each, or 144,000,000 pounds in all, equal to 600,000 packs, and worth, at the rate of 8l. per pack, 4,800,000l. If the value of the raw material is quadrupled by the labour that is beſtowed on it, the growth and labour will amount to 19,200,000l. to which, if there is added the value of the Wool imported from Spain, and the labour employed on it, it will make a total of about Twenty Millions.

Farmers who have acceſs to peat moſſes will find a very great addition of manure, not leſs valuable than town dung, by attending to the following directions:—take in the proportion of four cart-loads of moſs peat, or rubbiſh of peat, and put over it one cart load of good farm dung, for every four cart-loads of peat moſs. The mixture will heat in about 20 days, more or leſs according to the ſtate of the weather. If the mixture grow too hot, it muſt be turned over, and it will be too hot when it exceeds 80 degrees of Farenheit's thermometer. This is one of the moſt important diſcoveries ever made for the improvement of Scotland, which abounds ſo much with peat moſſes; moſſes run out for fuel, will become very valuable for manure.

Swediſh Turnips.—An Augus Farmer gives the followiog account of his experience this year, of the uſe of the Swediſh turnip. He has given them to his work horſes. They were cut ſmall at firſt, and mixed with beer, chaff and corn. The horſes in ten days have grown fond of them, and devour them greedily, and have improved in ſtrength and appearance exceedingly on this food. Great care muſt be taken to waſh them very clean. The horſes now eat them eaſily uncut. Swine, which care little for any part of the common turnip, but the ſhaws, eat theſe and fatten on them. The ſheep eat them whole. His young horſes do the ſame, and thrive on them. They make part of his cows food, boiled, and give the milk no taſte of turnip. The calves, a month or ſix weeks old, are very fond of them boiled.

From a number of experiments and obſervations lately made on the effects of elder in preſerving of plants from inſects and flies, it appears to be uſeful—1. For preventing cabbage and cauliflower plants from being devoured and damaged by caterpillars.—2. For preventing blights, and their effects on fruit trees.—3. For preſerving corn from yellow flies and other inſects.—4. For ſecuring turnips from the ravage of flies. The dwarf elder appears to exhale a much more fœtid ſmell than the common elder, and therefore ſhould be preferred.

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of March and the 20th of April, 1803.

BANKRUPTCIES.

The Solicitors' Names are between Parentheſes.

ARNOLD, Thomas, Canterbury, cheeſemonger. (Martin, Vintner's hall
Aveſon, Henry and Samuel, Manchester, corn-dealers. (Milne and Parry, Temple
Anderſon, Robert, Guildford ſtreet, and Old Pay-office, merchant and inſurer. (Walton, Girdler's hall
Acocks, Benjamin, late of Charlotte ſtreet, Blackfriars road, now of Red-lion ſtreet, Holborn, coal-merchant. (Cokayne and Taylor, Lyon's inn
Beſtow Francis, Ruſſia row, Milk ſtreet, London, and late of Nottingham, hoſier. (Plaiſted, Hatton garden
Biſhop, Thomas, Little Eaſtcheap, carpenter. (Radcliffe, Warwick court, Holborn
Barkly, Jacob Nathan, Tower royal, Budge row, merchant. (Firm J. N. Barkly and Co.) Willet and Anneſley, Finsbury ſquare
Brook, Edward, Wakefield, ſcrivener. (Allen and Exley, Furnival's inn
Bourgeois, Iſidore, Billiter ſquare, merchant. (Langham, Bartlet's buildings
Bell, John, Norwich, liquor merchant. (March, Norwich
Bateman, John, Whitechapel, hardwareman. (Kibblewhite, Gray's inn
Billet, George, Southwark, linen-draper. (Dobie and Thomas, Crane court.
Brown, William, Lincoln, ſadler. Kinderley, Long and Ince, Symond's inn
Beaumont, William, Shrewsbury, draper. (Batten and Anſtice, Temple
Cadwell, William, Maidſtone, upholſterer. (Allen, London ſtreet
Calvert, Nathaniel, Lancaſter, merchant, Partner with Francis Simpſon, of St. Chriſtophers. (Bleaſtale and Alexander, New inn
Cooke, John, Barnes, dealer. (Edwards, Caſtle ſtreet, Holborn
Dunne, Charles, Durweſton ſtreet, Marybone, ſurgeon and apothecary. (Mayhew, Marſhall ſtreet, Golden ſquare
Dow, Thomas and Authony, Liverpool, merchants. (Blackſtock, Temple
Davallon, John Baptiſt, partner with John Moſenan, Laurence-pountney lane, merchant. (Willet and Anneſley, Finsbury ſquare
Dearing, Thomas, Wood ſtreet, victualler. (Sarell, Berkeley ſquare
Dawſon, William, jun. Liverpool, merchant. (Shawes, Bridge ſtreet, Blackfriars
Early, Richard, Chelmsford, coal-merchant. (Allen, London ſtreet
Greenwood, Samuel, Newman ſtreet, coachmaker. (Kibblewhite, Gray's inn place
Glover, John, Great-lever-works, oil of vitriol manufacturer, and merchant. (Street, Philpot lane
Green, Joſeph, Liverpool, woollen-draper. (Hindle, Bartlett's buildings
George, Francis, Panteague, coal-merchant. (Tourle, Palmer and Pugh, Gray's inn
Hacker, William, Precinct of the palace of the Archbiſhop of Canterbury, carpenter and builder. (Barnes, Clifford's inn
Hance, William, Tooley ſtreet, merchant, and hat manufacturer. (Lee, Three-crown court
Hutchon, Thomas, Coleman ſtreet, merchant. (Smedley, Alderſgate ſtreet
Halſted, Robert, Worſthorn, calico printer. Johnſon, Mancheſter
Huſtler, James, Weſton-colvile, farmer. (Sanderſon, Palſgrave place
Keymer, Francis, Covent garden, ſurgeon and apothecary. (Hannam, Piazza chambers, Covent garden
Lomnitz, Joſeph Benjamin, and Wolff Riſſon, Fenchurch ſtreet, merchants. (Willet and Anneſley, Finsbury ſquare
Martorelli, Francis, Fleet ſtreet, merchant. (Willet and Anneſley, Finsbury ſquare
Moſt, Michael Emanuel, Old Bethlem, merchant. (Johnſon, Ely place
Mitchell, Hugh, Liverpool, builder. (Battye, Chancery lane
M'Connell, Edward, Liverpool, linen-merchant. (Wilſon and Broad, Union ſtreet, Southwark
Myles, John, Preſton, cornfactor and miller. (Ellis, Curſitor ſtreet
Norton, Peter, Whitchurch, innholder. (Manley and Lowes, London
Powney, Daniel, jun, Sherborne, victualler. (Hill and Meredith, Gray's inn
Rome, Richard, Penryn, merchant. (Shepherd and Adlington, Gray's inn
Richmond, John, Skerton, gardener and ſeedſman. (Lamthwaite, Lancaſter
Rawſtorne, James, Pontefract, merchant. (Lambert, Hatton garden
Sheppard, Samuel, Marlborough ſtreet, victualler. (Dawſon, Warwick ſtreet, Golden ſquare
Smith, Hugh, Blackfriars road, coachmaker. (Kibblewhite, Gray's inn
Stokes, William, Old Broad ſtreet. (Pering, Lawrence-pountney hill
Sly, George, Wanſtead, ſtock-broker. (Bousfield, Bouverie ſtreet
Slade, Thomas Moore, Old Bond ſtreet, picture dealer. (Kibblewhite, Gray's inn place
Turnbull, William, late of Fenchurch ſtreet, now of Bell Savage yard, dealer. (Morgan, Clements lane
Tanner, George, Briſtol, hardwareman and cutler. (Ayrton, Gray's inn
Witney, Francis, otherways Nicholas, Woodmancote, currier. (Wolley, Wine-office court
Wilſon, Francis, Great Clacton, linen-draper. (Langley, Plumbtree ſtreet, Bloomsbury
Weſtbrook, Thomas Jones, Nelſon terrace, City road, builders. (Baker, Limehouſe.
Walker, William, jun. Kingſton-upon-hull. (Lyon and Collyer, Bedford row
Young, William Myton, Kingſton-upon-hull, maſter and brewer. (Ellis, Curſitor ſtreet

DIVIDENDS ANNOUNCED.

Arbuthnot, Alexander, and Richard Brachen, Philpot lane, London, and Birmingham, merchants, May 7
Anniſley, Samuel, and Philip Johnſon, Southwark, grocers, April 23, final
Allen, John, and Thomas New Malton, cornfactors, &c. April 23
Atkinſon, John, Cockermouth, tanner, May 10
Bradbury, Samuel, Baſinghall ſtreet, broker, April 23
Barker, Richard, Wellingborough, currier, April 26
Blane, Thomas, Walbrook, merchant, July 2
Ballner, James, City chambers, merchant, May 2
Barnes, Thomas, Fleet ſtreet, ſtationer, May 14
Bowman, John, Water lane, brandy-merchant, April 30
Bleaze, Ralph, Liverpool, grocer, May 2
Barrow, Charles, Thames ſtreet, oil-merchant, May 7
Bluett, Gylbert, Weſt-ſmithfield, coffee-houſe keeper, May 3
Baker, Thomas, and John Sharland, Exeter, woollen-drapers, ſeparate eſtate of each, May 21
Bowman, John, John Garford, and Thomas Bowman, Poplar and Limehouſe, ſeed-cruſhers, &c. April 25
Back, Michael, Clapham, York, dealer, May 20
Chipchaſe, Robert, Poultry, linen-draper, April 23, final
Cailler, John Daniel, and Daniel and Charles Frederick Cailler, Exeter, merchants, April 21
Champion, William, Workſop, late partner with Gillat and Hawkſworth, Sheffield, brewers, April 29
Colliſhaw, Charles, Wych ſtreet, cabinet-maker, April 23
Chown, William, Higham mills, miller, April 26
Clay, Joſeph, Batley, dry-ſalter, &c. May 5
Cox, James, Church ſtreet, Hackney, oilman, &c. May 7
Corbett, John, Milk ſtreet, warehouſeman July 2
Dawſon, John, Strand, linen-draper, May 7, final
Davis, Oliver, Vine ſtreet, St. Martins, brewer, May 3
Davidſon, John, ſen. and jun. and William and Joſeph Davidſon, Halifax, dyers, joint and ſeparate eſtates, final April 27
Dixon, John, Exeter, grocer, May 10
Edwards, Richard, Morgan lane, Tooley ſtreet, brandy-merchant, April 30
Eyre, Benjamin, Hodgkin Atkinſon, and William Walton, Tokenhouſe yard, merchants, April 26
Freeman John, Fleet ſtreet, Hat manufacturer, April 23
Furneſs, Mark, John White, and Robert Styring, Sheffield, ſilver platers, Joint eſtate, and ſeparate eſtates of White and Styring, June 18
Forbes, John, and Robert Tompkins, Lad lane, warehouſemen, April 25
Fearon, John, formerly of Bread-ſtreet hill, now of Tooley ſtreet, taylor, April 30
Griffiths, James, Fleet market, vintner, April 19.
Griffiths, Vaughan, Paternoſter row, printer, May 3
Gibbs, William, Stowerton, wool-ſtapler, April 29.
Grint, John, Wandſworth, cornchandler, May 7
Harley, Joſeph, Leadenhall ſtreet, ſilverſmith, April 26
Hunt, Joſeph, Weſt-ſmithfield, glazier, April 23
Hamill, Hugh, Cateaton ſtreet, linen-draper, April 29
Harris, Thomas, Prince's ſtreet, Prince's ſquare, vintner, May 3
Huxley, Thomas, Worceſter, vintner, April 20, final
Haddon, Samuel, Oxford ſtreet, haberdaſher, May 3
Henderſon, John, St. Michael's alley, merchant, &c. April 26
Hamaway, Daniel, Brandon, merchant, April 27
Hale, William, Monmouth, timber-merchant, May 7
Haukins, George, Fith-ſtreet hill, druggiſt, May 14
Halledon, George, Liverpool, bookſeller, May 9
Haddon, Benjamin Millows, Clifford's inn, ſcrivener, May 7
Hancock, George, Exeter, breeches-maker, May 13
Harmer, John, Stroud, Glouceſter, clothier, May 13.
Jones, David, Commerce row, Chriſtchurch, baker, April 27
Jones, Thomas, Exeter, builder, April 26
Kendrick, John, ſen. Birmingham, bellows-maker, May 14
Langham, Joſeph, Watford, brandy-merchant, April 25
Laſt, John, Brighton, builder, May 28
Lance, Chriſtopher, and Peter Auber, Gould ſquare, flour-factors, ſeparate eſtate of Lance, April 26

Lambard, John, Fenchurch ſtreet, flour-merchant, April 23
Laſt, John, All-ſaints, South Elmham, ſhop-keeper, April 27
Laurence, John, and Thomas Yates, Mancheſter, merchants, May 4
Leach, James Aſkew, Jewry ſtreet, wine merchant, April 23
Lukin, George, and William Neve, London, merchants, joint eſtate, and ſeparate of Lukin, May 17
Muſkett, John, Cromer, merchant, April 26
Marſhall, James, and John Trewinnard, Cherry-garden ſtreet, brewers, April 23
Mitchell, Henry, Gofport, rope-maker, April 25, final
Manſon, Thomas, Tokenhouſe yard, merchant, &c. April 30
Miles, Richard, Birmingham, malſter, April 25
Marſh, Robert, Nicholas lane, ſtationer, April 30
Mallers, William, ſen. and jun. Greenwich, wine-merchants, May 21 final
Moor, Chriſtopher, Staithes, draper, May 17
Nicholls, Thomas, Birmingham, grocer and ſeedſman, April 25
Nowell, Nicholas, Fleet ſtreet, haberdaſher, April 16
Nix, James, Great Yarmouth, breeches-maker, &c. April 26
Nantes, Henry, Warnford court, merchant, ſurviving partner of Richard Muilman French Chiſwell, ſeparate eſtate, May 14
Pratt, Michael, Darlington, druggiſt, April 23, final
Parker, Edward, Little Turnſtile, Holborn, man's mercer, April 23, final
Pitkithly, James, Wood ſtreet, druggiſt, April 23
Page, William, Ware, malſter, May 3, final
Pierce, Richard, Warminſter, clothier, May 6
Pingo, Waller, Tottenham, Scrivener, April 30
Paul, John, Wincheſter, hardwareman, May 17
Quickfull, Thomas, Kingſton, Hull, dealer in ſpirituous liquors, April 25
Richardſon, Peter, Portſea, bookſeller, April 4
Roberts, John, Bow common, pot-aſh manufacturer, May 7
Reimer, Henry, Catharine court, Tower hill, merchant, April 26
Robinſon, Elizabeth, Mark lane, cork cutter, April 30
Rogerſon, Charles, Warrington, dealer, April 29
Redhead, Robert, Mark lane, wine merchant, May 21
Stainbank, Chriſtopher, Old Bond ſtreet, printſeller, partner with Charles Remdon Berenger, April 26
Stahlſchmidt, Frederick, Whitechapel road, grocer, April 26
Stainsby, John, Cornhill, woollen-draper, April 23, final
Sutton, William, Salter's hall court, merchant, April 26
Strickland, Thomas, and Swinton C. Holland, Liverpool, merchants, ſeparate eſtates, May 2
Staples, Elizabeth, Chriſtopher Shaw, Moſes William Staples, and Henry Guy, Cornhill, bankers, May 7
Spittle, Peter, Wednesbury, gun-lock maker, April 25
Simmonds, John, Canterbury, linen-draper, April 23
Starey, Thomas, Newgate ſtreet, linen-draper, April 23
Scarbrow, William, St. Neot's, baker, April 26
Stafford, Robert, jun. Huntingdon, grocer, April 26
Shillettoe, John, Tower ſtreet, plumber, April 26
Smith, James, and Samuel King, Newgate ſtreet, woollen-drapers, April 30
Sadler, Eliſha, Farmer, Glouceſter, mercer, May 3
Snow, John, Strand, linen-draper, April 30
Tremlet, John, Exeter, draper, April 22
Turnbull, John, John Forbes, Robert Allen Crawford, and David Shene, Broad ſtreet, merchants, ſeparate eſtates of Turnbull and Forbes, May 3
Thompſon, Henry Dawſon, Crewkerne, Surgeon, &c. May 7
Taylor, William, Harwich, ſhip-builder, May 14
Weſt, John, Bath, cordwainer, April 14
Wrighton, Thomas, Doncaſter, mercer, &c. April 13
Whittaker, James, Doncaſter, wine merchant, April 19
Whittaker, Thomas, Highly, inn-keeper, April 15, final
Wheatley, John, Mark lane, corn-factor, April 23
Waldo, Joſeph John, Francis, and John Jones, Birmingham and Briſtol, in England, and of Boſton, in America, merchants, April 23
Woodward, Peter, King ſtreet, Cheapſide, warehouſeman, April 19
Wemberley, Thomas, Peele, Huntingdon, grocer, April 26
Watſon, John, and William Willcocks, Warwick, merchants, April 21
Waters, Parick, George and Dominick, Cork, merchants, joint eſtate, and ſeparate of Dominick, April 26, final
Winterbourn, Thomas, and Charles Gardner, Carey ſtreet taylors, May 14
Wright, John, Piccadilly, bookſeller, May 14
Yare, John, Oxford ſtreet, linen-draper, May 3

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

	First Week	2d Week	3d Week	4th Week.
Raw Hides.	*s.d* *s.d.*	*s.d.* *s.d.*	*s.d.* *s.d.*	*s.d.* *s.d.*
Beſt Heifers & Steers, pr ſt.	3 8 to 4 0	3 8 to 4 2	3 8 to 4 0	3 8 to 4 4
Middling — —	3 2 to 3 6	3 4 to 3 6	3 4 to 3 6	3 2 to 3 4
Ordinary — —	2 10 to 3 0	3 0 to 3 2	3 0 to 3 2	0 0 to 3 0
Market Calf — —	9 6	9 6	9 6	9 6
Eng. Horſe — —	15s to 18s	16s to 18s	16s to 18s	15s to 18s
Sheep Skins — —	4 0 to 8 6	4 0 to 7 6	4 0 to 8 6	4 0 to 8 0
Lamb Skins — —	0 0 to 0 0	2 6 to 3 6	2 6 to 3 6	2 6 to 3 6
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*
St. James's—Hay —	5 17 6	5 8 3	5 10 0	5 13 0
Straw —	2 14 0	2 8 0	2 3 6	2 8 0
Whitech.—Hay —	6 — 0	5 15 0	5 5 0	5 7 0
Clover —	6 16 6	7 — 0	6 10 0	6 16 6
Straw —	2 6 0	2 2 0	2 1 0	1 16 0
Uxbridge.				
New Wheat per load —	—l to —l	—l to —l	—l to —l	—l to —l
Barley — — —	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — —	—s to —s	—s to —s	—s to —s	—s to —s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s
Newbury.				
Wheat — — —	42s to 62s	—s to —s	42s to 62s	48s to 63s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	19s to 22s	—s to —s	19s to 23s	20s to 22s
Beans — — —	— to —s	—s to —s	—s to —s	—s to —s
Oats — — — —	19s to 22s	—s to —s	18s to 23s	18s to 23s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s

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

	First Week	2d Week	3d Week	4th Week
Price of Hops.				
Bags.				
Kent — —	160 to 180	100 to 126	100 to 168	160 to 180
Suſſex — —	160 to 170	100 to 115	100 to 155	160 to 195
Eſſex — —	160 to 170	— to —	100 to 155	100 to 155
Pockets.				
Kent (new) —	168 to 200	120 to 147	126 to 200	160 to 200
Suſſex — —	168 to 185	112 to 230	120 to 180	160 to 200
Farnham — —	220 to 280	— to —	200 to 240	200 to 280
Seeds.				
Canary Seed (per cwt.)	80 to 85	80 to 85	80 to 85	80 to 85
Red Clover ditto —	68 to 65	70 to 95	65 to 96	— to —
White Clover, ditto —	80 to 150	90 to 147	70 to 126	— to —
Treſoil, ditto —	20 to 65	20 to 60	20 to 56	— to —
Carraway ditto —	40 to 45	40 to 45	36 to 42	36 to 42
Coriander ditto —	28 to 30	28 to 30	28 to 30	28 to 30
Turnip, (per buſhel) —	22 to 26	22 to 26	21 to 30	— to —
Rye Graſs, (per quarter)	35 to 60	35 to 60	21 to 50	— to —
Cinque Foil, ditto —	— to —	— to —	— to —	— to —
Rape Seed, (per laſt) —	341 to 361	321 to 351	321 to 351	321 to 351
Meat at Smithfield,	*s.d.* *s.d.*	*s.d* *s.d.*	*s.d,* *s.d.*	*s.d.* *s.d.*
To ſink the offal, p. ſt. 8lb.				
Beef — —	4 4 to 5 4	4 4 to 5 6	4 4 to 5 6	4 8 to 5 6
Mutton — —	5 0 to 6 0	5 0 to 6 0	5 0 to 6 0	5 0 to 6 0
Veal — —	5 0 to 7 0	5 0 to 6 8	5 0 to 7 0	4 0 to 6 6
Pork — —	4 0 to 5 4	4 8 to 5 4	4 0 to 5 4	4 4 to 5 4
Lamb — —	0 0 to 0 0	6 4 to 8 4	7 0 to 9 0	7 0 to 8 6
Head of Cattle—Beaſts about	2,000	2,000	2,000	2,000
——— Sheep and Lambs	6,500	6,000	8,000	9,000
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	18½ to 20½	18½ to 20½	18½ to 20½	19 to 21
Ditto, 60lb. to 66lb. each	22 to 23	22 to 23	22 to 23	22 to 23
Merchants Backs —	19 to 19½	19 to 19½	19 to 19½	19 to 19½
Dreſſing Hides —	20 to 21	20 to 21	20 to 21	19 to 21
Fine Coach Hides —	21 to 23	21 to 23	21 to 23	21 to 22½
Crop Hides for cutting	20 to 21½	20 to 20½	20 to 21½	20 to 21½
Flat Ordinary —	18½ to 19½	18½ to 19½	18½ to 19½	18 to 19
Calf Skins, 40 to 50lb. *p.*doz.	28 to 34	28 to 34	28 to 34	28 to 34
Ditto, 50lb. to 70lb. do.	28 to 33	28 to 33	28 to 33	27 to 33
Ditto, 70lb. to 80lb. do.	26 to 28	26 to 28	26 to 28	26 to 28
Sm. Seals (Greenland)	45 to 48	45 to 48	45 to 48	42 to 48
Large do.	51 to 71	51 to 71	51 to 71	51 to 71
Tanned Horſe Hides	18s to 33s	18s to 33s	18s to 33s	20s to 35s
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 4	4 6	4 6
Clare Market — —	4 6	4 5	4 5	4 6
Whitechapel Market —	4 5	4 5	4 5	4 5
Per ſtone of 8lb. Average	4 5½	4 4½	4 5½	4 5½
Town Tallow — —	76 0	76 0	76 0	74 6
Ruſſia ditto (Candles) —	75 0	75 0	75 0	75 0
Ruſſia ditto (Soap) —	70 0	69 0	70 0	70 0
Melting Stuff — —	59 0	60 0	59 0	58 0
Ditto rough — —	42 0	42 0	42 0	42 0
Graves — — —	16 0	16 0	16 0	14 0
Good Dregs — —	10 0	10 0	10 0	10 0
Yellow Soap — —	78 0	78 0	78 0	76 0
Mottled ditto — —	86 0	86 0	86 0	88 0
Curd ditto — —	90 0	90 0	90 0	88 0
Candles, per dozen, —	11 0	11 0	11 0	10 0
Moulds — — —	12 0	12 0	12 0	13 0

LONDON PRICES OF GRAIN for *April*, 1803.

MARK-LANE, *Monday, April* 4.

Since our laſt of this day ſe'nnight, Grain in general has been declining in price. To-day we have had a middling ſupply of Wheat, but the trade in that article is nevertheleſs very dull.

Barley comes in great plenty to market, and is 1s. per quarter cheaper.

In Oats, as in Barley, we have had the like plenty, and the like depreſſion in price.

White Peas and Tick Beans, are likewiſe cheaper.

Flour is in abundance, and a dull ſale.

Price of Grain, on boara Ship, as under

Wheat	44s to 57s	Malt	40s to 44s od	Grey Peas	27s to 30s od
Fine	58s to 59s 6d	Oats	14s to 17s	Small Beans	28s to 33s od
Rye	32s to 35s	Polands	20s to 21s od	Ticks,	24s to 28s od
Barley	20s to 24s 6d	White Peas	36s to 43s		

Monday, April 11.

We had a middling ſupply of all Grain at market to-day. The Wheat trade is rather lively, and without any reduction from laſt week's prices.

Barley and Malt remain dull.

Fine Samples of Peas, as well as Beans, are dearer.

Oats are ſteady at laſt quoted prices.

Wheat	44s to 57s	Barley	20s to 24s 6d	White Peas	37s to 44s
Fine	58s to 59s od	Malt	40s to 44s 6d	Grey Peas	30s to 33s od
Rye	32s to 35s od	Oats	14 to 19s	Sm. Beans,	30s to 34s 6d
		Polands ditto	20s to 21s 6d	Ticks,	26s to 30s od

Monday, April 18.

Having many buyers at market, and our ſupply of Wheat not large, that article was deemed 1s. per quarter dearer on the average than laſt Monday.

Neither Barley nor Malt are lower, though of the former we have a good ſupply.

The Oat trade is briſk, and the prices better than laſt quoted.

Peas and Beans are a tolerable ſupply but without any variation to require particular note or ſpecification.

Wheat	44s to 57s	Malt	40s to 44s od	White Peas	37s to 44s od
Fine	58s to 59s 6d	Oats	1 s to 21s	Grey Peas	28s to 32s od
Rye	32s to 35s	Polands	22s to 23s od	Sm. Beans,	29s to 34s
Barley	20s to 25s od			Ticks	25s to 29s 6d

Monday, April 25.

The attendance of a conſiderable number of buyers at market to day, and a ſhort ſupply of all Grains, has rendered the price of Wheat, Barley, and Oats, full a ſhilling per quarter dearer than laſt Monday.

Peas are likewiſe a ready ſale, and a trifle dearer.

Flour as laſt week.

Wheat	46s to 57s	Malt	40s to 45s od	Grey Peas	27s to 33s 6d
Fine	58s to 60s od	Oats	15s to 21s	Small Beans	92s to 34s od
Rye	32s to 35s od	Polands ditto	22s to 24s od	Ticks	25s to 29s 6d
Barley	20s to 25s 6d	White Peas	35s to 42s od		

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

From the Returns received in the Week, ended APRIL 16, 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	57	4	36	0	24	2	24	1	30	7	38	8		
Surrey	59	4	34	0	24	3	22	4	32	6	35	0		
Hertford	53	4	35	6	24	8	21	4	36	0	37	6		
Bedford	50	1	31	2	23	1	20	5	26	9	40	4		
Huntingdon	49	2			20	10	17	0	25	4	35	1		
Northampton	52	4	29	6	21	0	17	6	27	8	30	0		
Rutland	54	0			22	0	18	0	28	0	36	0	57	3
Leicester	55	2			22	11	18	7	32	0	32	0	34	2
Nottingham	62	4	36	0	26	8	20	10	33	6				
Derby	63	4			27	0	20	10	36	10	31	0	26	0
Stafford	61	5			26	1	20	5	35	6			28	2
Salop	58	2	38	8	25	6	20	6			38	4	33	7
Hereford	51	7	32	0	24	2	21	8	34	3	33	1	60	2
Worcester	54	5	22	0	24	7	23	7	33	11	39	3		
Warwick	59	4			25	0	20	10	37	2			38	2
Wilts	55	4			24	6	20	6	36	4	34	0		
Berks	56	10			22	6	22	6	33	1	34	9		
Oxford	54	5			21	4	20	2	28	3	33	3		
Bucks	51	0			22	6	21	0	30	1	34	6		
Brecon	53	10	32	0	24	10	16	0			28	0	33	0
Montgomery	56	0			22	5	17	0			33	7	38	2
Radnor	53	10			23	0	19	0			32	0	60	6

Maritime Counties.

Essex	56	6	33	6	22	8	25	0	29	9	29	6		
Kent	54	0			24	9	21	9	30	3	39	0		
Sussex	51	4			24	6	20	10						
Suffolk	53	9	32	0	21	6	19	2	26	13	30	4	48	6
Cambridge	47	11	33	4	19	7	14	11	26	0				
Norfolk	53	2	34	5	20	8	18	0	26	4	31	6		
Lincoln	53	6	32	1	23	6	16	6	27	2	29	0		
York	54	8	36	5	24	2	16	6	29	10	58	0	36	11
Durham	57	4			28	0	19	10						
Northumberland	51	3	40	0	21	1	18	4			35	0	15	0
Cumberland	69	10	50	4	27	5	23	10						
Westmorland	69	6	50	8	32	8	23	3	29	0			17	6
Lancaster	63	0			29	11	21	7	35	10			17	9
Chester	55	3			25	8	18	2					17	3
Flint					30	1								
Denbigh	61	10			29	0	20	0	44	10	48	0	35	11
Anglesea					24	0	14	0						
Carnarvon	60	0	42	0	25	4	16	0					31	9
Merioneth	63	6	48	0	32	0	22	8					33	10
Cardigan	62	0			18	0	12	2						
Pembroke	49	3			20	5	13	4						
Carmarthen	56	0			23	0	13	8						
Glamorgan	54	2			22	11	18	3						
Gloucester	57	2			23	5	22	2	31	1				
Somerset	56	2			24	4	18	10	30	6	30	0		
Monmouth	56	19			24	1								
Devon	61	1			22	4	18	11						
Cornwall	59	6			22	2	19	3						
Dorset	56	9			22	7	19	10						
Hants	53	11			22	6	20	11	33	6				

PRICES OF COALS AT THE COAL EXCHANGE, LONDON,
For APRIL, 1803.

Names of Coals.	Mon. 4th.	Wed. 6th	Frid. 8th	Mond. 11th	Wed 13th	Frid. 15th	Mond. 18th	Wed. 20th	Frid. 22d.	Mond. 25th	Wed. 27th	Frid. 29th
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Adair's Main	39 6											
Allen's												
Allerton												
Baker's Main												
Bedford Main												
Benton		41 6		41 9	39 9				40 6			
Beamish So. Moor												
Benwell												
Biddick Main												
Bigg's Main	43	43 9		44 3	44 3		43	42		42	42	
Blackfell												
Bladon Main												
Blyth	40									38 9	38	
Boundry												
Bourn Moor		39 3			40 6	40				38 6	38	
Bowes Main						40						
Brandling	40 3						40 6		39 3		40	
Byker												
Byker, High & Low												
Cowpen		40 6					40 6			37	38 6	
Dewsbury Main												
Eden Main							38 9	39		38		
Flockton												
Greenwich Moor												
Haraton												
Hartley							40 6			38 9		
Heaton Main				43 9			43	42 9		41 9	42	
Hebburn Main				43 9			43 6	42	43	42	42	
Holywell				39 3	39 3	39 3	39	38 6		37 9	37 6	
Hutton Main							43					
Kenton Main											42 3	
Lambton's Low d:t.												
Marley Hill												
Methley Park												
Montague Main				41						39	39	
Mount Moor												
Newbottle						39 3					37 9	
Old Ducks												
Pitt's Tansfield M.					42		41				43	
Primrose												
Rectory					39							
Russel's Main								38 4			37 6	
Simpson's Pontop												
Silver Tops												
Sheriff. Hill												
South Moor						38 9				38 6		
Stanley Main												
St. David												
Team						39 9						
Toft Moor												
Tyne Main												
Usworth Main												
Walbottle Moor						3 93				37 9		
Walker				44	44		43	42	38 6			
Wall's End				44 6	44 9	44	44	43 3	43 3	42 6	43	
Wharton												
Willington				44 3	43 9		43		43		42	
Windsor's Pontop											37 6	
Windsor's Tandf. M.												
Wylam Moor												
Wentworh					39 6	39 3						
Whitefield					40			36 3				
Wooler Main												

A TABLE of the Prices of STOCKS in *April*, 1803.

Days	Bank Stock.	3 per Ct. Red.	3 per Ct. Consols.	4 per Ct. Consols.	5 per Ct. Navy.	5 per Ct. Loyalty	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Ann.	India Stock.	Omnium.	5 per Ct. Irish	Consols for Act.	Tickets.
Mar. 28			65		98 5/8				64 1/4	11 1/8				64 3/4	18 0
29			62 1/4		98 1/4				64 3/8	11 1-16		12		62 1/4	18 1
30			62 5/8		96 3/4				61 3/8		202	16		62 1/4	18 1
31			61 1/2		96 3/4				61 1/8	10 15-16		16		62 1/2	18 1
April 1			63		97				61 1/8	11		15 1/2		63	18 1
2			63						62 3/8	11 1/8		14	93 1/4	64	18 3
4			67 3/4		96 1/2				61 3/4			15 1/2		63 1/2	18 3
5			63									16			18 10
6		61 3/4	63	78 1/2	97 3/4	96	18 5/8	3 15-16	61 3/4		204	15	92	62 3/4	18 10
7	166 1/2	61 1/2	62 7/8	77 3/4	98	96 1/4	18 1/4			11 3-16	209 1/2	15 1/2		63 1/2	
9											209				
13		62	63	78 7/8	98	96	18 5-16				205	15		63 1/2	19 7
14		63 3/8	63 1/2	79	98 1/2	97	18 1/2				203	13		63 1/2	
15	167	63 1/4	64 3/8	79 1/8	99 1/4	97 1/4	18 3/4				205	13 1/4		65	19 7
16		63 7/8	64 1/8	79 1/4	99 3/8	97 1/4						13 1/2		65	19 7
18	167	63 3/4	64 3/4	80 1/8	100 1/4	98 1/2	19	4 1-16				12 3/4		64 3/4	19 7
19		65 3/8	66 3/8	83	1 1 5/8	100 1/4	19 1/4	4 1-16			209	9 3/4		67	19 7
20	173	66 1/4	67 1/2	83 7/8	101	100 1/4	19 7/8	4 1 16			210 1/2			68	19 7
21	173 3/4	66 1/8	67 1/8	84	101 1/4	100	19 7/8				210		97	67 1/4	19 7
22	166	65 3/4	63 1/4	82 3/4	99 3/4	98 7/8	19 1/8						96 1/2		21 10
23	168	63	64	81 3/4	98 3/4	97 1/2	19				205			63 1/4	21 10

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

TO OUR READERS AND CORRESPONDENTS.

TWO of the Communications of our very respectable Correspondent, R. Weston, do not come under the denomination of Agriculture, therefore we are under the painful necessity of refusing them insertion. His Remarks on the Cultivation of the Kitchen Garden, and his Table, exhibiting the various modes of measuring land, will appear in our next Number.

We shall, in future Numbers, occasionally take the liberty, and we presume thereby gratify such of our readers as have not seen Dr. Hunter's Georgical Essays, of availing ourselves of the Doctor's liberal permission which appears at the conclusion of his Essays.

An Oxfordshire Farmer's Remarks on the Plan of improving Down-Lands, by successive crops of Turnips, came too late for insertion this month.

The second Letter of T. Weston, on the Subject of Cheese-making, likewise came too late for this month.

Farmer and Gardener's Dictionary.

This Day is Published,

GLEANINGS

FROM

BOOKS,

ON

AGRICULTURE,

AND

GARDENING.

SECOND EDITION, ENLARGED AND IMPROVED.

The improvement of the ground, is the most natural way of obtaining riches. *Lord Bacon.*

Many people wonder, why the curious enquirers into nature will give themselves so much trouble about exotic plants; but they do not sufficiently consider, that many kinds of *grain*, many *roots*, *legumes*, *fruits*, *sallads*, and *trees* in common use with us for nourishment, household utensils, clothing, and ornament, are originally exotics. *Stillingfleet's Tracts*, p. 186.

London:

Printed by W. Smith, King Street, Seven Dials.

FOR SAMUEL BAGSTER, STRAND.

AND SOLD BY JOHN ARCHER, DUBLIN; AND ROSS AND BLACKWOOD, EDINBURGH.

1803.

Farmer & Gardener's Dictionary

This Day is Published,

GLEANINGS FROM BOOKS
On AGRICULTURE and GARDENING.

PRINTED FOR SAMUEL BAGSTER, STRAND.

The general opinion of this Compendium is displayed by the immediate Sale of the first edition; its merit is stamped by the praise of the Reviews (two of which are selected) and the Author's desire to render it more eminently useful, is conspicuous by the introduction (in this, the second edit.) of GARDENING. *This edition has also undergone general Revision, and under many heads is given considerable increase of Information.*

Extract from the MONTHLY REVIEW *of Feb.* 1802.

"Literary distillation, if judiciously conducted, is often a very ommendable process; since by this mode the quintessence of bulky volumes is condensed into a very narrow space. The books which have been put into the still, on the present occasion, are The General County Views drawn up for the Board of Agriculture—Transactions of the Society for the Encouragement of Arts, &c.—Bath Agricultural Society Papers—Marshall's Rural Economy—Young's Tour—Hunter's Georgical Essays—Curtis's Observations on British Grasses—and Withering's Botanical Arrangements. From these works the Compiler has extracted a great Variety of Information, which he has arranged in alphabetical order under distinct heads, from ALDER to YAMS. We think that the publication will be very useful to Agriculturists. It may be considered as a concise FARMER's DICTIONARY."

Extract from the Review in the GENTLEMANS' MAGAZINE, for June 1801.

"This little Work gives the Essence of most of the recent publications of many favourite Authors on agricultural and rural Œconomy, together with the Surveys of the several Counties of England, Wales, and Scotland, drawn up at the Desire of the Board of Agriculture. Plants are described in their Varieties; Quantity of Seed necessary per Acre, according to the various Modes of Cultivation; Methods of cultivating, weeding, cropping, and seeding; and lastly, the several Uses to which the Produce, whether of Seed or Haulm, can be most advantageously applied. Trees, whether of the Fruit or Forest Kinds, are also treated of as to their Varieties, the Nature of the Soil they delight in, their Quality and Affections, as to their own Growth, or to what may be in contact with them; and the various Uses their Blossoms, Fruit, Leaves, or their Wood, are capable of. The Management of Bees, the Dairy, and many other useful Articles, are likewise introduced; together with a Plate of some useful Implements for Draining; the Manner by which Hay is saved in wet Seasons in the North of England, by a Practice called Tippling. The Whole is arranged with great Conciseness and Method, and will prove a most desirable Companion to such as have neither the Means or Leisure to peruse the bulky Materials from which this cheap Tract is judiciously selected."