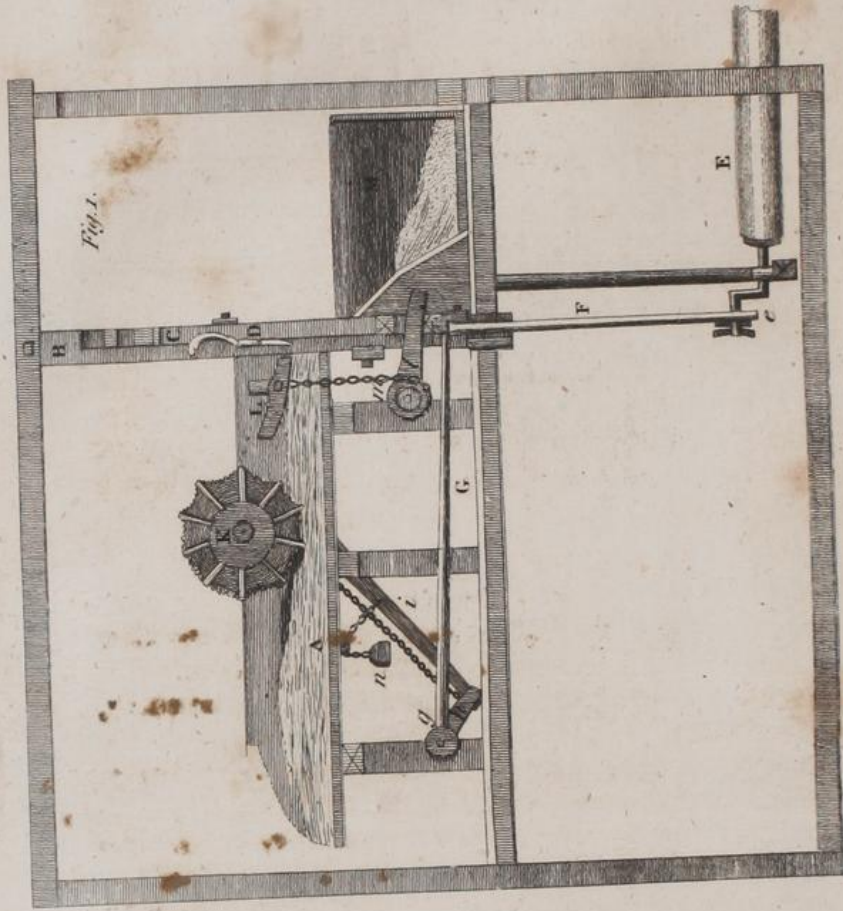
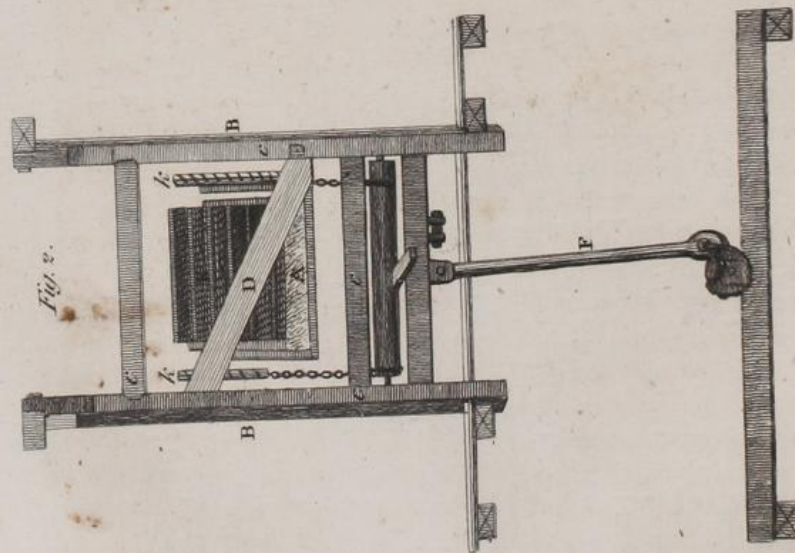


A CHAFF-CUTTER.



Steel-works, Bristol.



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THE
AGRICULTURAL MAGAZINE.

No. IV.] SECOND SERIES. [VOL. I.

FOR OCTOBER, 1806.

ON AN ANCIENT CHAFF-CUTTING MACHINE, DESCRIBED IN
LEOPOLD'S THEATRUM MACHINARUM, A GERMAN WORK
PRINTED IN 1724.

[With a Plate annexed.]

IN the annexed plate, we have given a side and front view
(figs. 1 and 2) of a very useful Chaff-cutting Machine.

A, figs. 1 and 2, is the box or trough, into which the straw,
&c. to be cut, is laid.

B B are upright posts at one end of the box A, between
which a frame, c c c c, slides, carrying the knife D.

E is a shaft, in the room beneath the machine, conveying
the power to work the machine from any kind of mill: it
has a crank, e, at its end, which connects by the rod F, with
the lower cross-bar of the frame c c c c; so that when the
shaft is turned round, it moves the frame up and down be-
tween the posts B B.

G is a lever, one end of which is jointed to the under side
of the frame, the other is fastened to the spindle g; this
spindle has at its ends, two other shorter levers (one of these
is not shewn) h, fastened to it; these by means of a rod i,
give motion to a racket-wheel k k, on each end of the axis
of the roller K, by which the straw, &c. is advanced towards
the knife.

l is a lever fixed to a roller, round each end of which a
chain, as m, is wrapped; the upper ends of these chains, are
fastened to pins coming through openings in the sides of the
box A, which pins are fastened to a presser L.

M is the bin into which the chaff falls when cut.

The box A, is filled with the materials to be cut, and the
shaft E turned, which as before shewn, moves the frame c c c
up and down; when it is raised, it lifts the lever G, which by
means of the bar i, turns the racket wheel and roller K, and

advances the straw, &c. under the knife. When the frame *c c* descends, its middle cross-bar, takes hold of the lever *l*, and by the chain *m*, draws down the presser *L* upon the straw, and holds it firm while the knife *D* cuts it, and it then falls into the bin *M*. While this is doing, the lever *G* is pushed down, and the end of the rod *i* slipped over the sloping side of a tooth of the ratchet-wheel *k*, being kept to the wheel by a small weight *n*. When the frame is raised again, the presser is released and the straw, &c. advanced by the roller as before.

SPECIFICATION OF A PATENT GRANTED TO THOMAS JAMES PLUCKNETT, OF THE PARISH OF CHRIST CHURCH, IN THE COUNTY OF SURREY, AGRICULTURAL MACHINE-MAKER; FOR A MACHINE FOR DIBBLING AND DRILLING ALL KINDS OF GRAIN AND PULSE. *Dated April 17, 1806.*

“**T**O all to whom these presents shall come, &c. Now know ye, that in compliance with the said proviso, I the said Thomas James Plucknett, do hereby declare that my said invention, and the manner in which the same is to be carried into effect and practice, are described in the manner following; that is to say: As dibbling is now found to be the only effectual way to sow corn, pulse, &c. in order to insure crops and save seed, by which the farmer will save immense expence, and never be disappointed of a crop. It is made as follows, viz. A hollow roller, of about three feet diameter, the ends made of wood or iron, or other fit material, about one inch and a half thick. The roller about one foot long, made with bars of iron, about one inch and a half square, or any other fit material sufficiently strong, placed all round the circumference of the roller, about six inches asunder, or at any other distance at which it may be necessary to plant or dibble the corn, pulse, &c.; for the distance of these bars will be the exact space of one dibbled hole from the other following; therefore, these bars will be placed round the two heads of the roller at six inches distance from each other, or more or less, as may be required; these bars being about twelve inches long, secured, or otherwise fastened at each end, at about six inches asunder, to the two heads of three feet diameter, from what I above describe as a hollow roller. Through the centre of this roller is fixed a square axle, of either wood or iron, or any other fit material, with only a sufficient round at each end for the round

collar to work in, which will be either cut out of the ends or metal collars fixed to them. The square of the axle should project sufficiently through the ends of the roller to admit of fixing securely to them shafts or a handle, similar to a garden-roller or wheel-barrow, if a hand machine; but if made larger for a horse, it will be necessary to have shafts for the horse to draw in; in either case it must be so securely fixed on the square of the axle, that the roller shall turn freely about in the collars above described, by which means the axle becomes a fixture to the shafts or handle. On this square of the axle is hung a hopper or trough, within side the before described hollow roller, of such dimensions as will hang freely, without any part of it being so close as to rub, or at any time touch, the bars or inside of the heads of the rollers. The mouth of this hopper or trough may be made to any convenient size within the hollow roller; but the bottom must be about two inches wide, and of nearly the length of the roller, made of iron or wood, &c. so that it is sufficiently strong to sustain the continued shocks of the bars, which will strike the bottom of the tumbler, which is fixed in the bottom of this hopper or trough. I call it a tumbler, because, as the bars strike the lower end of the upper part which is fixed in a mortise or groove in the hopper or trough, it is tumbled out of the mortise by means of being fixed through the middle by a pin at the bottom of the hopper or trough. The upper part within the mortise is the segment of a circle, about four inches diameter and about one inch and a half thick, or any other dimensions, as may be for the convenience of sowing large or small grain, or pulse, &c. This segment is so cut at the bottom of the hopper, that the centre is fixed just below the bottom, outside the hopper, for the convenience of changing the segment agreeably to the size of the grain or pulse which is to be sown; for the segment of this roller, working within the groove or mortise which is cut through the bottom of the hopper, so that the seed is agitated by the tumbler on its own axis, will consequently never open any part of that groove or mortise, which will prevent the grain or pulse within the hopper from dropping out. And in order that it shall deliver or tumble out the same quantity at every time, the bars of the roller strike against the lower part of this tumbler, or small segment of a roller, which is fixed at the under side of the hopper. There must be cut out of the upper edge of the segment next the front of the hopper, a recess, of a proper size for that purpose, something in the shape of a bean, which must be sunk within the segment; at the same time taking care to preserve the edges of the thickness of the roller up to the segment;

the corn, &c. will be liable to jamb between the mortise or groove and the side of the segment, therefore the form of the recess will be like the bowl of a tea-spoon, but smaller, or otherwise, as may be found necessary for the quantity of seed to be delivered. This recess being placed just within the thickness of the front of the bottom of the hopper, it will completely shut up the mortise or groove, until it is thrown open by the playing of the lower part of the tumbler against the bars as the machine is moved forwards, which will be at six inches intervals, more or less, agreeably to the portion of those bars which strike against the lower part of the tumbler, force it up in order for the bars to pass it; which must always be the case while the lower part of the tumbler is a little longer than the radii, as the bars revolve round its axis within the lower end of the tumbler. To the lower end of the tumbler is fixed a prong on a joint, which will only open from the underside of the hopper so as to project perpendicularly downwards, and there be stopped by means of its joint revolving no farther round the lower part of the tumbler; therefore this being about two inches long, will strike the bars, but, when doubled under the hopper by means of the joint, the bars will pass freely by it without disturbing the tumbler, and consequently not let out any of the contents of the hopper, which is necessary to preserve the contents of the hopper from waste, by rolling the machine the reverse way to that when at work. I have called it above a prong, because this little swivel is fixed to the outside of the tumbler, with two ears, through which, and the bottom of the tumblers, is a little pinion, which it swivels at the lower end, which is about two inches or more, if necessary, is divided so as to make a prong above described; by which means the hole which the dibble makes will be filled up, and the end covered over, as the dibble will deposit the grain between the prong, which is drove into the ground at the same instant the bars lift the lower part of the tumbler and prong, because the dibble is fixed to the upper part of the segment; and consequently the segment being on a centre, the dibble must be fixed into the earth in the same proportion as the bars lift the lower ends, or more, as may be found necessary, by fixing one or the other, more or less, from the centre. The hind part of the dibble is hollowed sufficiently to convey the grain, &c. to the ground; the lower part is pointed and the front about the thickness of a coulter, because it has two motions, being struck into the ground and passing forward at the same time. The upper end is placed in an eye of iron, about as much above the joint as the point is below, fixed to the outside of the hopper, through which it passes freely

every time it strikes into the ground, which is done by the motion of the tumbler, which turns out the seed at the same instant.

The above is the most simple, and best suited to agricultural purposes, being the least likely to be put out of repair; and if at any time injured, so little complicated that it will be sufficiently within the capacity of any country tradesman to repair it. Notwithstanding this instrument or dibbling machine may be made several different ways, and the principle still be the same, such as with cog wheels and plain round holes in the bottom of the hopper, which may be eclipsed by a slide and screw, to adjust the quantity to be delivered at each stroke of the bars against the ends of the small flaps or shutters, which are fixed on a hinge, and shut up the bottom of the hole every time by means of a spring wire inside, through the hole at the bottom of the hopper, which agitates the seed every time the bars pass, the ends of these shutters being a little below the bars, as above described, throw open the hole, and let out the seed the moment it is passed; it is again shut by the wire, which at the same time agitates the seed, and prepares for the next discharge. The dibble in this case may be fixed to each bar, or with a coulter, placed in a frame before the hole, to prepare a furrow as the machine is pressed forward.

The above is for the use of one man, and completely within his power; but if one or more horses, it is only necessary to make a larger and longer roller, and place several hoppers within side it, at such distances as are best suited to the country or lands where it is intended to be used, and which will be proper for the work of the number of horses to the machine. The whole of which machine may be made of either wood or iron, or partly of both, or any other proper material, if it is sufficiently strong for the purpose.

The machine may be varied in its formation; but the principle of dibbling, or placing seed in the ground, at equal distances, or nearly so, will still be by dillers fixed to the roller, or as above described. These are the most plain and easy to be repaired in the country; yet I do not confine myself to these ways only, as the above-mentioned roller and bars may be made to drive a spring dibble first up the hopper or bin, and with a recess in the back of it, like the bowl of a tea-spoon, or any other form suited to that purpose, bring out of the hoppers the quantity necessary, and deposit it in the hole made by the spring-dibble at the hind part of it, which would be as regular as the bars strike the dibble point, which, by projecting a little below the bars, would be by every one driven up to let them pass, and, by means of the

aforesaid described spring, would be forced into the ground, and deposit the quantity necessary at the same instant. The action of this dibble would be similar to the spring-bolt of a lock of a door, only with this difference, projecting perpendicularly downwards to the earth. This likewise can be made of any material sufficiently strong, iron, wood, &c. or partly of both, as may be found requisite. The roller may be made in halves, or a part of the bars to open, for the convenience of putting in the seed in hopper, bin, or trough; or the bars may be placed and secured round the heads of the roll after the hopper is fixed to the axle, as there will be sufficient space to put the seed in the hopper between the bars; however, it can be done either way, as may best suit the convenience of the person, and the levelness of the country where it is intended to be put in practice.

In witness whereof, &c.

The original specification, of which this is a copy, was handed to us by its ingenious inventor, and in our next Number, we shall present our readers with a descriptive plate of the machine. Editors.

ON RAISING LIVE FENCES.

To the Editor of the Agricultural Magazine.

SIR,

On reading in the first part of the sixth volume of *Dr. Rees's Cyclopaedia*, a long article on CANALS, written by a particular friend of mine, Mr. *John Farey*, the late *Duke of Bedford's* land steward and agent in Bedfordshire, (who is I perceive a correspondent in your last volume, page 302) his remarks relating to the planting and weeding of white-thorn fences, appeared to me of so much importance, that I am induced to extract the section on the subject of fencing therein, for insertion in your Magazine, thinking that it will prove useful to many of your farming readers,

And you will oblige,

Your obedient servant,

JAMES MITCHELL.

Stanstead Park, near Horndean, Sussex,

Oct. 15, 1806.

“THE fencing of the sides of a canal, is a business deserving of more attention than has been usually paid to the same. Quick-set or other live fences ought by all means to be made, except in the case of a rocky country, where good

and durable walls can be built at an easy expence: rail or pale fences are very improper except in and near towns, on account of their heavy expence in repairs. The continual *weeding* which quick fences require, the great injury which the plants sustain from weeds, if the same are at any time suffered to grow up, and the damage which the pulling or hoeing up of weeds so repeatedly, do, in wearing away the soil, and more or less exposing the roots of the quicks, and besides these, the plants being often wounded in their tender bark by the hoes used by the weeders, are most serious difficulties in the raising of quick-fences, wherever our experience has extended, except in the north-eastern parts of Norfolk, where the spirited and intelligent tenants, that there abound, have a method of raising fences, which they are continually doing during the currency of their leases, that we are happy, in this instance, of being able to mention, because it has not yet, we believe, appeared in print.

“The line of an intended hedge and ditch being marked out, the first step is, to collect carefully all the top-soil or vegetable mould into a ridge, where the centre of the bank is to be, and if this vegetable mould proves too abundant, the extra quantity is thrown into heaps further off, in order to be mixed with dung, or carted to some parts of the land, which wants a greater staple of mould. This done, a row of spits or lumps of earth *out of the ditch* are laid carefully in the front of the bank, and on these, when reduced to a regular line by paring with the spade, the white-thorn sets are placed a little inclining upwards, at about four or six inches apart; care is taken in laying in the sets, that their roots are bedded in the vegetable mould, that is to form the centre of the bank; when this is done, another row of spits or lumps is dug out of the bottom of the ditch, and laid upon the quicks, which being patted down and levelled at top with the spade, as before; another row of quick-sets is laid in, taking care that each plant in the upper row is over a space in the lower one, and that their roots are inclosed in the top-soil.

“Other sods are then dug out of the ditch and piled up, with the proper slope or batter, until the bank is raised to the intended height; the vegetable mould is then dressed up into a regular bank at the back, and the remainder of the stuff from the ditch is thrown over, and is afterwards carefully spread and laid up against the back of the bank, *so as entirely to enclose the vegetable soil in a case of dead-earth*, or stuff taken, from below where cultivation has deposited the seeds, or nature the viviparous roots, of such plants.

“Still further to accomplish this exclusion of the soil in the bank, from the action of the sun, air, and other stimulants

to vegetation, at a proper season in the spring, a quantity of dead-earth is pared up from the bottom of the ditch, and worked and chopped about, until it is in the state of *puddle*, (before described). The tops of the quicks are cut off, nearly even with the ground, after which, a labourer carefully plasters every part of the face of the bank, with this prepared or puddle-like stuff; and after it is laid on, having a pail-full of water at hand, to wet his spade in if necessary, he works this plaster about, giving the flat surface of his spade, exactly the circular and plastering motions that plasterers use when at work on a ceiling or wall. If it should appear, that frosts have mouldered down, or injured the facing of the bank, the same is carefully repaired and worked again, as above, before the season for the vegetation of the quicks.

“ As soon as the white-thorns have put forth their leaves in the spring, a careful labourer walks along the ditch, with a knife in his hand, and wherever a plant is missing, from among those which have shot forth, he digs in the point of his knife with care, to find and release the top of the set, which otherwise might be smothered and confined by the plastering of the bank. The benefit of this procedure is inconceivably great, in almost totally preventing the growth of weeds, and in confining the moisture in the vegetable mould, from escaping in dry seasons.

“ At a time in the summer, when every part of the surface was covered with vegetation, we have with pleasure examined some miles in length of quicks treated in this manner, and although the quicks had made the finest shoots which could be imagined, not a vestige of vegetation of any kind besides, was to be found on the bank; and thus, with proper care in renewing the plastering or working of the bank, many of them remain, until the quick is grown up to be a fence; and it is almost literally true, that weeding is here unnecessary, although no soil can be more congenial to, or worse stored with the seeds of annual weeds, than some of those were, of which we have been speaking.

“ The ditches are made deep, and the sides of them as steep as the soil will stand, in the general, so that dead or guard-fences are generally omitted on that side; and so they are often on the other, or back side, and a prick-hedge is substituted, which, with care, and the letting of sheep only loose in such fields, answers the purpose very well.

“ Some time before the bank is made up to the intended height, the labourer goes along upon the top of it, shovels off the loose top, and treads down the top of the bank so as to form a flat of perhaps twelve or fourteen inches wide; into the centre of this he strikes in his spade, and gives the same

a lunging motion, so as to open a narrow and deep notch ; this operation he repeats, until a notch of this sort is opened the whole length of the bank ; he then proceeds to stick this, with short and rough bushes, so close as to make a complete hedge ; he then throws up out of the ditch as much stuff against the bushes as will lay on the plane or top, in which the hedge is stuck, and beats the same down strongly with his spade ; the same process is followed at the back of the hedge, by which these bushes are so securely set into the bank, that they will often stand, until the quick is become a fence ; in places where the destructive pilfering of the poor is properly repressed.

“ Some may perhaps consider us, as going here too far into the subject of *fencing*, but we request of such to consider, how important the subject is, to a canal company who may have to raise much more than a hundred miles in length of quick-fences, as was the case a few years ago with the *Grand Junction Canal Company*, and some others ; some of whom are still feeling the very heavy burden of weeding their quicks, two, three, or four times annually ; which an adoption of the above principles would, we are certain, have tended to reduce most materially.

“ The quick for a canal ought to be placed a little above the level of the towing-path, and be separated therefrom by a small ditch, to prevent the towing-horses from biting or trampling on the quick ; but the principal ditch, (where the sudden falling away of the off-bank does not answer the same purpose) ought invariably to be on the field side, for keeping the farmers' cattle at a proper distance from the quick, and to check their attempts at jumping through or over it. The quick ought not to be placed too near the towing-path, and the hedges should be carefully cut and plashed about every twelfth year, both to preserve them vigorous and in good growth, and also to preserve the towing-path clear. On the *Oxford canal*, near Braunston, we remember, that the hedges were so grown over the towing-path, in the year 1799, that it was quite dangerous riding along, and the horses were driven so near the edge of the canal, by the intrusion of the bushes on the path, that the bank was suffering materially.

“ In places where the canal is embanked, it will be proper to place the hedge at the bottom of the slope, in order to enable the company, the better to prevent the growth of rank and large weeds, and the consequent harbouring of vermin, which would lodge in the bank : steep embankments might also be materially damaged by the treading of cattle on their sides. Through common fields, or very large pastures, it is sometimes not necessary to fence off the towing-path there-

from, but at the boundaries or entry to such fields, a gate is placed in the towing-path, to prevent the intermixture or escape of the cattle; and generally these gates are double, falling rather forcibly towards each other, by which construction, the cattle are prevented from pushing, or the wind from blowing open the gates, as would otherwise often happen. At the termination of every principal estate or farm, that adjoins the towing-path, it is usual to place a swing-gate across the same, to prevent cattle getting away, in case they should break, or by accident get into the towing-path."

That judicious cultivator, Mr. Overman, of Burnham, (mentioned at page 236, of our last volume) has, we understand, largely practised the mode of raising fences, which Mr. Farey has described above.

Editors.

A COMPARATIVE EXPERIMENT IN THE CULTURE OF WHEAT,
MADE WITH A VIEW TO ASCERTAIN THE EFFECTS OF
DIFFERENT MODES OF PREPARING THE SEED.

To the Editor of the Agricultural Magazine.

SIR,

Oct. 15, 1806.

PRAY insert the following account of a comparative experiment in the culture of wheat, in the next Number of your very useful Magazine.

Extremely sorry am I, Mr. Editor, that I cannot now discuss this, or indeed any other subject, in that full and ample manner which I have for several years pursued in the pages of the Agricultural Magazine. An inveterate complaint in my head renders reading and writing, to any considerable extent, extremely prejudicial to my health. My ardour to support the great cause in which you have so laudably embarked, to the utmost of my humble talents, has been so great that I have very frequently written to you, for hours together, under extreme pain, and with my eye-sight so much affected that I could scarcely write legibly—hence a great part of that erroneous printing which appears in my papers, particularly within the last twelve months. The complaint having of late become rather more severe, I must reluctantly curtail my letters to you, until I can address you under more favourable circumstances.

I feel highly honoured by that attention which my papers in your Miscellany have received from your correspondents, who I hope will exert themselves, *as much as possible*, in support of so useful a work. When I am able, I shall continue to read it as usual; and if I can send you only a quarter,

or a half sheet monthly, I shall do so with the greatest pleasure.

The seed-wheat used in the following experiment was as clean as any I ever saw; not a single smut-ball appeared on the surface of the water in which it was immersed. I have every reason to believe that it was free from infection, and that from such seed a crop of pure wheat may be obtained without any preparation. My disorder, however, is reminding me that I am at present unable to pursue this important subject; I shall, therefore, leave it in the hands of other correspondents, particularly in those of *Farmer Sandy*, who seems a powerful advocate for the judicious practice of *pickling*. I must also beg leave to refer to my letter in your 77th Number, which, if my memory is not defective, is greatly strengthened by this experiment.

I am, Sir,

Your most obedient servant,

AGRICOLA NORTHUMBRIENSIS.

Row. No. 1. Perfectly clean seed was dibbled in this row, without any preparation.

Produce.—Three hundred and fourteen ears in all; none of them smutted.

No. 2. In this row the same kind of seed as the above was used, after being blacked with the powder of smut-balls, and pickled with lime and salt water.

Produce.—Two hundred and eighty one ears in all; twenty-four of them smutted.

No. 3. Here the same kind of seed was used, after being blacked and pickled with old chamber-lye and lime.

Produce.—Two hundred and three ears in all; five of them smutted.

No. 4. Here the same seed was used quite clean, and pickled with chamber-lye and quick lime.

Produce.—Two hundred and thirty one ears in all; none of them smutted.

No. 5. The same seed clean, and pickled with salt water and lime.

Produce.—Two hundred and forty three ears in all; none of them smutted.

No. 6. The same seed clean, and prepared with chamber-lye only.

Produce.—Two hundred and seventeen ears in all; none smutted.

No. 7. The same seed clean, and prepared with salt water only.

Produce.—Two hundred and fifty ears in all; none smutted.

No. 8. The same seed clean, and used without any preparation.

Produce.—Ears in all one hundred and eighty-eight; none smutted.

No. 9. The same kind of seed clean, and washed in common water.

Produce.—Ears in all two hundred and fifty; none smutted.

No. 10. The same seed blacked with the powder of smutballs, and sown in that state without pickling.

Produce.—Ears in all two hundred and forty seven; one hundred and forty of them were smutted.

No. 11. The same seed blacked as above, and prepared with lime and common water.

Produce.—In all three hundred and fourteen ears; twenty-two of them smutted.

No. 12. The same seed blacked as above, and sown without pickling or any preparation.

Produce.—In all one hundred and ninety-six ears; ninety of them smutted.

No. 13. The same clean seed sown without any preparation.

Produce.—In all three hundred ears; none of them smutted.

No. 14. Here twelve small, very small, shrivelled grains were dibbled. They were very light, and skimmed off the water in which the good wheat was immersed.

Produce.—Nine of the above grains vegetated, and produced ninety sound ears, and three smutted ditto.

Note. The seed was dibbled, (on the 7th of April 1806), within an hour, in all the above rows, and without any variation of weather.

P. S. Your readers will please to observe that as the *quality only*, of the produce, was the object in view, the number of grains dibbled into the rows varied greatly. Hence the difference in the *quantity* produced. The trial was made in the interior part of a large field, and the experiment crop was surrounded with spring wheat. Every part of the experiment was made under my own inspection. The greatest accuracy was observed.

In your 2nd Number, an *Essex Farmer*, says, "it is not possible, that a farm of four hundred acres can have been let (in Northumberland) at the enormous rent of three thousand pounds, or more than seven pounds per acre." This gentleman has misunderstood what I stated in your first Number.

The farm contains much more than four hundred acres. Between three and four hundred acres of it were valued at about four pounds per acre, and this, I think, will appear in my letter in the above number.

A. N.

ON THE COMPARATIVE MERITS OF DIFFERENT BREEDS OF SHEEP

To the Editor of the Agricultural Magazine.

SIR,

A GREAT pressure of business has occasioned me to run greatly in arrear with your useful Magazine, and sorry am I that a continuance of that pressure will not admit of my discussing any subject but that in which I have been so long engaged: the comparative merits of different breeds of sheep; and even this I must now treat in a cursory manner.

The concession required by Mr. Wright, appeared to me *unreasonable*. I cannot, therefore, think that my objections to it appear at all like *obstinacy*. They might indeed deserve that name, if, after fair, proper, and successful trials, I had continued to maintain that Anglo-merino sheep are not the most profitable for *our heathy and exposed highland pastures*. But where have the trials been made by which these sheep have been proved to be the most advantageous stock for these pastures? I have heard of none which come near this description, except that noticed by Mr. Lawrence in your second Number; and I have so good an opinion of the judgment and accuracy of Mr. Robson, of Belford, (in Roxburghshire) that if Mr. Lawrence's information had been correct, and the pastures he mentions *in the Cheviot hills* had been heathy, stormy, and barren, I should have been silenced, if not convinced.

Your respectable correspondent W. W. of Hants, calls for *more facts and less speculation*: to facts then let us appeal. Most of your southern readers will consider the Cheviot hills as heathy and exposed; the fact is, however, that these hills extend far into the counties of Roxburgh and Northumberland; and, excepting Cheviot-hill itself, Hedgeup, and a few others, they are generally far from being heathy. Most of them have a fine verdure, especially those of Belford and other farms near the river Beaumont. The fine sloping green hills, lying contiguous to this river, may be ranked amongst the best sheep-walks in the kingdom; and some of those in the farm of Belford, are precisely such as I have repeatedly recommended for the Anglo-spanish breed

of sheep. The lowest parts of them produce plenty of hay, and considerable quantities of corn and turnips. Now, Sir, even if Mr. Lawrence's statement had been correct, it would have been no refutation of what I have advanced; but I believe Mr. Lawrence has been mis-informed. He says, "the cross of Merino rams with the Cheviot sheep, has succeeded with Mr. Robson beyond expectation; the produce has stood the winter well, and they are very promising both as to size and form, &c." From this a conclusion may be drawn, that Mr. Robson, has bred sheep from Spanish rams and Cheviot ewes, which have stood the winter well: instead of this being the fact, however, I understand that he has no sheep from this cross, except about a score of lambs, which of course cannot have been tried in winter. I have no reason to doubt the accuracy of this statement, but as some of my acquaintances will soon be in Mr. Robson's neighbourhood, I expect to be more fully informed, after which I shall correct it if it is erroneous.

The South-down sheep have been tried without success upon our Northern hills, where the Cheviot is the favourite breed. The latter sort of sheep have also been tried in Tweedale, and other stormy heathy parts of the country, where the black-faced, hairy-woolled breed—a most hardy race—have hitherto been kept with success. In most of these parts the Cheviot sheep have been found too tender, and less profitable, than the black-faced breed; and I cannot suppose that the Anglo-spanish are so hardy as the Cheviot sheep.—How can we expect, then, that they would answer well on our most stormy, elevated, and heathy hills? Even if their constitutions would render them able to withstand the extreme severity of snowy and inclement seasons, their feet would be too tender to carry them over so great a tract of ground as they would necessarily have to travel, to obtain a scanty pittance of the poorest food. The strong heather, almost instantly in a moist state, together with the rough and wet bogs and mosses, would soon, I apprehend, deprive them of the use of their feet. I should be very glad, however, to be convinced by proper experiments that I am wrong, and that our wool in these cold, barren, and elevated districts, can be greatly improved, as Mr. Lawrence states, without diminishing the supply they afford of a more important article—mutton. But I shall probably be told that my opinion is founded upon *supposition, speculation, &c. &c.* In answer to which I beg leave to remark, that I have as many *facts* to support it, as my opponents have to uphold theirs; or rather, considerably more. All the flocks of South-down sheep which have been tried in Scotland, and the north of Eng.

land, have proved remarkably subject to the *foot rot*. That injurious disorder I discover among my own every time I view them; and by comparison, I find they are subject to it in a far greater degree than other breeds upon the same pastures. I presume my opponents will not venture to tell me that these observations are not founded on *facts*, or that a dash of Spanish blood has operated as a preventive of this destructive disease. I know it has not, and I well remember that Mr. Bartley remained silent, when I put a question to him upon this subject. If then, our Anglo-spanish sheep are so subject to this wasting disorder in favourable situations, what would they be upon our rough, barren, wet, and elevated heathy hills in the north? Trusting that I have said enough to shew that my conduct is not *something like obstinacy*, and that the concession required by Mr. Wright was not a *reasonable* one, I shall now proceed to discuss some other parts of the observations and arguments of my opponents.

As to the observations of Mr. Wright, in the third and fourth paragraphs of his letter in your last Number, *on the grand question in debate*, I am sorry that various avocations which at present demand my attention, will not permit me to say much more than to refer him to my comparative statements in your 83d Number, to which he ought to have given a full and satisfactory answer, before he advanced the bold assertions in these parts of his last letter. These statements I confidently oppose to his assertions, and when he attempts to refute them by fair arguments, I shall endeavour to answer him. Even if I were to agree with Mr. W. as to the *seven* shillings per fleece, I think he will have a deal of cutting and carving to give a solid basis to his opinions. I am extremely glad that I have been so fortunate, upon the important subject of the diminution of price, which would take place in our markets for the finest wool, (if the flocks of Anglo-spanish sheep were greatly increased) as to have prevented my opponents from dwelling long upon the present high prices of that article. Mr. Wright has at length become a convert to my opinion upon that point also: to an opinion which is clearly supported by one of the leading principles of political economy. Why then, does he again maintain the *present* prices? Of what utility is it to mention these when he knows they could not be maintained? Such conduct seems calculated to mislead the unwary farmer, by inducing him to change his breed of sheep, which in a short time he would discover to be an injudicious method. Of course another change would become necessary; for the New Leicesters would again appear to these unwary men, to be the

most profitable sheep; and every experienced breeder knows how difficult and expensive it is to regain a good flock. This Mr. Wright very lately admitted in your Magazine.

Your, &c.

October 16, 1806.

PASTORIUS.

ON FINE WOLLED SHEEP BEING SUBJECT TO
THE FOOT-ROT.

To the Editor of the Agricultural Magazine.

SIR,

I LATELY requested information through the medium of your valuable Magazine, respecting that disease called the Foot-rot, in the South-down and Anglo-merino breeds of sheep, and beg your correspondent X X X, who has obligingly communicated information on that subject to accept my acknowledgments. Before I prefer these sorts of stock, however, I wish to see the opinions of more of your practical readers; for I am told by some friends, that they are often reduced in thin condition by the above disorder, in a far greater degree than any other breeds. In particular, I should be highly obliged to Agricola Northumbriensis, if he would do me the favour of communicating his sentiments in an early Number of your publication.

I am, your constant reader,

October 10, 1806.

A MERCANTILE FARMER.

ON THE DRILL AND BROAD-CAST HUSBANDRY—ON TURNIPS
AND POTATOES—ON THE PRODUCE OF THE LATE HAR-
VEST, AND NORTHERN REPORT.

To the Editor of the Agricultural Magazine.

SIR,

UNAVOIDABLE engagements in business, prevented me from having the pleasure of writing to you upon the remarks of your Essex correspondent, in the second Number of the second Series of your Magazine. In that publication your correspondent imputes to me some "dis-ingenuousness" and "mis-statements," on one of the chief points in dispute between himself and Agricola Northumbriensis, viz. the advantage of the drilling of turnips, in our northern mode, compared with that of drilling culmiferous crops. If these charges

are well applied, I am truly sorry that I should have given reason for them. I can only say that when my statements were offered to you, I had no intention whatever to mis-represent any thing which your respectable and ingenious correspondent had advanced. The fact is that I then took the clew of Agricola Northumbriensis, not at all doubting his correctness, in considering the dispute to relate entirely to the comparative *quantum* of produce, comparing that in the drilling of turnips and in the drilling of corn, with broadcast crops of each sort, his arguments being confined to *fair* experiments. A. N. was my senior in this important discussion, but as he has not offered any explanation in your last Number, or any remarks upon what your Essex correspondent has sheltered himself in (after being hardly pressed in a warm pursuit,) it seemed a duty incumbent upon me to examine those papers which gave rise to the controversy. This I have done, and I can see no reason to think that Agricola Northumbriensis had misunderstood your Essex friend. The former gentleman defends the drill-husbandry, both in the culture of turnips and corn. He also defends the use and superior advantages of employing the horse-hoe. And when to this we add the request, &c. of the Essex Farmer, that you would insert in your Magazine the drilling experiments of the Rev. Mr. Cook, &c. (No 82,) I cannot see how any one can entertain a doubt, that the dispute was upon the relative produce of drilled turnips and corn, each species of crop being compared with the produce—the *quantity* of produce—under the broadcast method of cultivation; for we all know (what A. N. has mentioned) that this reverend agriculturist, contended that drilled culmiferous crops would exceed the broadcast (in *quantity*) in the ratio of three, four, or more, to one. Viewing the matter in this light, (and I cannot see how we could otherwise receive it, as scarcely any difference seemed to exist, on other points, between the principal combatants), I think it will easily be decided in favour of Agricola Northumbriensis, in his late correspondence with “An Essex Farmer.” I shall not detract from the merits of the former gentleman’s communications, by attempting to say more upon the subject at present. It is worthy of observation, however, that they seem to be ably supported by the last communication of Agricola Norfolkensis. This correspondent, if I am not mistaken, is an advocate for much larger quantities of seed-corn, than those recommended by most of our great and reverend drillers, Cook, Close, &c. &c. Your Essex friend greatly inclines to the side of the latter; and perhaps the usual quantities of seed, upon *rich soils*, may be somewhat

too large; but I am of opinion that the quantities he alludes to, would be too small. In some cases, greater crops have been obtained from two bushels and a half, than from three bushels of wheat-seed per acre; and therefore, some theoretical husbandmen, by purity of reasoning, have concluded that one bushel and a half, or one bushel, would be still more advantageous. In matters of this nature, however, we should always call experience to our aid. Can any of your practical readers shew, from *fair* experiments, the *minimum* quantity for the most prolific crops, upon the various descriptions of soil? The matter should not, however, be confined to corn only; for as straw is the grand source of our manure, that part of the produce ought to receive great attention. Taking both the straw and grain, then, into the account, and likewise the time of ripening, the ascertaining the most proper quantities of seed, seems to be an enquiry of great consequence, and such I flatter myself, as will meet due regard from your intelligent practical readers and correspondents; none of whom I should be more happy to see *dilate* upon the subject than Agricola Norfolciensis.

From my own observations, added to what I can learn from other farmers in this district, I am strongly inclined to the opinions of Agricola Northumbriensis, as stated in his letter in answer to Mr. Bartley, upon the comparative merits of the turnip and potatoe husbandry. This letter, I beg leave to remind your Essex correspondent, stands in your pages without any satisfactory answer; and for the present, I must consider these observations as a sufficient reply to his statements in your last Number but one. As to his remarks on the failure of the turnip crops where potatoes have proved abundant, I have only to observe that turnips, cabbage, carrots, or potatoes, or some such species of food, must be raised for the winter and spring support of our stock; and if I were an inhabitant of any part of the country where the soils, climate, &c. are unfavourable to the turnip, I would certainly try something else.

In some of the southern counties it appears that turnips are a precarious crop—a crop not obtained with the same facility as in this district. What is this owing to; to the greater prevalence of the fly, caterpillar, or grubs; to the climate; to the state of the land; the rotation of crops; or modes of culture? It strikes me very forcibly, that the two latter have great influence in the failures which so frequently take place. In the south you have too much old grass, and too much old tillage ground. Convert the former into tillage, and the latter into clover and other artificial grasses for a few years. Thus would your plough be employed in *fresh* soils, which

alone are fit for the luxuriant and profitable growth of turnips. No experienced farmer can expect a great crop of this valuable root on old tillage land, unless where the quality or manuring is extraordinary. Oh! but I think I hear the lamentations of your southern landlords, for the breaking up of their dear old pastures—a breaking up, which, considering how much they are in love with them, would almost break their hearts. This, however, is a proof either that they are ignorant of good husbandry, and the best interests of their country, or that they are so rich as to be indifferent to that which would enable their tenants to afford much higher rents, and this, too, permanently.—Yes, Sir! I scruple not to affirm that the system pursued in this district, where all pastures but cattle grazing ones of the first quality give way to the plough, would *permanently* ameliorate their lands, increase their rents, and promote the prosperity and power of their country. Permit me, then, to recommend their adoption of it without delay, and also the displacing of their *law* and *butler* land agents, to make room for men of real knowledge, in a matter so truly important as the management of our lands. What signifies *extent* of territory! it is *produce* that enriches and strengthens a country. But how can we reasonably expect great produce, without proper systems of husbandry and able modes of culture? Can we expect these systems and these modes, while the men so generally chosen to direct the management of estates are ill qualified? In Scotland we suffer considerably from ignorant land agents, but in England you suffer to a far greater extent. It is really surprising that landholders remain so long blind to their own interest. If the Prussians do not shew more ability in defending their country, than the Austrians did last year, General Buonaparte (I will not call him Emperor, until he is acknowledged in that capacity by the government of this country) will soon be in possession of Berlin and all the provinces of Prussia. And if he should prove so successful, can we expect that he will either admit our manufactures into these countries, or allow foreign grain to be shipped for this kingdom. If the latter is refused, which most assuredly will be the case, how will your ingenious friend R. W. contrive to supply us with grain from abroad? or rather what method would he recommend? Probably the high prices will lead to the breaking up of many old pastures, which are at present comparatively improductive, and thus some good will result to Great Britain.

How far your Essex correspondent is in the right with regard to the autumnal application of muck for turnips (as in the broad-cast husbandry) I cannot positively say, when that husbandry only is in contemplation. This matter I shall de-

fer for future discussion, remarking, however, that I entertain some doubts upon the subject. But if our northern mode of turnip culture is included, then I hesitate not to say that he is wrong. Can he suppose that the dung will be equally efficacious when spread over the whole surface, as when the same quantity is put into the one-bout ridges, just below the rut in which the seed is sown? In his mode a great part of the manure would be employed in the broad intervals, increasing the growth of weeds where no turnips are growing; whereas in ours, the whole is employed to promote the growth of the crop intended to be raised. But though we cannot pay our "exorbitant rents" by the great crops of turnips we obtain by this excellent mode of culture, we are certainly very greatly assisted by them. One-fourth more than broad-cast crops together, with more corn and more straw afterwards, are important advantages.

When I mentioned forty to fifty bushels of wheat per acre as the broad-cast crops in many parts of this district, in favourable seasons, I did not mean to state that, as the average produce, which is greatly under the above quantities. In many parts of East Lothian, however, as well as in several within the counties of Roxburgh, Berwick, and Northumberland, these quantities are generally obtained in good seasons, and on the most fertile soils. The "*maximum*" produce in these counties, may, I understand, be stated as high as about sixty Winchester bushels of wheat per acre. In regard to what the Essex farmer asserts relative to the superiority of our northern soils, I have only to repeat my firm opinion that not only in respect to soil, but also of climate and markets, our brethren in the South have greatly the advantage.

As soon as I have a convenient opportunity, which I am sorry to say I have not at present; I shall endeavour to answer the question put to me, by your Essex friend, at page 103 of your second Number, second Series. I join this gentleman in the just tribute of praise which he has bestowed upon the recommendation of Agricola Norfolciensis respecting the sowing upon "a stale earth" the advantages of doing so, are great, more especially upon light soils and in drougthy seasons.

If Mr. Wright has been "too severe" upon me, I have forgot it, my temper is favourable to forgiveness, and my religion enforces its importance. Freedom of discussion, with argument upon argument, and explanations, I am friendly to, without them I really think the original communications for your useful work, would not only be less valuable and entertaining, but ill calculated to fill your sheets. Nevertheless the more facts and accounts of experiments, the better.—

Freedom of discussion may certainly prevail without unnecessary severity. Some readers, may perhaps, think that several papers in your work contain something of the latter description, when in reality the apparent severity is nothing more than the praise-worthy ardour of their authors, to establish what they conceive to be just and proper. Let none advance any thing but what is thought to be right, and if such conduct should lead to disputes, let them be managed with temperance, but at the same time with perseverance, till some positions are discovered to be untenable. Then should part of the disputants either cease the pursuit, or acknowledge error.

I beg leave to repeat that the communications of Agricola Norfolciensis completely establish my position relative to the comparative merits of drilling, (with a proper machine) and dibbling; for he considers the former as most advantageous when all the necessary calculations are made. I never supposed that dibbled corn would not grow very well; I only said that the drill machine was the most profitable and scientific mode of committing the seed to the ground. A Tomohawk Indian, if he were inclined to cultivate grain upon land in a foul state, would, perhaps, conceive that he could more easily eradicate the weeds by sowing in rows than in broad-cast. What method, then, would he pursue? why perhaps that of gardeners, with a line and a dibble to make a single hole at a time.— Afterwards he would probably invent a dibble that would make six, eight, or twelve holes at a time, to receive the seed from his rude hands. But is such a method not *barbarous*? and would not the drill machine be preferred, if his rude and uncultivated mind could be supposed capable of perfecting such an implement? Our great progenitor, Adam, when he was driven forth from the garden of Eden, would probably entertain ideas similar to those of the American barbarian, respecting the row culture, and would most likely proceed in a manner as clearly evincing his want of scientific knowledge. Is it not a reflection, then, upon an agriculture so celebrated as that of Britain, to continue the use of a dibble.

MONTHLY REPORT.

Our crops of corn in this district, are now nearly all carried home, some in good, and much in middling condition. We have had much favourable and much unfavourable weather during the harvest, which upon the whole has been rather perplexing. How the crops will yield, I cannot yet state. In point of bulk, however, they are considerably inferior to those of last year, the oats and barley in particular. Indeed they are so much so, that I apprehend the quantity of corn will not nearly equal the produce of the past season. The wea-

ther is now favourable for the wheat seed. Our fogs (after-maths) have been abundant, though the hay crop was small. Pastures are good, but the extreme dry weather in July, and too much rain afterwards, have proved very prejudicial to the turnip crops. They are, however, not much inferior to last year's produce. New oats are selling well, but the demand seems small for other sorts of new corn. Cattle and sheep are selling very readily at last year's prices; sheep especially.

Your &c.

Roxburghshire,
October 15, 1806.

FARMER SANDY.

P. S. The experiment of P. J. in your last Number, seems to confirm our northern notions as to the advantages of drilling corn; namely, that drilling is far from being so advantageous as some writers have stated. I am sorry this valuable correspondent should suppose his letters too long. For my part, I always think mine too short, and notwithstanding my inability for such employment, would make them much longer if I had more leisure.

I beg to inform W. W. (on the subject of smut in wheat), that the "locality of the stroke" has sometimes met my observation; still, however, I remain a firm advocate for pickling and the doctrine of infection. The partial mischief he notices, I have imputed to a difference in the materials used for pickling.

F. S.

REMARKS ON THE LATE ESSAY OF ARTHUR YOUNG, ESQ.
—USE OF SALT AND GYPSUM AS MANURES.

To the Editor of the Agricultural Magazine.

SIR,

I HAD never until of late, an opportunity of looking over Mr. Young's Prize Essay, on the Nature and Properties of Manures, and the mode of preparing and applying them to various soils, and must own I experienced great disappointment in the perusal. Without intending to question the good meaning of an old and meritorious servant of the public, or forming such a supposition as that Mr. Young was writing, merely for writing sake, or as they say at school, from the *cacoethes scribendi*, or what would be worse, with the view of amusing the grown up children of the farming public, and of our Societies; I must be so bold as to question, whether he has given us as useful, that is to say, as practical a view of his subject as was undoubtedly in his power. About what

Fourcroy, Darwin, Chaptal, Sennebier, Pearson, &c. &c. have said on the subject of Agriculture, I believe few farmers will ever trouble their heads, and the few who really do, will I fear, find it lost labour, time really mispent. But Mr. Young's own great and acknowledged experience, will always obtain him a hearing, when he writes to the practical understandings of his hearers, and details facts which he can support, or opinions of which they can judge, and which from their obvious utility, are worthy the trouble of a judgment. Such attention, however, he ought not to expect, when amusing himself in the boundless field of theory, or recording an endless catalogue of facts, or rather casualties, some perhaps of great, others not of the smallest consequence, either without deciding at all upon their merits, or deciding capriciously and variously at different times, as if the decision depended on heads or tails. Mr. Young, Sir, is surely capable, after his immense labours in the cause of agriculture, of far better things.

As an illustration of the nature of my complaint for loss of time, and for being merely amused in the place of instructed, I shall select Mr. Young's *circumscription*, or in the vulgar tongue of us farmers, *circumbendibus*, about and about. Salt, which has been used for centuries as a manure, and on which, it is almost impossible for wisdom itself to cast a new light, one would think, since our great scientific men, far from so doing, have involved it, although one of the plainest of practical subjects, in total darkness. This, however, is so common a case with the learned, that it scarcely deserves to be mentioned. Hear how Mr. Young, in his third chapter, strews about and besprinkles his salt.

"By various experiments too numerous to be detailed, (with a host of authorities in a subjoined note) it is decided that sea salt acts as a manure in some cases, when properly applied! Others have reported differently. Some say the quantity should be small, so errors are easily made, which with more care and attention, might have been prevented!!" Mr. Y. himself was convinced by experiments, that it was a powerful manure, but especially when added to dung or dung-hills. Chemical facts stated by eminent writers prove the same. Then follows a sort of chemical scheme, or analysis of the nature and qualities of salt, extracted from various writers, of which that most extraordinary position, that salt acts as a manure by *promoting putrefaction*, is the jet, and on which it is pretty clear, that neither Mr. Young, nor his authorities understand themselves, and so will neither convince or instruct others; for two of these learned authorities, one of whom is the fiddle-faddling Parmentier, agree with their

brethren that salt promotes putrefaction, and yet assert, that it is of no use as a manure!!! However, something is likely to result from this grand discovery of the septic and putrefying powers of salt, since I am informed by my last letters from France, that the *ci-devant* Cit. Parmentier, is now writing a memoir, addressed to the National Institute of France, to recommend the use of salt to fresh-killed venison and other flesh, by way of accelerating the putrefactive process and *haut-gout*, and rendering them tender, and the sooner fit for cookery: this memoir, when it arrives here, is to be translated by Dr. ———, and presented at the bar of the London, and Crown and Anchor Taverns.

Could any other thing possibly match this, it must be the recommendation of Glauber's salts, as a substitute for tea at breakfast, in one of the original surveys!

Now, in the name of all that is useful, instead of this flourishing, why could not Mr. Young tell us at once, what he must have known, that salt had ever been used as a manure, in various parts, particularly Suffolk and Cheshire, and that experimental practice far beyond memory, not only of the scientific, but of the merely practical, had determined, that the quantity used, must ever be small, and that the proportion must vary, according to each man's experience of his own soil. To this he might have added, and that would have been a tale before often by him told, the quantites per acre used in Suffolk, with a description of the soil, on which it was applied. As to how much acid, or how much alkali are contained in sea salt, the author might, with equal use, have told either his farming readers, or the Bath Society, how many prickly points are contained in a stinging-nettle of given dimensions. It is enough, in this case and many others, for both of them to know the certain facts, that nettles will sting, and salt will enrich the soil.

That Mr. Young has found the benefit of salt as a manure, my own experience convinces me is strictly probable, but I cannot at any rate, agree with him, in his mode of application. To add salt to dung is, I think, not only sending coals to Newcastle, but to put the matter of experiment on a most precarious issue, since how is it then to be determined, that the dung has not conferred the whole of the benefit accruing to the soil. One would naturally suppose, that salt would come in requisition when dung is not at hand, or in certain cases, where it might claim a preference. Who indeed would go to the expence of salt, when he could command dung?— I speak this even of those times when we bought foul salt at two shillings and three pence per bushel, of fifty-six pound.

In the Essay on Gypsum, I have the same fault to find with Mr. Young, as in the former article. As to fault-finding, were an apology required to an author who writes for the public, it is now too late to make any. I have regularly bought *all* Mr. Young's publications, and of course expect from him the best in each, of which I well know him to be capable. Without the least necessity of hesitation, he could have told us, that which his former writings convince us he well knows, namely, that his old friend Baron Van Haake, left a vast number of successors in Germany, England, and America; and that some of them have paid themselves far better than did the poor Baron. We do not wonder that Parkinson keeps up the old hoax of a bushel of gypsum manuring an acre of land, because his American travels is really a hoaxing book, and I hope it has answered his end. But Mr. Young knows better than all this; if he really does not, I will tell him and his readers what I know of it, from repeated trials, on my two farms: gypsum (plaster of paris) in thimblefulls, although of best taylor's measure, as commonly used, never did, or could possibly, affect the soil, one way or other; but in considerable quantities, is as good as chalk or marl, and for ought I know, somewhat better. My experiments on the small scale, of gypsum, after the rate of a chaldron per acre, brought a crop of wheat of very great bulk, and of fine grain, the soil rather a poorish sandy loam.

I have exceeded the limits I proposed, and remain, Sir, with my best wishes,

Your most humble servant,

Canterbury, Oct. 15.

O. S. T.

P. S. I might have mentioned one mode of using salt, of which I have heard a successful instance. A farmer, many years since, in the neighbourhood of large salt warehouses, had a considerable quantity collected of earth from ditches, and out of woods; into this he stirred and mixed some tons of fowl salt, and laid the compost upon poor meadow land in autumn; the consequence was, he took such a burden of hay from those meadows the ensuing season, as had never before been witnessed in that neighbourhood. But examples of this kind, even if numerous, could be of no avail to us in our present state. We want salt for taxation, and for manure to the treasury, not the soil.

ON TYTHES.

To the Editor of the Agricultural Magazine.

SIR,

IT is the opinion of the great body of farmers in the three kingdoms, of professional men whose occupation relate to rural affairs, and indeed of most of our economical writers, that tythes are a dead weight upon the husbandman's exertions, an entire loss to him, and the chief bar to rural improvements. I must acknowledge, with my learned and ingenious brother Howlett, that I have never yet seen a case fairly made out, which will warrant us in adopting such decisive opinions on the subject. It has never yet appeared to me, that the farmer pays one shilling more of the parson's dues or tythes, than the tradesman or the manufacturer, any farther than in the interest of his capital, in which, he stands precisely on the same footing with every other commercial person, making use of his property or capital for the purpose of gain. The public *must and do* ultimately pay the tythe, repayment being only stayed until the tythed article shall have reached its market; and with respect to the tythe of improvements, that attaching to product alone, exists only with the assets out of which it is to be defrayed, whence it is difficult to conceive, how the object of tythes can prevent any man from undertaking new improvements, which I am confident never did yet happen in this country, unless, indeed, in the case of whim or prejudice.

Wherever tythes are taken in kind, there is undoubtedly an individual hardship, because this practice being but partial, these individuals are perhaps double tithed. The case would be totally altered, were all tythes taken in kind, and the clergy allowed the full of their legal right; for then, the public would pay the whole, in an increased price of agricultural products. Even in the former case, or where individuals pay tythes in kind, they have the remedy of refusing such a farm, or of taking it at a proportionally reduced rent.

Let it not be supposed by the readers, and respectable farming correspondents of the Magazine, that I am an advocate for tythes in kind—far from it. I detest the disputes to which it has given birth, nor am I at all satisfied, indeed, with the arguments of those who support the principle, on which this ancient mode of supporting the clergy is founded. What have we Christians to do with the old Jewish law, but to read it for form, or rather curiosity's sake? Nor is there any more obligation of religion or conscience, for retaining the tithing system, than for abstaining from the flesh of swine or conies, to

which I humbly conceive, our bishops and legislators would be particularly averse. Any just and certain mode by which the clergy would be permanently sure of the full value of their *present general stipends*, I am confident, would be infinitely more for their quiet stability as a body, and real interest, than an adherence to the long exploded principle of tythes, perhaps so justly unpopular, and grating to every christian community under heaven; and in these sentiments I have been joined, in the numerous conversations I have held on the subject, with a revered brother in the West, the respectability of whose authority in the case, cannot be questioned.

That my practice and my doctrines coincide in this matter, at least, my parishoners, most of whom are readers, and one of them an eminent writer in your Magazine, will be my ready witnesses. If my private fortune be sufficient, it is well known to be far from large, the number of my family considered, nor is this rectory to be ranked with those which are styled rich; yet in twenty-five years, have I never had even the appearance, or probability, of a dispute with a parishioner; taking a general, and to me satisfactory, composition of each, in which, by mutual consent, all petty interests are included. I wish an adoption of the same management, and the consequent enjoyment of the same tranquillity, to the whole body of my reverend brethren.

Before I conclude, I beg leave to ask this question of our northern political economists—Is it fully apparent, in a comparison with England, that the non-existence of tythes in Scotland, has materially forwarded new cultivation?

Oct. 15.

CLERICUS & COLONUS.

ON COMPOST MANURES.

To the Editor of the Agricultural Magazine.

SIR,

IN a late most ingenious pamphlet of Arthur Young, Esq. Secretary to the Board of Agriculture, we find an almost total denial of the generally presumed advantages of the compost dunghill. Mr. Young says, that if certain substances promote fermentation, he would *therefore* reject them: that the only rational pretence for a compost, is in order not to *gain* any additional substance, but to *get rid* of an evil: that he knows of no decisive advantages, which may not be fairly attributed to the separate and detached application of the substances mentioned: concluding with his dislike of mere

reasoning on any agricultural question. Thus far, however, he acknowledges the utility of composts: First in the addition of substances, either at bottom or a top, for the purposes of retention, or to prevent evaporation; and farther, in the addition of alkaline substances, in order to neutralize acidity. Perhaps going thus far, Mr. Young has allowed all that the advocates of the ancient and well-tried system of composts, will be under the necessity to require.

The question will chiefly hinge upon the preference due to fermented or unfermented dung, and if Mr. Young will take the trouble to recollect his experience of that kind, it will surely strengthen his dislike to "mere reasoning;" for the cultivators of cold clays know too well, the general ill-success of dressing them with raw unfermented dung, which so often succeeds upon opposite or sandy soils. A farmer who dungs his land, doubtless, desires as early a benefit from the expence as possible; but most clay farmers have known even ill effects from a dressing of raw dung, and have, perhaps, experienced no benefit from such a manuring, even after several seasons. Now, of the application of rotten and well fermented dung to clay, the beneficial effects are always visible in the course of the crop. Experiment has not hitherto decided the precise value of fermentation, nor of those gases or vapours which are expelled and escape, and which may escape from the land, supposing the fermentation to take place there; and which, for ought we can certainly determine, may be entirely useless. We speak of the loss of manure from fermentation, but is not that analogous to the loss by boiling and fermentation, in preparing animal aliments? Is not that useless, which we so throw away?

Mr. Young seems to have forgotten the great use of mixing and compost of those articles, which of themselves, would never ferment, and in their entire and unfermented state, would lie years in the soil, an incumbrance to it. Yet on the whole, this publication of Mr. Young, partakes of that well-tried ability which distinguishes all his works.

JAMES BRIGHTLEY.

COLONEL CAPPER ON WASTE LANDS.

(Continued from our last, page 174.)

THE enclosure we suppose to consist of 1,000 statute acres. The soil in general of a tolerably good loam, the surface of the ground, broken and irregular, as heaths generally are,

with occasional land springs; such in short, as what is very well known to have been the state of Cardiff Great Heath.

With youth and health, an adequate capital, and persevering industry, I do not hesitate to assert, that any person may venture to undertake the cultivation of such a waste, and in the course of seven years, he will find himself amply repaid for all his trouble, anxiety and expence.

It is obvious, that as a proper number of horses and oxen must be requisite for every purpose of husbandry, that a person should possess a farm or two in the neighbourhood of the enclosure, where these horses and cattle can, at the outset of the business, be kept in good working condition. He must also have a certain number of barns, offices, and sheds, at these farms, centrally situated, and not remote from any part of the enclosure. Then the roads and foot paths must be marked out, with as little waste of good land as possible, to form ready communications between the different parts of the farm, as well as with due attention to the accommodation of the public. And whilst these outlines of the work are forming, a convenient spot, with a command of good water, should be selected for building a mansion-house, upon such a plan as would be comfortable in itself, and easily admit of necessary additions, without destroying its uniformity. When the plan, elevations, and sections are ready, the timber and all other materials being previously provided, a contract may then be made with some honest ingenious architect, for the execution of the buildings, both of the mansion and dependent farms, unless the proprietor himself derives amusement from superintending the work. But if he is a farmer, he will find, I should suppose, sufficient employment in directing the cultivation of the land.

When he has thus settled the plan of his own mansion and the farms, which should always have spacious and commodious fold yards, he will do well, without loss of time, to erect a sufficient number of comfortable cottages for his labourers, which he should let to them at a moderate rent, having previously pared and burnt about an acre of ground to each of them, and likewise purchased lime enough to put the land in a proper condition, both for a garden and a small field. By these means an indulgent landlord will have a certain number of useful labourers with their wives and children attached to him, who being always near their work, and certain also of constant employment, with liberal pay, will not easily be prevailed upon to quit him.

Thus settled himself, and surrounded by industrious labourers, he may then determine upon the plan he intends to adopt for his estate. It may be made one large compact

ring-fence farm, or it may be divided into various portions, according to the future views of the proprietor. The most profitable would, perhaps, be one large farm of three hundred acres, as demesne land, immediately belonging to the mansion, and the remaining seven hundred acres may be divided at pleasure into smaller farms of between fifty and one hundred acres. Thus every branch of farming would be comprehended. But whatever distribution may be made of the farms, the proprietor ought not to think of letting his land to a tenant, until he has brought it completely into order: the farmer, with a moderate capital, cannot afford to speculate, and he therefore will not take it at a fair valuation, until he is perfectly convinced that he is exempt from all risk.

The general plan arranged, the roads and foot-paths settled, the next step would be to mark out the shape and extent of the fields. When this is effected, I would advise the proprietor to make all the fences, and even plant them, by job, in the manner before described. This may be done partly by his own labourers, and partly by other persons accustomed to this kind of work. The greater the number of hands he employs, the sooner of course the work will be finished, and more of the land will, by these means, be speedily brought together into cultivation. If a sufficient number of labourers can be procured, the paring and burning may likewise keep pace with the progress of the fences, and in the course of three years, the whole estate might in this manner be made ready for the plough. With an adequate command of capital, much business of this kind may in a short time be performed, but at the same time it must be remembered, that breast-ploughing and burning do not pay the labourer so well as either mowing, or reaping, or hay-making, or gathering in the corn harvest, or even hoeing turnips; neither is it by any means so pleasant either to the men or women. It will therefore be necessary, especially as it is not good winter work, to begin very early in the spring, and much paring and burning may be effectually executed in the course of six months, from the middle of February to the 20th of June, and afterwards some portion of it may be done from the middle of July to the commencement of the corn harvest.

Whatever may be the plan of the new enclosure, if it be of considerable extent, many houses, offices, and other dependencies, will be necessary. The person, therefore, who undertakes such a business, will of course see the necessity of providing himself with the proper materials at the first hand; and he would likewise find it answer to him to establish a certain number of artificers on the spot, so as to save himself both time in the execution of the work, and expence in the

carriage of the materials after they have been wrought. It is needless to enumerate every different kind of tradesman, but smiths, carpenters, and masons, seem indispensably necessary, for unless they live near the enclosure, the works must frequently stand still, from even the common wear and tear, and consequent repair, of workmen's tools, as well as of the implements of husbandry.

But the perusal of this sketch of a plan for cultivating a thousand acres of waste land, embracing such an infinite variety of labour and expence, so far from encouraging, would probably in the first instance deter a person, who can command an adequate capital, from engaging in such an arduous and expensive speculation. It would certainly be necessary, at the outset of the undertaking, to be able to command a disposable capital of at least 20,000*l.* not that the whole of that sum would perhaps be required, even for the completion of the plan; but every body knows what advantages are derived, both in building and farming, from an unrestrained command of money. I am well aware, that it is no easy matter to find a person possessing strength both of body and mind, with the command of such a sum of money, who will withdraw himself, as before observed, from the delights of polished society, and thus engage himself in a concern, the failure of which would be attended with a serious loss of fortune. But let us consider if some means cannot be suggested of obviating these apparent difficulties.

Whilst the present spirit of agriculture continues, many young men will rise up, the sons and relations of experienced farmers, who, possessing much practical knowledge, will be perfectly well qualified for such an undertaking; and having from their earliest youth acquired a taste for agriculture, they are likely to follow it with skill, activity, and perseverance. Little then seems wanting to such persons but the command of money, which cannot be obtained for such a purpose, at least from any hand, but that of government.

The most easy means would be by a vote of parliament to raise a sum for the enclosure and cultivation of waste lands in every part of the united kingdom. This sum should be under the direction of the board of land revenue, to be advanced by them to proper persons, whose application for a loan should be certified by the commissioners of the enclosure, or the justices at the quarter sessions of the county. By these means a sufficient check would be established on such loans, and the principal obstacle to the improvement of waste lands be removed.

Great part of every new enclosure would probably fall to the lot of the lords of the adjacent manors, the borderers, or

those who are provincially called brinkers, of the wastes or commons: for these, as I have before observed, from possessing farms in the vicinity, are the best qualified to put the new enclosure into cultivation; but as they are, many of them, gentlemen of landed property, with increasing families, living up nearly to the full extent of their income, they cannot afford to appropriate a sufficient sum of money to the improvement of a lot of new land, which might accidentally fall into their hands. The board of revenue, in this instance, might safely venture to advance to them, at a low interest, a sufficient sum for ten years, taking for security the land newly enclosed, and long before the expiration of that period, the land, if properly managed, would amply repay all the expences.

But the borderers and gentlemen of great landed property would not be allowed to monopolize the whole enclosure; great part of it would doubtless be exposed to public sale, and the portions of it might be purchased by the young farmers above-mentioned. They themselves should be required to possess a sum sufficient to commence the work, and, in this case, the board of revenue need not hesitate to advance what might be considered as equal to two-thirds of the value of the land in a cultivated state, taking a mortgage with a bond and judgment on the whole for security. At the end of seven, or at the utmost of ten years, the industrious young man would find himself able to pay off all incumbrances, reserving to himself the undisputed possession of a freehold property, the well merited reward of his honesty, activity, and industry. The produce of the country would, by these means, become fully equal to its consumption; a general spirit of activity would, at the same time, pervade every branch of trade, and both the national commerce and revenue would also experience the most salutary effects from such extraordinary improvements in the agriculture of the country.

But it is not in this county only, but also in every part of the kingdom, that an increasing population seems to require every possible improvement in agriculture, and particularly for the enclosure of all such waste lands as are capable of being brought into cultivation. But it will clearly appear from what has been observed on this subject, that unless assisted by the fostering hand of government, this desirable measure is not likely to be carried into execution with any spirit, at least so universally as to afford any solid and permanent advantage to the public. It is not probable the wealthy should engage in such an arduous speculative undertaking; and none but the wealthy can support the expence.

But even if the legislature should hereafter take this subject into consideration, and not only facilitate the commencement of the business by a general act of enclosure, but even afterwards assist the farmer with a loan of money upon the security of the land, still there remains one other obstacle to be removed, which has already put a stop to many enclosures, even after all other difficulties have been surmounted. The farmer, who engages all his time and fortune to bring land into cultivation, will naturally see the way clearly open before him, so as to avoid all possibility of any dispute or extraordinary expence; but as matters now stand, he is liable to be involved in all the trouble and embarrasment of a tedious and expensive law-suit on a doubtful claim for tythe. The tythe laws on old land are pretty well understood; nor is it meant in this place to offer any opinion on that subject, but those on lands newly enclosed require further consideration. They are most of them obsolete, and open to various constructions; when therefore a general enclosure bill passes, it is to be hoped, that the legislature will, at the same time, clearly point out at what period the claim for tythe is to commence, and where a certain allotment of land is to be given in lieu of tythe. It will be no difficult matter to ascertain what quantity of land ought, in justice to all parties, to be appropriated to that purpose. When this point is settled beyond all possibility of dispute, whilst the present spirit of agriculture continues to prevail, I have no doubt but the produce of grain in Great Britain will always exceed the annual consumption, and that in the course of a few years, we shall be able to supply the occasional wants of our less happy neighbours, with whom agriculture and commerce are in a less flourishing state.

ANSWERS TO QUERIES RELATIVE TO DAIRC,
BY JOHN CONYERS, ESQ.

Extracted from Communications to the Board of Agriculture.

Q. 1. *WHAT* is your breed of cows?

Ans. The North Devonshire; having found by experience their superiority in every respect over all the others that I have tried. I might prefer the Herefordshire, if my land was firm enough to bear them; but mine, like the land in most dairy counties, is of a tenacious nature, and suffers by the treading of heavy cattle in wet weather.

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Q. 2. How are they fed in summer and in winter? and what quantity or breadth of grass and winter crops do they consume?

Ans. This must be regulated by the quality of the pasture; if extraordinary good, one acre will suffice; if moderate, one and a half. A Devonshire cow in milk, during the winter months, consumes about *one ton of hay or rather less.*

Q. 3. Are they kept in houses, or abroad?

Ans. Certainly best kept in houses, whilst any fodder is given.

Q. 4. Are they ever fed with green food mowed, and with what effect?

Ans. This, like most other dairy countries, produces very little green food, except the natural grass, and this is never mown green for fodder.

Q. 5. At what age are heifers sent to bull?

Ans. One of the greatest evils attending a dairy farm, is that of the cows slipping their calves, which is much occasioned by the heifers being sent too early to bull. Mine do not go to the bull before they are three years old.

Q. 6. At what age is it most advisable to dry cows for fattening?

Ans. I think this a most important consideration. I have observed in this, and most other dairy countries, the practice is to continue milking or suckling a cow till her constitution is so exhausted, that no power of fattening is left, and her flesh is then no better than carrion. In the vicinity of London, I am told, the Jew butchers purchase the cows that have been so worn out, at very low prices, to make sausages of. It is difficult to say precisely at what age a cow should be dried, as it must depend in some measure upon the constitution of the animal; but on an average, I think, between the ages of seven and nine.

Q. 7. What is the description of cows that, after milking, are the best adapted to fattening?

Ans. The North Devon.

Q. 8. At what ages are calves weaned, and in what manner treated?

Ans. Calves are weaned from the time of their birth, such only being taken for that purpose as are calved early in the winter, so that they may be of an age to graze, as soon as there may be any grass in the spring; they are usually fed by hand with skim milk and warm water; mine have an infusion of hay in the water.

Q. 9. Average product of your cows in butter or cheese, calf, and hogs?

Ans. Upon an average ten cows give five dozen pound of

butter per week in the summer, and two dozen in the winter. A good North Devon cow fats two calves a year. My thirty North Devon cows have this year, upon an average, produced (a profit of) thirteen pounds fourteen shillings per cow.

Q. 10. *Have any, and what improvements been made in dairy utensils?*

Ans. None.

Q. 11. *Are there any circumstances in the management of your cow pastures which merit noting?*

Ans. The management of a cow pasture, I conceive, does not differ from that of any pasture applied to other uses; it consists in not suffering any stagnate water to remain on the surface, or the land to be poached by the treading of heavy cattle in the wet season.

Soap ash seems to be the manure which produces the sweetest sort of herbage. The wild carrot is the only weed I am acquainted with, which is pernicious to the taste of butter. It is on the old pastures only that the best butter is made.

Q. 12. *Have you any particular method of manufacturing butter or cheese worthy of communication?*

Ans. None, but what is generally known; extreme cleanliness is required in every part of it.

Q. 13. *How are the skim milk and whey applied?*

Ans. Either to the fattening of porkers, or to the disposing of it at the rate of three-pence per gallon to the lower classes of the people, or to the taking of pigs to keep at the rate of from three shillings and sixpence to four and sixpence per week. I have known a hog fatted to the weight of sixty-six stone, without the offal, at eight pounds to the stone, fed only upon skim milk.

Q. 14. *What is the consumption of salt in the dairy?*

Ans. One pint per week for the cream of ten cows.

With the addition of any other information which may be conceived useful.

From my observations on the management of dairy farms, it appears to me that much loss to the public, and to the farmers themselves, is sustained by the produce of the cow, in butter, cheese, or veal, being the only objects of consideration; it is difficult to say what may be the amount of, but it must be very considerable, the meat that is wasted by negligence in procuring these articles. The management of a dairy being a matter of too much importance to be intrusted to the care of a servant, the fatigue of it generally falls upon the farmer's wife or daughters; the consequence of which of late years has been, that the use of the dairy has been much set aside, and the suckling of calves for veal, substituted in its place. When this happens, the profits from the farm are

diminished, the cows so employed are more rapidly worn out than those used for milking, and the neighbourhood, particularly the lower classes of it, suffer much from the deprivation of skim milk for their families, or the means of fattening their pigs, by paying a weekly sum for the keep of them. No one, except those who have witnessed it, can conceive what an encouragement the latter practice is to the frugal and industrious husbandman; and if farmers would dispose of their skim milk in this manner, more generally than they do, instead of contracting with pork butchers for the sale of their pigs, they would find their profits full as great, and they would eventually conduce to the lowering of their poor rates. Less butter being made than usual, owing to the circumstance I have mentioned, and the great expences attending a dairy, I conceive must contribute to the cause of that article increasing so much in price; but the management of a dairy, I believe, to be open to much economy. The consumption of fuel is an object of great consideration; and could the dairy farmers be prevailed upon to use coal instead of wood, and be made acquainted with the improvements lately made in the fireplaces for burning the former, they would soon be sensible of the advantages of it; such a practice is the more desirable, because it would be the means of the pollard trees being eradicated from, instead of being encouraged in the hedges. The value of the hay which milch cows consume in the winter, is a great deduction from the profit of the dairy. No effectual substitute for it has, I believe, been hitherto discovered. It is not till the second week in May there is usually natural grass enough for the cows to subsist on; but this evil is likely to be alleviated by the introduction of what is known by the name of the cow grass, which certainly appears to possess all the advantages of clover, without any of its dangerous consequences, and is getting to be much cultivated; the difficulty of ascertaining whether the seed is genuine at the time of purchasing it, is the only impediment I know to its becoming more generally used.

ON THE BURNING LIME WITH PEAT.

When the proprietor of this work was lately on a tour through the eastern counties of England, he was applied to by an eminent agriculturist at Snetisham, in Norfolk, for information on the practicability of burning lime with peat. We extract the following particulars from the fourth volume of the Communications to the Board of Agriculture, trusting they will prove useful to many of our readers.

I OCCUPY a small farm (my own property) in the north-east district of Cumberland, and in the course of ten years experience I find, that in the point of comparative ex-

penance, quickness of the process of burning lime, &c. that peat in many situations is preferable to coal. As to the expence, a man with a boy to wheel out the peat, will dig as many in one day as will burn fifty or sixty Carlisle bushels of lime (the Carlisle bushel is equal to three Winchester ones). The expence of drying them is not more than the digging, being in the whole about six shillings.

The coal at the pit in our neighbourhood is sold by measure at one shilling per quarter, and costs twelve shillings to burn the same quantity of lime, besides the expence of men and horses, drawing the coal perhaps three or four miles to the kiln. A great advantage in favour of peat when it is within a few yards of the kiln, as mine is.

The quickness of the process with peat is surprising, for in twelve hours after I put fire to the kiln, I have lime ready to draw; in burning with coal, none can be drawn for two or three days; and nearly double the quantity of lime is produced every succeeding day, than can be with the use of coal, owing to the peat keeping the limestones in an open porous state, and admitting a brisk circulation of air; for the same reason the limestones cannot be run into a solid lump, with excessive heat, as sometimes happens with coal.

You wish to know the proportion of peat to stone; of this there is no certain criterion, as peats are not all of the same quality; some stones are also easier burnt than others; consequently two or three days experience in burning is better than twenty pages of description. As stated above, I have peat at half the value I could have coal; in some cases it would be one-third the value of coal, and in some situations even equal, especially when far to drive to the kiln, as peat being a more bulky article than coal, requires more cart loads of it to a given quantity of lime than it would of coals. The wetness of seasons is no objection to peat, as I find by experience, that peat when about half dry will burn lime as well as when thoroughly dry, only the process of burning is a little slower. Peat may be stacked near the kiln, and burnt when convenient; or if burnt in summer, taken from the ground it is dried upon without stacking. I take no particular care in putting in the peat, only throwing in a layer of peat, and another of stones, taking care to have the lime well burnt: the stones I break no smaller than others in our neighbourhood who use coal.

This district of the county abounds with good limestone. The farmers generally burn their own lime; and even when coal is used, can get it cheaper than purchasing it at the kilns that burn for sale. I lately burnt one hundred and seventy Carlisle bushels of lime with peat, which, besides my

own and servants' work, cost me only two shillings, and this work not much more than what the tedious attendance of men and horses would have been at the sale lime kilns. Last summer I burnt two hundred and seventy Carlisle bushels of lime (that is near one hundred quarters, ten heaped measures to a quarter) with peat about half dry, and got good lime. I had only five men one day digging peat for the above quantity, the rest of the work was done with women and boys.

I have used lime burnt with peat, in building, in compost for meadow land, and for arable land, at the rate of thirty-five or forty Carlise bushels per acre. I prefer using it upon arable land for a potatoe or turnip crop, when hot or fresh burnt; as I once made an experiment, and found that it had the advantage in the succeeding crops of barley, clover, and oats, than when spread cold.

You would know the form and size of a kiln proper for burning with peat. The kiln I use is what is called a common draw kiln, is not a large one, but is sufficient for my farm.

A kiln should be built on the declivity of a hill to make it easier of access at top, and its foundation easier cut. A decent farm kiln for burning either with peat or coal, should be two and a half feet wide at bottom, and expand gradually to sixteen feet high, and seven or seven and a half feet diameter at top. May be built on a larger scale, but the less diameter at top, in proportion to the deepness, the better.

I should be happy if the interest of agriculture was in the least benefitted by the adoption of the knowledge of my peat burning plan. There is certainly many farms in the United Kingdom that abound with peat-moss and limestone; in this case the farmers might employ the poor of the neighbourhood, and their own servants and horses, without going off the farm, perhaps ten or fifteen miles to sale lime kilns, with the additional advantage of having their lime cheaper. And in a national point of view, if we consider the great demand for coal, and its exportation from Britain to all parts of the world, certainly that valuable mineral cannot be too much economized, especially if a substitute can be found for it, as may in peat.

Gentlemen, I would not deceive you by insinuating that I am the first, or the only person in Britain that used peat in burning lime; the only district, however, in which I ever heard of its being used, is by Sir Walter Maxwell's farmers, near Dumfries, in Scotland.

I had some conversation on the subject some months since, with an agricultural gentleman of the name of Maughan, from Hertfordshire, near London, who was in our neighbour-

hood surveying an estate, the property of George Sumner, Esq.; the use of peat in lime-burning was unknown to him.

Remain yours, &c.

JOHN DODGSON.

*Grahamonset in Bewcastle, County
of Cumberland, Dec. 15, 1803.*

ANOTHER COMMUNICATION, BY MR. JOHN DODGSON, ON
PEAT.

GENTLEMEN,

I HAVE for some years past practised the burning of limestone with peat, which I find by experience to answer so well, that I have quite laid aside the burning lime with coals, though I am only about two miles distant from the coal pit.

The burning lime with peat is so little understood, that a gentleman published a paper at Edinburgh, recommending a battering machine to pulverize unburnt limestone, stating the machine to be of the greatest importance, when no other fuel but peat could be obtained, inferring thereby that peats would not burn lime. I wrote against him, proving that I could burn lime cheaper with peat than with coal, &c. The advocate for the battering machine has not yet dared to answer me.

Yours, &c.

JOHN DODGSON,

*Grahamonset, Parish of Bewcastle,
County of Cumberland, Nov. 18, 1803.*

We extract also Mr. Dodgson's Answer above alluded to, which is as follows.

GENTLEMEN,

IN May 1802, one of your correspondents describes a machine for pounding unburnt limestone, for the purpose of using it as a manure; and says, that such a machine is of great importance, when no other fuel but peat can be had.

For my part, I can by no means approve of his enormous and expensive battering ram; but, on the contrary, think it totally useless, being convinced, from experience, that limestone can be burnt to better purpose, and at less expence, with peat, than with coal. When coal is used, the limestones are apt, from excessive heat, to run into a solid lump; which never happens with peat, as it keeps them in an open state,

and admits the air freely. The process of burning, also, goes on more slowly with coal. No lime can be drawn for two or three days: whereas, with peat, it may be drawn within twelve hours after fire is put to the kiln; and, in every succeeding day, nearly double the quantity of what could be produced by the use of coal. The expence is, comparatively, small. A man and a boy will dig as many peats in one day, as will burn 60 Carlisle bushels of lime, (the Carlisle bushel is equal to 3 Winchester ones), and the expence, including drying, will not exceed four, or, at most, five shillings; while the coal necessary for burning the same quantity of lime, would have cost twelve shillings at the pit. The wetness of seasons is no argument against the use of peats, as they can be stacked near the kiln, when half dry, at any time of summer; the moisture will be exhaled from them during winter, and they will be in a fit state for burning in the months of April or May. I live in the north east district of Cumberland, where the farmers, in general, burn their own lime; and though there is coal in the immediate neighbourhood, I give a decided preference to peat, for the reasons above-mentioned.

If you think these hints worth notice, you may insert them in your next. They may perhaps induce some of your readers to adopt the practice of burning limestone with peat, rather than pounding it with the expensive machine recommended by your correspondent; and, considering the great demand for coals, and their exportation from Britain to all parts of the world, certainly that valuable mineral cannot be too much economized.

I am yours, &c.

J. D.

P. S. A great quantity of lime is burnt for sale a few miles from Hawick. The coals are brought from Northumberland, over the mountains, upon galloways' backs, at a great expence, though there is plenty of peat within a few yards of the kilns. If the managers would use it, I am certain they would do much more business in the season, and be enabled to sell their lime cheaper.

MR. ANSTEY'S TESTIMONY OF THE USE OF PEAT DUST AND PEAT ASHES.

SIR,
 I RECEIVED yours, dated the 18th of November last, in which you requested me to inform you what experiment I had

Houghton Regis, Dec. 3, 1801.

made from the turf dust, taken from Tingrith Moor. I have made use of the ashes and dust near thirty years, and I frequently lay on from eighty to a hundred bushels per acre. Our land is dry and very thin stapled, owing to the chalk rock laying so very near the surface; it encourages vegetation in moist warm weather; but when hot and dry, the reverse. We never mix any other manure with it. It costs about four-pence per bushel, including all expences.

We chiefly spread it on our seed grass, clover, &c.

I am, Sir, your humble servant,

JOS. ANSTEY.

SULPHATE OF IRON IN THE PEAT OF RUSSIA, FOUND BY
PROFESSOR ROBINSON.

SOMETHING else beside vegetable matter is necessary to form peat or black moss of the moors. The smell of burning peat is different from that of vegetable matter. Peat ashes, says the Professor, always contain a very great proportion of iron; he has seen three places in Russia, where there is superficial peat moss, and in all of them *the vitriol is so abundant as to effloresce*. In particular, on a moor near St. Petersburg, the clods shew the vitriol (sulphate of iron) every morning when the dew has evaporated. According to this learned Professor's observation, the sulphate of iron in pit coal may be accounted for in the following manner: "peat mosses form very regular strata, lying indeed on the surface; but if any operation of nature should cover this with a deep load of other matter, it would be compressed and rendered very solid: and remaining for ages in that situation, might ripen into a substance very like pit coal. See the Medical and Chirurgical Review for November 1803.

ON PLOUGH-SHARES.

To the Editor of the Agricultural Magazine.

SIR,

PRESUMING that your publication is intended for the benefit of Farmers, I shall feel myself much obliged to any of your enlightened correspondents for information on the following subject; I am informed by a friend who lately travelled through the counties of Norfolk and Suffolk, that there are several improvements lately made in Plough-shares, which

to the farmer is of great importance, particularly in the stoney county in which I live. From what I could learn from him, there are three patent shares, made by Aggs and Brown, Norwich, and by Ransome, Yarmouth and Ipswich. In searching the Repertory of Arts, I find only two specifications, both of which belong to R. Ransome, Norwich and Ipswich; the last a new improved patent plough share, which appears to me a very essential one to the farmer, as it is made hard on the under side, and soft on the top, which makes it carry a sharp edge. I could much wish some of your Norfolk or Suffolk correspondents would favour me with their opinion thereon; also what advantage the other two patents, if such there are, consist of.

I am your constant reader,

Oct. 17, 1806.

A BERKSHIRE FARMER.

ON BURNING STUBBLE FOR MANURE.

BY MR. W. CURTIS, OF LYNN, NORFOLK.

Extracted from Communications to the Board of Agriculture.

IN a former period of my life, I occupied, under a grandfather, a farm of nine hundred acres of land, with as great diversity of soil as is, I believe, to be found in the same compass, in any part of the kingdom. During this occupation, I made many experiments of renovating old pasture land by tillage, and afterwards returning it to its original state. Amidst a variety of these essays, the following appeared to me the most worthy of imitation: I recollect breaking up two pieces of old pasture land, of an exact similitude of soil and aspect. The first piece I ploughed with a common Norfolk plough in the beginning of March, with furrows of about four inches depth. I then harrowed in, broad-cast, four bushels of oats per acre, rolling the land with a very heavy roller, as soon as the soil was sufficiently dry to permit the operation. The crop proved abundant: nine quarters per acre came to the bushel, exclusive of a very great loss, which was scattered in the field: the oats were shorn, leaving the stubble about eighteen inches high. The first fine day, after the oats were carried off, I took the advantage of a fair wind, and by the help of a candle and lantern, I so completely set fire to the standing stubble, as to consume every particle of it that appeared upon the surface; but previously to my so doing, I used the precaution of mowing the verges of it, to prevent any injury being sustained by

the surrounding hedges. This operation completely destroyed every weed and seed that grew, leaving the surface entirely covered with ashes. As soon as harvest was finished, I ploughed the land of a depth just sufficiently to conceal the ashes, and about a fortnight afterwards, I ploughed it again two inches deeper than before. By this variation in ploughing, the ashes became completely intermixed amongst that portion of the soil designed for vegetation. In the month of November I sowed it, broad-cast, with three bushels of wheat per acre, which I ploughed in furrows of about four to a yard, and at a pitch rather less than that at which it was first broken up. This crop, like the last, proved extremely advantageous; its produce being full five quarters per acre: I now once more recurred to my fiery system, which was accomplished as before recited.— Although it was my intention to have laid the land down with the second crop, I was induced, from the redundancy of its produce, to run the hazard of a third. I again sowed it with oats in the latter end of February, which I ploughed in, broad-cast, and which were reaped in the middle of July. After the oats were removed from the land, I mowed the stubble as close as it was practicable so to do, which I had directly collected, and carried into the straw-yard. Before July was expired, I ploughed the land the usual depth, harrowing it slightly but sufficiently to fill up the principal cavities upon the surface. When this was achieved, I sowed my grass-seeds, harrowing the soil till it was sufficiently pulverised for their vegetation and security; I then rolled it down, and left it to its fate. The last crop of oats had not a weed in it. The seeds in about a fortnight sprouted with great promise, and the oats that were shed upon the land grew up and proved a most excellent nursery for them during a winter of more than usual severity. I should also have burnt my stubble in the last crop, but as it would have destroyed the oats that were shed, I omitted it, that they might answer the purpose I have just related. In the spring of the year my seeds had a most favorable aspect, when I again applied to them a very heavy roller, and in the latter end of May I stocked the land slightly with both sheep and bullocks. After the first season, the land was mown and fed in the way it had been formerly occupied, and so far was it from being injured by tillage, that the crops of both grass and hay, as long as it continued under my observation, proved infinitely finer, and more, abundant than any of its former produce. The grass-seeds with which the land was sown, were the shaking of the finest natural hay I could procure: three bushels of which, with the intermixture of three pounds of narrow-leaved plantain, and ten pounds of white clover seed, were sown per acre. The hay which I selected

for this purpose, stood rather longer before it was cut than is the usual practice: by this method, the seeds became properly matured for vegetation, and the hay itself sustained little or no injury, either from so doing, or from the shaking out of the seeds, which was performed with a common fork: the soil that I have been speaking of was a loam, approaching to a clay. The other piece of land, which was only parted from the foregoing by a fence, I sowed with the same succession of crops as I have previously stated, but with very different cultivation and success. When the first crop of oats was housed, the stubble was rolled down with a heavy roller, and ploughed in to rot, as is the common practice in this county. My wheat crop which succeeded, fell short eight bushels per acre of my first, and had an infinity of weeds, from which that crop was totally exempt. Here again, instead of burning, I ploughed in my stubble, and in the ensuing spring, to keep up the exact similitude of cropping, I sowed this land with oats; harrowing in immediately after them the same compound mixture of grass-seeds as I before described. Here, as in my preceding crop, I found a considerable deficiency in my produce, and I had the additional mortification of seeing my crop of weeds increase in the same *ratio* as my crop of corn diminished. But this proved not my only disappointment; the combination of weeds and straw so totally extinguished every vestige of my grass-seeds, that I was compelled to re-sow the land as I had successfully effected in my first experiment. These seeds promised in the spring extremely well, and the land was stocked and fed exactly as the piece I first described. But in the succeeding seasons, the disadvantage of my second process was proved to demonstration: the crops of hay and grass were coarse and full of weeds, and so continued to the period at which I resigned it.

From the foregoing experiments, it is evident, that the burning of the stubble, and sowing the seeds at the time I practised it, are infinitely preferable, in every view, to any of the usages in either the old or the modern school. Where the soil is less luxuriant, I would recommend taking but two succeeding crops, and either laying the land down immediately after the second, or sowing a crop of turnips; and then, after a crop of either oats or barley, returning it to pasturage. Should the land be still of a slighter texture, I would take only two crops in the whole, and those with the intervention of a crop of turnips, laying the land down after the last as before described. When the land is so light as to give no expectations of a redundant produce, the seeds may safely be sown at the accustomed season, but where the corn is

likely to smother them in their infant state, August is indisputably the better time.

Independent of my own experimental information, I have not been an inattentive observer of the practice of my neighbours. I have seen a variety of soils turned from pasturage to tillage, and *vice versâ*; but I never saw any mode succeed equal to that of my own adoption. In all the experiments of others, the operation of burning has invariably been omitted: a measure equally calculated to enrich the soil, and for the extirpation of the weeds. I once, in order to bring a piece of land into the same course with others that surrounded it, sowed it with oats, though conscious it was extremely foul. Here carlocks, wild poppy, and a long *etcætera* of obnoxious plants portending me more injury than profit, I ploughed up one half of it before the seeds were ripe for propagation, and the other half I permitted to stand till they were sufficiently combustible for my fiery operation. I then took my candle and lantern, and consumed them as I had done the stubble. The consequences strongly marked the advantages of my second trial. The whole piece was in the ensuing season sown with turnips, when that part that had been burnt proved infinitely cleaner, and more productive than that which had been ploughed.

DESCRIPTION OF A HIGHLY PERNICIOUS ROOT WORM, BY
CLAS. BIERKANDER, FROM THE TRANSACTIONS OF THE
ACADEMY OF SCIENCES IN SWEDEN, 1779.

THE *grub* is yellow, the head brown with the extremities of the jaws black, the body is composed of twelve joints, shining and hard skinned; when it changes its skin, it is for some time white; a few hairs are scattered here and there, but mostly upon the head and last joint; under the three first joints are six horny and pointed feet, and at the beginning of the last joint, which is round, there are two black spots one on each side, which are, probably, apertures through which it breathes.

The *pupa* is white, three lines long, eyes black, over which are two brown horns; the breast is smooth and round, antennæ moniliform; the belly has ten joints, the last of which is furnished with two fine points in the corners.

Elater segetis; the whole body black; the antennæ brown, and the length of the breast. The elytra have longitudinally black and brown lines. Feet black, with the last joint brown,

After having fed these worms with corn roots in jars for five years, some of them at length, this year, in the month of July became a *papa*, from which, about the tenth of August, the *elater* appeared in its perfect state. This length of time before they undergo a change was the reason why they were not described with the other root worms.

These worms are the husbandman's partners in wheat, rye, barley and oats. After a long fast, in the spring and autumn they have good appetites. I had often observed that a single worm has bitten from 8, 12, to 20 stalks in one place; when one destroys so much, what may not many thousands do? They object most to low places, for which reason the greatest damage is done in the ridges. In a square ell* turned with a spade in some fields 4, 6 to 8 worms have been found.

While the fields lie fallow they subsist on grass and other vegetables, from which, it is evident, that their increase is encouraged when the fallows are not taken care of, when couch and other sorts of grass grow in them, and when there are many and large balls or plots of grass in the fields.

As juniper berries do not all ripen in one year, so it is also with these vermin; some are a line long, some half grown, and others full grown and ready to undergo their change; it is, therefore, more than one year that each worm has an opportunity of destroying the corn in the blade.

I have made many experiments to discover by what means they may be destroyed. Many were put at one time into tea cups filled with the following vegetables, viz.—

	Days	Hours,
Garlic, among which they lived	9	0
Spruce leaves	0	14
Fir leaves	0	10
Ledum Palustre	0	9
Myrica Gale	0	2
In water they lived	4	0

In consequence of this it ought to be tried, how useful it might be in winter and summer to mix in the heaps of manure, fir leaves, ledum palustre, and myrica gale, of which vegetables the dung would smell, which might probably be disagreeable to the vermin; and if they did not die in consequence of it, they might, perhaps, quit the fields.

To mix, as some agriculturists recommend, cut garlic as a remedy against root-worms, among the rye, and let them lie

* Four square feet.

together a day or two before it is sown, it appears, would be of no avail against this sort, for they live among this vegetable many days, and instead of flying from the smell they creep into the bulbs, and also remain in the earth where they grow.

Where there is an opportunity of laying the fields under water and drown these robbers, the process would be tedious, as they will live many days in water.

As these destroyers are always in the earth, the birds* cannot diminish their numbers: nature has, however, furnished allies against this army of vermin, as an ichneumon, by means of its aculeus or egg tube, if I may so call it, insinuates its eggs into many of them, so that in thirty worms which I have taken, I have found six that have been thus quartered upon. From one of these worms, with the loss of life of the host, 6, 10, 13 to 20 guests have come out. Which ichneumon this is, I have not yet discovered, as the pupa put into jars have all died.

In a field where rye was intended to be sown, I last autumn employed a child to follow the plough and pick up the worms; by this means 351 worms were collected in a piece of land 600 feet long and 56 broad. The quantity which was taken in other fields was not counted. There was caught in the furrows, according to their length, 4, 6, 10 to 14 worms. It would be serviceable if children always followed the plough and gathered these yellow worms into a bottle, they would by that means be considerably diminished, and perhaps, in time entirely exterminated.

These enemies not only plunder the ploughed fields, but also meadows and gardens. In these places are also seen larger and broader yellow worms, which are the larva of another species of *elater*. Of these there is a drawing in De Geer's *Mémoires sur les Insectes*. Vol. V, Feb. 5, fig. 23, something different in shape from the larva of *elater segetis*, which I have described.

As this grub attacks wheat, rye, barley, and pulse, it has not occasioned any error in the supposed transformation of corn.

The 14th June a worm drew from its mouth a thread eight inches in length.

My lot and my pleasure has been to investigate root worms, as to their nature, manners of living, and qualities. Posterity must discover some more fortunate method to exterminate or diminish them.

* There are no rooks in Sweden.

ENUMERATION OF PATENTS LATELY GRANTED
FOR NEW INVENTIONS.

- August 30,* **T**HOMAS PEARSON, of Haberdashers' Place, in the parish of St. Leonard Shore-ditch, in the county of Middlesex, wholesale upholsterer; for a machine or machinery for the purpose of cleansing, seasoning, and dressing feathers and other articles.
- 30, John Carey, Dr. of Laws, of Camden-street, Islington, in the County of Middlesex; for various contrivances for preventing or checking fires, and preserving persons and property therefrom, by means of divers improvements in alarms, chimnies, cisterns, fire screens, and other articles.
- 30, Christopher Wilson, of Windmill Street, Tottenham Court Road, Middlesex, master mariner; for a new system of naval architecture.
- September 6,* Robert Newman, of Dartmouth, in the county of Devon, ship-builder; for improvements in the form, formation, and construction, of ships and other vessels of war, and ships and other vessels of commerce, and of sloops, barges, and other vessels, any otherwise employed.
- 15, Joseph Manton, of Davies-street, Berkely-square, London, gun-maker; for improvements in double-barrelled guns.
- 18, Isaiah Birt, of Plymouth Dock, in the county of Devon, Gentleman; for a black paint, composed chiefly of earthy and mineral substances, which will be beneficial to our navy, and the shipping-interest at large; being particularly calculated to preserve wood, and prevent rust in iron, and may be applied to all purposes for which paint in general is used.
- 23, Marc Isambard Brunel, of Portsea, in the county of Southampton, Gentleman; for a new mode of cutting veneers, or thin boards.

CRITICAL CATALOGUE.

General View of the Agriculture of the county of Clydesdale; with Observations on the means of its Improvement: drawn up for the consideration of the Board of Agriculture and internal Improvement, by JOHN NAISMITH. 1806.

THIS is the most able, which we have hitherto had occasion to examine, of the Scottish Surveys. Mr. Naismith, who has several times before, respectfully supported the character of an author, is a man of enlightened and liberal views, and of the soundest principles as a political economist, in which character, indeed, he appears to most advantage, possessing however a sufficiency of the theory and practice of agriculture, to avoid any extraordinary errors, and to render his work interesting to the farming reader. His language and manner of treating his subject, moreover, are those of a man accustomed to the rules of good composition, and he writes in pure and classical English, his diction being altogether free from those Scotisms, which debase, even at this day, the pages of some of our best northern writers. He does not condescend upon a subject, nor burlesque the future tense, by substituting *et vice versa*, the will for the shall. He is also free from the rash confidence and prejudices of the generality of Scotchmen, who have lately written on farming affairs, and speaks with a judicious caution on the contested subjects of summer fallows and ox-labour. Against vain theories and pretended science, he in more places than one, enters his caveat, yet we find in page 239:

“ Happily, the late discoveries in chemistry and natural history, have now overthrown those false and absurd theories, with which the practice of agriculture has too long been encumbered. Speculative people, who have aimed at being more wise and learned than the laws which nature prescribes to us, seem to admit, and, to take an easier way of attainment than she has directed, have, one after another, advanced their systems. By those blind guides, the agriculturist has been led to grope and stumble in the dark, and, when he was made to believe he had laid hold of the truth, has found, in the end, that he only grasped error. The discoveries alluded to have restored him to the day, and taught him not to enter the cavern of inquiry without the torch of experiment in his hand. Though those discoveries should proceed no farther, they have been a great benefit to agriculture; but, it is probable, they will still have more considerable effect.”

Is he really serious there, or has he reflected with his usual depth of research? Assertions in forms of words of this description, are now everlastingly repeated by our writers, but to these set forms, or rubrics, they confine themselves, without deigning to give their, perhaps less clear-sighted readers, the why, the wherefore, or the what. Mr. N. would have much obliged us, we repeat, by a particular or numerical intimation of at least some of the late discoveries, as well as of the false and absurd theories which have been, by such discoveries overthrown; and as he and others have failed so to do,

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we hope some capable writer will shortly undertake the task, or at least point out where it has already been done, which we possibly may have overlooked from its recluse existence. Mr. N. has afforded us the opportunity of saying something, perhaps, not *mal apropos* on this subject: he represents Mr. Cook, as the discoverer of rolling land in order to kill slugs, a practice tried before that gentleman's grandfather had reached his cradle: with great propriety, might Mr. Cook be called the inventor of the drill-machine, which he copied and improved from Tull. Even this author's specimens of the new science are in the usual style. He tells us page 105:

“All vegetables are compounds made up, *1st*, Of principles, which, when freed from combination, are aeriform; *2dly*, Of charcoal; *3dly* Of a small quantity of earth. This is proved by submitting any vegetable to combustion. If the fire is smothered, the aeriform principles only escape, and a bulky residue, consisting of charcoal, debased with a small proportion of earth, is left; but if the fire burn freely in the open air, the charcoal, combining with air, also escapes, and nothing remains but a small quantity of grey ashes, which is the incombustible earthy part of the plant.”

Now both vegetable and animal bodies are doubtless so constituted and yield such results—and what then? The nature of vegetables has been for centuries so studied. We remark this merely because such well known truths are now continually introduced, as something either of novelty, or leading to novel results, which however we do not always discover. In another page Mr. N. has really made a pleasant discovery, although we presume inadvertently; we mean that of the proper sex of a magazine, styling the Farmers magazine, *he*.

Before we proceed to make extracts, in which we shall be liberal, in proportion to the value of the work, we commend the author strongly, and with confidence to our readers, as a warm friend to the farmer, the landlord, and to the best interests of his country; and we much wish these our remarks may fall into the hands of Mr. N. and his friends, being proud of rendering the tribute of our respect to a man who has so well deserved it.

Speaking of the aggregate or body of the Reports of the whole Island, this author seems to promise that which would be of singular national advantage: he says page vi. of the plan:—

“When all these Surveys shall have been thus reprinted, it will be attended with little difficulty to draw up an abstract of the whole (which will not probably exceed two or three volumes quarto) to be laid before HIS MAJESTY, and both Houses of Parliament; and afterwards, a General Report on the present state of the country, and the means of its improvement, may be systematically arranged, according to the various subjects connected with Agriculture. Thus, every individual in the kingdom may have,

- “1. An account of the husbandry of his own particular county; or
- “2. A general view of the agricultural state of the kingdom at large, according to the counties, or districts, into which it is divided;
or,
- “3. An arranged system of information on agricultural subjects,

whether accumulated by the Board since its establishment, or previously known:

And thus information respecting the state of the kingdom, and agricultural knowledge in general, will be attainable with every possible advantage."

"SITUATION AND EXTENT.—Clydesdale is so called from the noble river which has its source in the upper confines of the district, traverses it in a winding course of upwards of sixty miles, bisecting it longitudinally, and afterwards wafts the trade of Glasgow to the ocean. This tract is otherwise called the county or sheriffdom of Lanark. It is situated between $55^{\circ} 22'$ and $55^{\circ} 58'$ north latitude, and between $3^{\circ} 15'$ and $4^{\circ} 19'$ west longitude. It is in the centre of the country, between the Atlantic and German Oceans, and is bounded by the counties of West and Mid Lothians and Peebles on the E., by Dumfriesshire on the S., by the counties of Ayr and Renfrewshire on the W., and by those of Dumbarton and Stirling on the N. The greatest length from N. to S. is about 47 miles, and the greatest breadth from E. to W. about 32 miles. The square contents are perhaps nearly 870 miles, equal to 556,800 English acres, or nearly 445,440 of the ordinary Scotch measure.

"This district is subdivided into three inferior divisions, called *wards*, each under the particular jurisdiction of a substitute, appointed by the sheriff depute of the county. The upper ward, of which the ancient burgh of Lanark is the chief town, comprehends the parishes of Carluke, Lanark, Carstairs, Carnwath, Dunfire, Dolphinton, Walfston, Biggar, Liberton, Lamington, Coulter, Crawford, a small part of the parish of Moffat, the rest of which is in Dumfriesshire, Grawfordjohn, Douglas, Wiston and Roberton, Syminton, Covington, Pettinain, Carmichael, and Lesmahagow. The middle ward, of which the town of Hamilton is the centre, comprehends the parishes of Hamilton, Blantire, Kilbride, Avondale, Glasford, Stonehouse, Dalserf, Cambusnethan, Shotts, Dalziel, Bothwel, East Monkland, and West Monkland. The lower ward, lying immediately around the city of Glasgow, besides the county or barony parish of Glasgow, contains the parishes of Calder, Cambuslang, Rutherglen, Carmunnock, Govan, and a part of Cathcart; the remainder of this last parish being in the county of Renfrew.

"There was a large map of this county published by Mr. Ross, in the year 1773, and an abridgement of it has been since made on a small scale. As no plan of the county has been taken for this Report, which, for the sake of the many new lines of roads lately drawn, would have been desirable, the reader must be referred to these maps."

On the subject of lime, and on the lead works:

"Lime is used for the purposes of building, as a flux in the smelting of iron, and chiefly by husbandmen with an intention to ameliorate the soil. Whatever uncommon increase of fertility the application of it may have occasioned, in different districts, it must only be held as a simple ingredient in the soil, not as administering direct food to vegetables. Quick-lime dissolves in about 1500 times its bulk of water, and in that state kills vegetables. When it becomes effete it is quite insoluble, and cannot pass into the organs of

plants. Nor has it any peculiar quality of dissolving the food of vegetables. Wet straw rots faster in garden mould than in effete lime. Its effects on vegetation, therefore, must be attributed to its nature and properties, and those of the other earths, opposite to each other, acting reciprocally upon one another, and upon the water which falls on them, by which the vegetable food locked up in the soil is set at liberty. It is, however, a valuable ingredient in soils, as it greatly promotes the growth of the trefoils and other esculent herbage. It has not been well ascertained, what proportion it should bear to the other earths. BERGMAN found a fertile soil, contained one-fifth of effete lime, GIOBERT 11-100ths, and TELLET 3-8ths. The writer of this has found, that more than one-eighth rather injured than promoted vegetation. Though there is abundance of lime stone in the moorish grounds of the parishes of Lefmahagow, Douglas, &c., the beds which have been found in the cultivated parts of the county are greatly exhausted; and seem every where to be dipping so much under the surface, that it is to be feared the expence of raising it will soon put the price beyond the ability of the husbandman to apply it to advantage. About 260 labourers were employed in the different lime quarries when this Report was last published, and the value of the lime was about 12,500*l*. There is little more lime wrought now than formerly, but the additional expence of raising it makes the price now 14,000*l*.

“ The numerous buildings which have been carried on for some years past, have greatly incrated the demand, and raised the price of free stone: but a just estimate of its amount cannot be made. It must be very considerable, as the price of every block fit for astler is 10*d*., and every cart load of rubble stone is 1*s*. near Glasgow. For the former period, about 2000 people were employed about the coal mines, and the quantity of coals raised annually was 765,000 tons. The number of labourers at the coal-works are now about 2,800, and the quantity of coals raised 1,25,000 tons. The iron works, at the former period, employed about 500 hands, and the annual produce of pig iron was about 3,600 tons, by which 36,000 tons of coals were consumed. The blast furnaces and foundries of the county now employ about 1,600 people, the produce of pig iron annually is from 9 to 10,000 tons, and the coals consumed about 130,000 tons. The produce of the lead mines varies as formerly, according to the success of the discovery, and may be computed at 34 or 36,000 bars annually; the inhabitants of Leadhills at 1,200. The coals consumed at the lead works are brought from Sanquhar, in the county of Dumfries.

“ Thus the state of the produce of mines, at the different periods, will stand as follows :

FORMER PERIOD.	
765,000 tons of coals, at 4 <i>s</i> . per ton,	£. 153,000
Lime,	12,500
Pig iron 3,600 tons, at 6 <i>l</i> . 10 <i>s</i> . per ton	23,400
Increased value by a part re-cast into utensils,	14,600
35,000 bars lead, at 1 <i>l</i> . per bar,	35,000
	<hr/>
	£. 238,500

AT PRESENT.

1,250,000 tons of coals, at 5s. per ton,	£.312,500
Lime,	14,000
9,500 tons of iron, at 7l. per ton,	66,500
Increased value by re-casting,	28,000
35,000 bars of lead, at 2l. 2s. per bar, . . . t . . .	73,500

£.494,500

In the section on Tenures, Mr. N. properly characterizes the immense and powerful corporation of lawyers in this country, not yet indeed arrived at that pestilential degree of influence, which the same body possessed under the old despotism of Naples:

“TENURES.—There is no instance, known to the writer, of lands being held, in this county, by any other tenure than that which is common to Scotland, by the custom of which the feudal system is still followed in the conveyance of landed property. According to this system, the sovereign is understood to be the sole lord of all the soil, minerals, and waters, possessed by his subjects. From him alone, therefore, the legal right of enjoying the property of land is supposed to be derived; and certain annual acknowledgments are due to him in return.* This right must be renewed upon every succession, whether of an heir or a purchaser, and a fixed fine paid. The landholder, thus invested by royal charter, is possessed of a certain emanation of the same sovereignty, proportioned to the extent of his domains,† and can give charters to others, to hold such parts of them of him, in the same manner as he holds of the sovereign, and upon such conditions as he thinks proper; and these again, can parcel out what they have thus acquired, in the same manner; and so on. But it ought here to be understood, that when lands are sold, the purchaser may either hold of the seller, or of the person of whom the seller held, according to the agreement between the parties.

“In all cases he who conveys is called the *superior*, and those who receive the conveyance the *vassals*. The annual quit-rent paid by the vassal to the superior, is called *feu*; and the fines upon successions, *casualties*. Lands held by charters immediately from the sovereign, are called *freeholds*; and those conveyed by subjects superiors, *base holdings*. Those only who hold their lands by the first kind of tenure, can be electors of a representative of the county in the House of Commons; and except only in a few instances of charters of an old date, to which this right is specially annexed,‡ the extent of valuation must be 400l., to give the qualification for this privilege. As

* Some lands are held of the heir-apparent of the crown, but the nature of the tenure is the same.

† It having been supposed that the authority which the barons had over their vassals, had, in the rebellion 1745, brought numbers to the field against government, contrary to their inclination, an Act of Parliament passed in the year 1748, which without overturning the feudal system, broke its force, and reduced this deputed sovereignty to a shadow

‡ Called *Retours* on a forty shillings land of old extent.

noblemen, who, either sitting or being represented in the Upper House, are excluded from interfering in the elections of the Commons, hold lands in this county, to the amount of 34,000*l.* of valuation, and as those of the fourth, fifth, and sixth classes, with all the base holdings which may be in the three first classes, are also out of the question, neither the number of electors, nor the land they represent, can be considerable.

“The unwieldy and artificial manner of securing and transferring landed property, according to the feudal system, as above described; the frequent renewal and repetition of deeds and writings of different names and distinctions; and all the various formalities requisite, have rendered the aid of men learned in the law indispensable. The employment of these increasing as the commerce and wealth of the county increased, has occasioned an increase of their numbers: and the increase of numbers, again, has whetted their ingenuity to enlarge the employment, in which they have been abundantly successful. They are now become a powerful corporation, whose head is in the capital, and its members extended over the kingdom. Having, by such means, accompanied with great professional habits of industry and acuteness, become necessary on all occasions, they come in with the proprietors and cultivators of land, for a goodly share of the produce, without either directing the improvements or assisting the labours of cultivation.” page 51.

“THE HOUSES OCCUPIED BY THOSE WHO ARE SUPPORTED BY THEIR OWN LABOUR.—Among these may be ranked the houses of the proprietors of the fifth class, in the enumeration contained in the last chapter, and a part of those of the fourth: for though the occupants of these derive a part of their income from their land rent, they depend still more on their own industry in the cultivation. The most part of these do not differ greatly from the better sort of farm-houses occupied by tenants. The farm-houses and offices have been much improved of late years: in general, however, they are not so comfortable, nor so well adapted to all the purposes of agricultural improvement, as they ought to be. It is not necessary, indeed, here, to have the offices so extensive as in places where the crop is stored within doors; it being the general opinion, that both corn and hay are best preserved in the open air; and for that reason, no hay, and only that part of the corn which is intended to be first thrashed out, is stored in the barn; but there is a great want of sheds and convenient straw-yards for young cattle, &c. The high price of slates, and the distant land-carriage to many parts of the county, has much discouraged the use of them, which is also a disadvantage to husbandry, as thatched roofs give great harbour to vermin, and the covering of so many of them, at the end of every short period, with straw, consumes a great deal of what would be better bestowed in littering live stock, and making manure, an article which, important as it is, cannot be otherwise procured in many places distant from towns. There are, it is true, many tiles manufactured and used in the county; but when that manufacture was first begun, the tiles were of a bad quality, and those who used them had cause to repent it, which deterred others from following the example; so that,

though great improvements has been since made in the manufacture of tiles, they are not yet very generally used for covering farm houses. As convenient accommodation is better understood, and more eagerly desired, than heretofore, and as some of the most considerable landholders are disposed to make such additions and amendments to the farm houses as shall be required, on reasonable terms, it may be expected that, as leases fall, much improvement will be made in this article.

“ It is in vain to say any thing of the ancient cottages of the county, the former nurseries of field labourers; for they may be said to be now no more; as the few scattered ones which still remain, can scarcely be called an exception. It having, for a long time, been the custom of this county for farmers to keep only unmarried servants, who are lodged and fed in the house, for the execution of agricultural labour, the cottages on the different farms have dropt gradually into ruins, and been removed; and the small tenements being mostly swallowed up in the larger farms, the cottagers and the farm servants, when they marry and settle, withdraw from their rural habitations to towns and larger villages, to which the increase of employment also invites them; and their progeny, who formerly were from their infancy habituated to the labours of the field, are mostly occupied in some branch of manufacture: so that the means by which the necessary supply of labourers in husbandry used to be obtained, is in some measure cut off.

“ This change hath been pathetically bewailed by persons of feeling hearts and warm imaginations, who, being charmed with the simplicity of rural life, have painted the sequestered cottages as the calm retreats of innocence and virtue; while the disciples of a more rigid school have justified and extolled the measure of driving the superfluous inhabitants from the country, to follow industry in towns. It is probable that neither the former had very accurately considered the subject of their lamentations, nor the latter made proper calculations how many inhabitants any district of the country ought to contain, before it became necessary to drive any of them away. The diminution of cottages in this county does not, indeed, appear to have proceeded from any premeditated plan of economy, but from fortuitous causes. But certain it is, whether the scarcity of field labourers be ascribed chiefly to the prospect of superior ease and comfort, to which a growing manufacture invites, or partly to the little attention paid to preserve those in their former habits and situation, who might have been willing to remain, it has been much felt for some years past, and still seems to be increasing. No doubt, the war, which has carried the flower of our peasantry to the army, has also contributed. Many can never return; those who do, will hardly bring all their former industry and activity along with them. But if the capital employed in agriculture were equal to what the complete cultivation of the county would require, many more hands would be wanted, while, in the mean time, the former means by which the usual recruit was obtained, is cut off by the demolition of cottages; and it still remains to be seen, whether or not Dr. GOLDSMITH'S famous distich,

“ But a bold peasantry, their country's pride,
 “ When once destroy'd, can never be supply'd,”
 be as just as it is poetical.

“ The country, however, is supplied with a new set of cottages. Several landholders, partly perhaps to prevent the depopulation of the country, and partly for their own emolument, have let out, either in feu or long leases, spots of ground, for houses and little gardens, generally upon the sides of the public roads. Upon these, many little handsome cabins have been erected, which, accompanied with neatly dressed gardens, supplied with pot-herbs, and frequently ornamented with a few flowers, have a very pleasant effect. These are mostly clustered into villages, some of which are become pretty populous. But though many of them are occupied by the inhabitants of the old cottages, or by farm servants when they marry, most of the children betake themselves to some kind of manufacture; and, in a softer life, lose both the relish for, and the power of performing, the more rugged labours of the field.

“ Farm-houses are built at first by the landlord, and the tenant is bound to keep them in repair during the time of his lease, and to leave them in good condition at the expiration of it. Every successor is bound in the same manner. Of late, some landlords contract to make the farm-houses of a certain money value at the commencement of the lease, and the tenant to leave them of the same value at the end of it, or to pay the deficiency, as the same shall be estimated by men of judgment: on the other hand, if the tenant, for his own conveniency, shall have made the houses of greater value than they were at the first, the landlord pays to him the increased value. The proprietors of cottages bear the expense of all the necessary repairs (glass excepted,) unless there be a particular agreement to the contrary.”

Mr. N. has quoted Goldsmith's often-quoted and celebrated distich, with ‘ a whether or not’ in the case. By way of elucidation he might safely have quoted another wit, indeed of a different kind, we mean Butler, who says acutely, speaking of verse,

“ But one for sense and one for rhyme,
 Is sure sufficient for one time” Hud.

Goldsmith, with his other accomplishments, would indeed have been a gross monopolizer, had he known any thing about political economy, a science of which he was surely as guiltless as a sucking babe.

“ TITHES.—There being nothing, relating to tithes, peculiar to this country, this article might be immediately dismissed. But as these Reports fall under the perusal of readers unacquainted with the customs of Scotland, it seems necessary that these customs should be explained, since this has not been done in the Mid-Lothian Report (the only one which the writer of this has seen,) in which it was most likely to be expected. It was for this reason, that, in a former chapter, an attempt was made to explain the nature of Scots tenures; and, for the same reason, it may be proper to do the same with any similar article which may occur.

“ In Scotland, as well as the other countries of Europe, the Jew-

ish law, Numb. xviii. 21.*, was adopted, in making provision for the ministers of religion: but the tenth part of the produce of a barren land, was little for supporting the numbers whom superstition, in the days of ignorance and idleness, induced to embrace holy orders. The clergy, however, in the influence which their sacred office gave them over the minds of the people, possessed, in superstitious times, abundant means of increasing their funds, of which they knew well how to avail themselves. While they directed others in the way to Heaven, they accepted the reward of their pious labours in the goods of this world; and of these they had at last obtained a large share. Dr. ROBERTSON, in his History of Scotland, says, "The Scottish clergy paid one half of every tax imposed upon land; and as there is no reason to think that, in that age, they would be loaded with an unequal share of the burthen, we may conclude, that, by the time of the Reformation, little less than one half of the property of the nation had fallen into the hands of a society, which is always acquiring, and can never lose." When the dawn of knowledge had somewhat dispelled the mist of superstition, and the bold truths every where advanced, had battered down the bulwark of sanctity, with which the clergy and their possessions were surrounded, their wealth became a tempting prize to the avidity of the laity, and they were hunted down for the sake of the spoils they possessed. The noblesse and retainers of the court, not only got hold of the greater part of their monasteries, castles, manors, and extensive landed property, but obtained grants from the crown, of the tithes which had been originally destined for the support of religious institutions, with the reservation only of so much as should be necessary for the maintenance of a spiritual pastor in every parish; and a very little was, in those days, thought sufficient for this purpose. The other land proprietors, many of whom had been equally active in pulling down popery, complained loudly of this unequal distribution of the spoil. CHARLES I., who then sat on the throne, unable to govern, in those turbulent times, was willing to temporize; and having accepted the office of arbiter between the contending parties, decreed, that all those who had obtained grants of the tithes of any district, who were generally called titulars of teinds, should be obliged to sell, to the proprietors of the land, a right to as much of the tithes (commonly called teinds in Scotland,) as was not exhausted in the maintenance of the parochial pastor, at the rate of nine years produce: and the proprietors who wished to purchase, were authorized to institute a suit before a court, which had been erected for such purposes in the preceding reign, to obtain a judicial valuation of these teinds, and operate a sale.† Buildings and orchards are not comprehended in these valu-

* And behold, I have given the children of Levi all the tenth in Israel, for an inheritance, for their service which they shall serve, even the service of the tabernacle of the congregation.

† Instead of the tithes formerly levied in kind, a fifth part of the land-rent was declared to be the teind.

ations; and the proprietor is allowed a deduction for the expense he has recently laid out for improvements, such as enclosing, draining, &c.: so that it is only from negligence of proprietors, in not negotiating the purchases of teinds in time, that any tax has fallen on the industry employed in improving the land.

“ The tythes being thus wrested from the clergy, cultivators are left at full liberty to increase the fertility of the country, as far as possible, without being under the apprehension, that those who have borne no part in the culture should come in for a share in the harvest. But the clergy, though no longer in possession of the teind, are not left to a precarious subsistence. That austerity of manners and indifference about worldly enjoyments, which distinguished the apostles of the reformation in Scotland, was soon laid aside; and the clergy began to explain, that their temporal interest had been much disregarded, in the revolution which had taken place. A court was therefore erected, as above said, the business of which is now done by the members of the supreme court, to take cognizance of their affairs: and to this court the ministers have applied for augmentations of their stipends, which has seldom been denied, when there were any teinds remaining unbestowed in the parish. Each minister has, besides, at least four acres of arable land, called the *Glebe*, and so much for pasture, with a house, called the *Manse*, offices and garden.”

By this we see there really is a public provision for the poor in Scotland.

In the charge and value of the turnip crop page 80 we find a considerable difference from the Norfolk account given by Mr. Curtis, and we remark this author allows that on good soils, turnips are by no means sufficiently valuable, and that the substitution of potatoes is the practice of the district, he is describing.

“ *Expense of preparing an Acre of Land for Turnips, in the upper parts of the County, 1804.*

2 Ploughings and 2 ridgings, equal to one ploughing,			
with harrowing, at 8s. each,	-	-	1 4 0
25 Cart-loads of dung, at 3s. 6d., 4l. 7s. 6d.; carriage, spreading, &c. 8s. 6d.	-	-	4 16 0
Seed, sowing, rolling, &c.	-	-	0 3 6
First and second hand hoeing, 4s. 8d.; 2 horse-hoeings 5s.	-	-	0 9 8
			<hr/>
			£.6 13 2

If the land be full of the roots of weeds, it must have an additional ploughing, which with breaking, harrowing, gathering weeds, &c. will cost,

-	-	-	1 0 0
			<hr/>
			£.7 13 2

“ In the middle and under wards of the county, the same operations will cost from a fourth to a fifth more. The preparation of an acre for barley (not succeeding turnips) is about the same.”

“ *Expense of preparing an Acre for Wheat in the dense soils of the Middle and Under Wards, by Summer Fallowing:*

			L s d
Five times ploughing, with harrowings	-	-	2 10 0

Forty cubic yards of dung, with carriage and spreading	12	0	0
Seed and harrowing	-	1	4
Six chalders of lime is also frequently given, which with carriage, slacking, and spreading, is about	-	3	12

£. 19 6 0

“ To this a year’s rent of the ground while fallow, must be added. “ But land is now less frequently summer-fallowed for wheat. It has been found to succeed pretty well after potatoes or beans, and sometimes on a clover stubble. The potatoes are planted in rows at two feet three or four inches distant, dunged, and kept clean by hand and horse hoeing. The land is also dunged for beans, and of late the beans are frequently sown in rows from twenty inches to two feet asunder, cleaned first with the hand-hoe, and afterwards the earth is taken away from the sides of the rows by a little plough with one horse, and in a little time after returned again. The clover stubble is dunged. A moderate crop of potatoes or beans defrays the expense of manure, culture, &c. In all these cases, one ploughing serves for the reception of the wheat seed.”

Thus we see the old fashioned practice of summer fallowing which the northern farmers borrowed from hence, is giving way, and will doubtless be succeeded in no great length of time, by the addition of another southern practice, we trust a far greater improvement than was the first.

Mr. N. however only ventures to say it succeeds ‘ pretty well’.— We have no longer any thing to say about it here. The period of talking or writing on the matter is past, that of seeing and believing has arrived.

“ *Draining*—There is nothing of great consequence to be observed with respect to draining. In all the clay country, the great business is to carry off the surface water, which can only be done in open drains. The numerous ditches made for enclosing, already mentioned, though frequently not answering the intended purpose, are very useful conductors of water. The draining of clay ground is principally performed by the manner of laying out the ridges, which will be taken notice of under the following branch. Where larger receivers than the ordinary furrows are necessary, it is thought the most eligible way to make the sides of them very much shelving, as recommended by the late Lord KAIMES; but contrary to what he advises of doing them with the plough, it has been found that they are always cheapest and best executed with the spade. When land is drained, which is wet from other causes, such means as have been used in other parts of Britain, and will probably be described in other reports, have been used here. It may only be observed, with respect to hollow or covered drains, that those which have as much declivity as circumstances will admit, filled with plenty of stones, and the uppermost made very small, continue longest serviceable; so that those which are executed at the greatest expense at first, frequently turn out cheapest in the end. The smallest experience must convince every one of the necessity of freeing land from stagnant water, so that every husbandman finds himself obliged to pay some attention to draining.

But it is a subject of regret, that this first and very important branch of rural industry, is seldom so much studied or so attentively executed as it deserves. Water, which is an agent indispensably necessary in the economy of vegetation, is also, when retained in excess, the bane of all land vegetables. To support them it ought to be in the state of a light vapoury fluid diffused through the soil. It has of late been discovered to be composed of two principles, both of which indeed are constituent parts of vegetables. But it has been proved, that the organs of vegetables can only digest a small quantity of water. Whenever it exceeds what may serve for this purpose, and for supplying the perspiration habitual to the different plants, it is injurious. Its effects on the soil, in winter, when vegetation is suspended, are likewise highly prejudicial, as it counteracts the purpose of cultivation, by deranging the texture which has thereby been given, and excludes the beneficial influence of the atmosphere. Hence it is, that all soils which have been soaked in standing water, in winter, suffer most in the summer's draught. In dense soils, covering an impervious bottom, this injury is best obviated by giving the ridges a regular convex form, that the water which falls in rain may flow quickly away without soaking into the soil, and keeping the furrows or drains between the ridges clear to receive it. In all porous or soft yielding subsoils, through which water oozes, and approaches the surface, recourse must be had to hollow drains."

Gypsum the author says, has been tried in Clydesdale, with little or no success, a fact also within our own knowledge many years since. Rent of land for *flax* crop 4l. to 7l. per acre!

The Clydesdale system of haymaking, like that of Lincolnshire, differ essentially from the principles laid down by Professor Coventry, (see our last No.) and the Professor would do well to give the matter a second consideration :

"ARTIFICIAL GRASS, DAIRY AND FEEDING—The first crop of sown grass is generally mown for hay. The hay harvest commences about the beginning of July. Hay-making is conducted different ways. Some new hay-makers mow only when the weather is fair and the grass dry. Rakers immediately follow the mowers, and put up the hay into very small cocks; it is afterwards turned daily, the size of the cocks being increased as it dries, till it be ready for treading up in field ricks. However this practice may succeed in the southern counties of England, it does not seem to be well adapted to the state of this country. Unless the weather be uncommonly favourable, the hay always suffers somewhat in colour; and under repeated rains is greatly injured. Many of the most expert husbandmen now follow a very different mode. The hay is allowed to lie in the swathe for three or four days, and then, if the crop is not heavier than from a ton and a half to two tons per acre, it is raked together, in a dry time, and immediately tread up into round or oblong ricks in the field, where it stands till it is thought to be in condition to be put safely into large stacks. Very heavy crops must be turned in the swathe, and both sides exposed to the drought; and when great rains have occurred, all the hay must be turned. What lies immediately

under the shades of trees or hedges, is removed towards the middle of the field, and allowed to lie open to the drought for a few hours. In this cheap and simple manner, hay is better preserved than by more operose methods.

“FOREST TREES.—Important instructions, with respect to the kinds of trees adapted to the soil, bottom, and exposure, intended to be planted, may be obtained, by observing the different degrees of success attending those trees in the numerous plantations of this varied county. It may not be improper, therefore, to insert what occurs in different situations, respecting the different species usually planted.

“The Scots pine, or fir, as it is usually called, is not adapted to the greatest altitudes. It begins to shoot in April, and completes its year's growth by the middle of June; so that the winter often continues to reign in the heights, where the sun is not reflected till the summer of the pine be over. Unable to struggle with a repetition of such seasons, it languishes and dies. Of all the trees of this kind, planted at Leadhills something more than forty years ago, and very carefully treated, only two or three remain, in a very sickly state. On a moorish hill in the same neighbourhood there is a plantation standing a little higher, and the soil incomparably worse. The trees are now about three or four feet high, and have already ceased to make farther progress. Besides the great elevation, there is perhaps something in the bottom injurious to this plantation. The Scots pine planted in much lower situations upon a dry shivery whin rock, the parts of which are separated by ochery fissures, ceases to vegetate in a few years, though the thin soil on the surface be good. There is also a kind of laminated clay, much disposed to dissolve with water, not favourable for this, nor any of the pine tribe. It succeeds very well, however, in most parts of the clay ground in the country, if care be taken to prevent stagnant water. It does exceedingly well on land covering the free-stone rock; but the best timber is produced on hard dry gravelly soils.

“The Siberian pine, the cedar of Lebanon, and some others of a similar nature, have been introduced with very little success. The short intervals of mild weather which happen in the beginning of the spring, excite them to vegetate too early, and the next cold blast destroys the young buds. The New England pine thrives, in a tolerable soil, from twelve to twenty years, in proportion to the exposure, after which it generally begins to decay. The longest standing, and the largest, are on the low grounds near the house of Dalziel.

“The spruce is also unfit to weather the storm, on the greatest heights. It succeeds on the hard dry rock, where the Scots pine dies, but frequently decays at the end of eighteen or twenty years, on stiff wet clay. Its most favourite soil is that which is dry and gravelly.

“The silver fir thrives in clay soils, where the spruce fails; nor is it averse either to the hard rock or gravelly soil; but it makes no progress on any soil that is very poor. Unfortunately it frequently suffers severely from the frosty mildews of the spring, particularly in its youth.

“The *larix* is now found to be the most hardy alpine plant. In most places it makes greater progress than almost any other tree; and there is scarcely any soil, that is not drowned with water, on which it will not succeed. It suffers most in too luxurious situations, where its soft shoots, unable to keep erect, bend away from the slightest gale.

“The severe frosts in May 1802 and 1803 succeeding some mild weather in the month of April, which had brought on the vegetation of the *larix*, killed many of the young plants of this kind, particularly those planted in low sheltered situations, and deterred people from continuing to plant this tree; but such as had escaped having continued to succeed, it is again become a favourite plant. It sometimes is seized with disease, and dies when placed on miry clay.

“The birch is next to the *larix* in the progress of its growth, and equal to it, in ability to stand the blast in alpine situations. The birch is superior in the plain. But in whatever situation it is placed, it delights most in a light soil and dry bottom. Notwithstanding, it thrives in moist soils, with very moderate draining.

“The ash, when it enjoys a sufficient depth of good soil, is capable of braving the storm, and pushing up its head, in the most exposed situations; but in a thin soil covering a stiff argillaceous bottom, it can make no progress. It thrives well, however, in marshy soils where the banks are steep, so that the water flows away without stagnating. This is perhaps the most important wood in the country, being useful in all its ages and for most purposes.

“The mountain ash is a hard native which grows freely in almost all soils and exposures; but its favourite situation seems to be in hanging banks among woods and coppices. It and the gean-tree, or wild cherry, propagate themselves much when left at liberty, but putting up suckers from their roots.

“The beech comes near to the ash in capacity of braving the storm, and has much the advantage of it in thriving in poor or stiffer soils; but there are some barren argillaceous bottoms too much even for the beech, and it is most successful in friable soils. Its young shoots are soon affected by frost, but it quickly recovers.

“The ficamore and elm require a light soil and a dry open understratum; and when this is the case they thrive in a situation pretty much exposed.

“The oak is less patient of the blast than most of the trees of the forest. Being late in putting forth its leaves, it continues to grow till the season is far advanced; and the immature wood of its late shoots, unable to resist the piercing effects of the cold wind in exposed situations, withers before the next spring; so that, like Penelope's web, the progress of one season is undone in the following. The most favourable situation for the oak, therefore, are hollows or hanging slopes, where the sharp winds are broken by the neighbouring heights. In such situations, if stagnant water be avoided, it will thrive in the stiffest soils, and with its strong roots penetrate the densest bottoms. Some plants of this kind form the bud on the top of the branch, preparatory to the following year's growth, early

in autumn, and are less subject to be injured by the winter's cold. It is doubtful whether this be a seminal distinction or an accidental variety; but such forward plants have always the bark of their young shoots of a dull purple colour. In planting oaks, it would be proper to choose these till the matter be better known. The oak tree in coppices, and also the mountain ash, is valuable, on account of the bark; much demanded for tanning leather, and now is sold at 14*l.* per ton. The bark of the fallow and birch are used for the same purpose, and sold at half that price. The value of oak timber is well known. Though its growth is slow in infancy, when it is placed in a favourable situation, it will make a progress in the course of fifty years, little inferior to many other kinds, and arrive at length to a great size. Among the oaks of Hamilton-park (the property of the Duke of that name), so famous down to the end of the seventeenth century, there were trees which measured twenty-seven feet round the trunk, with a wide expanse of branches.

“The horse chestnut tree thrives well on the lower grounds, and deep soil only. The sweet chestnut, which quickly becomes a timber tree in districts more northern, does not succeed here. Its seasons of growth are too early, or too late, for the climate. In its first, it bears some resemblance to the Siberian pine, &c.; in its last, to the oak; its early growths being almost as early as the former, and its latter being nearly as late as those of the latter, and still more soft and susceptible of the cold. Hence its shoots are alternately put forth and destroyed, and it generally becomes a low stunted shrub. But this does not seem to have always been the case. There was in the lower part of the parish of Cambusnethan, on the grounds of Mr. Lockart, of Castlehill, a tree of this kind, magnificently branched, and of a very large size, the stump of which still remains living. This seems to be a presumption of the conjecture advanced in the former part of this Report, that the natural accretion of slow mosses tended to increase the inclemency of the neighbouring climate; since the annual addition which these mosses visibly acquire, in a district where they abound so much, may, in the course of two or three centuries, come to such an amount as to produce a sensible change in the state of the air; while in districts where the extent of moss is inconsiderable, such effects do not take place. The fate of the walnut, which may be considered as much a timber tree as a fruit one, is nearly the same with that of the sweet chestnut.

“The poplar delights most in water-formed soils, but is averse to marsh, and, when happily situated, makes quicker progress than any other tree. This county has been long in possession of two kinds of the white poplar, equally successful. Distinguishing them by their habits, they may be called the towering and the branching. The Lombard poplar, which, it has been said, becomes a large tree below the Trent, makes here but poor advances to timber. The balsam poplar makes very great progress.

“In general, all the soils which lie immediately over the freestone rock, are much disposed to produce wood, and almost all kinds of trees thrive in them. Land lying on a quick declivity, where the water issuing from the veins of the earth flows freely away, is very favourable to the growth of wood. For this reason, trees grow better on the dip than on the crop of the mineral strata. Trees,

planted by the winds, or by the birds, seem to thrive better than those cultivated by man. Whenever they meet on the same ground, the advantage which the child of Nature has over the child of Art, is conspicuous. There is a kind of coarse moorish soil, generally lying upon a thin bed of watery gravel, with an impermeable bottom under it, on which no trees will thrive till its faults are corrected. While the water below starves the roots, the close accumulation of heath and mosses on the surface, deprives them of the benign influence of the sun and air, and they pine and die in a few years. To raise a plantation, in such circumstances, it is necessary not only to give the ground a slight draining, but to destroy the obscene growth upon its surface.

“ In concluding this part of the subject, it is proper to observe, that though woods succeed, every other circumstance being similar better or worse in proportion to the elevation in the atmosphere in which they are placed, yet they succeed worse on the summits in low elevations, than they do in much higher situations, where there are still greater heights around. The reason of this is too obvious to require explanation.

“ HORSES AND OXEN COMPARED.—There are a great number of horses, of the draught kind, bred in this county. The number employed in agriculture, with the young ones rearing on the different farms, amount altogether to about 8000. The number of those kept for pleasure, for travelling, for the carriage of goods, &c. is not ascertained, but is certainly very considerable.

“ The draught horses of Clydesdale have long been in high estimation, and are so well known, that a description of them would be unnecessary. Dealers from different parts of England come to the Glasgow and Rutherglen markets to purchase them, and prefer them to the Derbyshire blacks. Those of the upper ward, where the greatest number are bred, are esteemed the best. They have been sold of late, in the Lanark and Carnwath markets, at three years old, from 20*l.* to 30*l.* and upwards. And of late colts in the second year of their age have sold at those prices. The older proportionally higher. They have been much improved of late, and are still improving, especially in size and weight.

“ Formerly oxen were used in tillage, in different parts of this county; but when the progress of civilization demanded better roads, and better roads were, of course, obtained, husbandmen began to make more frequent use of carriages, and to greater distances. From the first origin of carriages in the county, there seems to have been a predilection for the single-horse cart, the propriety of which has been justified by more experience. In consequence of this, the horse, which was not only the most ductile and expeditious animal, but whose hoofs were best adapted to receive an armature fit to defend them against the injuries of rough roads, obtained a general preference. The farms being small, one set of animals for home, and another for distant work, could not be kept; and thus the ox, being the least generally useful, has been gradually dropped. The use of oxen in the plough is not yet entirely abandoned. Along the eastern border of the county, they are still employed in that draught. But as a pair of oxen are joined in the same plough with four horses, to

do what the horses might very well perform without them, the oxen seem to be little better than an useless incumbrance. What a pity, that those useful animals should be either abandoned, or so unprofitably employed!

“Some gentlemen have again begun to use oxen for all the purposes of draught. The Right Honourable Lord DOUGLAS always works a few; and, at his Lordship’s desire, his manager communicated the following comparative statement of the importance of the horse and the ox in labour, at the time the former report was printed; and though the money value of both animals is different from what it then was, it shall here be stated in the same terms.

“An ox at the price of 7l. 10s. is equally strong in draught with a horse at 20l., and equally fit for the plough, cart, or harrow.

“The ox requires one-fourth less fodder than the horse, and only a little unthrashed oats, from an eighth to a sixth of what is requisite to support the horse; and if fourteen pounds of raw potatoes be given to the ox in a day, he will need no oats, and not consume more than half the fodder ate by a horse.

“The ox may be wrought from four to ten years of age, and still increase in size, and be capable of carrying more flesh, when he is turned to fatten; whereas the horse, in that time will lose one-fifth of his price.

“The ox may be turned to pasture in summer, as soon as he is taken from the yoke; and will gather his own food, without needing any corn or attendance.

“The ox is as much fatigued with seven hours work in the day, as the horse is with eight; and the execution of the ox is scarcely more than four-fifths of that of the horse, in the same time.

“After the ox has filled his belly, he must have time to ruminate, and therefore cannot be baited, and put to work a second time the same day, like the horse, without being greatly injured.”

We shall conclude our long extracts from this valuable article, with a very just view of a great public grievance, the farrago of useless and mischievous statutes, for the regulation of that which never can be well regulated, but by commercial discretion, the commerce of corn.

“Land people have beheld, with some degree of envy, numbers rising into consequence by the effects of industry, and have wished to lay that industry under contribution, by restraining laws, intended to raise the price of provision. Manufacturing people, on the other hand, have been making perpetual struggles to counteract this; and, by loud clamours of the danger of the poor being starved, have obtained certain relaxations of those laws. Hence has arisen that contradictory jumble of statutes and regulations, known by the name of the corn laws, and the officious interference of the executive government, in all pretended emergencies. The part which land-holders have taken in forming these laws, was, probably, with a view to increase their own revenue, rather than to improve the condition of husbandmen, or promote agriculture. It would seem, however, to have been without effect. Rents, indeed, have greatly risen; but the restraining laws have not been the cause.

HISTORY

OF

Agriculture.

*Anniversary Meeting of the Leicestershire and Rutland
Agricultural Society.*

THE Anniversary Meeting of the Leicestershire and Rutland Agricultural Society, was held on Friday the 3d. inst. at the Three Crowns, Leicester, attended by Colonel Noel, M. P. for Rutland; Sir E. C. Hartopp, Mr. Keck, Members for Leicestershire, Mr. Winstanley, Mr. Hudson, Mr. Edwyn Burnaby, Colonel Crump, Rev. Mr. Swann, and a very considerable number of gentlemen of both counties.—Prizes were adjudged to,

Mr. Watkinson, of Woodhouse, for a pen of shear hogs.

Mr. Oldacres, of Kirkby, for a pen of two-shear sheep.

Mr. Nixon, of Belgrave, for a pen of ewes.

To John Bradford, shepherd to Mr. Watkinson, for his care, &c.

Upwards of forty new members were admitted at this meeting; Lord Henniker, M. P. for Rutland; the Rev. Mr. S. Priest, and the Rev. Mr. Munning, of Norfolk, were elected honorary members; Colonel Noel was nominated Chairman of the Committees of Correspondence and Premiums for the ensuing year, such Committees comprising the noblemen and gentlemen who are Vice-presidents of the Society; and the gentlemen who formed the Committees of last year, with an addition of six gentlemen of the county of Rutland. At dinner Colonel Noel presided, and by his vivacity and good humour, contributed to produce the greatest conviviality and social pleasantries, which continued to prevail until the close of the meeting at a late hour. The subject of the abuses attendant on the present mode of conducting the sale of wool, was taken into consideration. The Chairman, Sir E. C. Hartopp, Mr. Keck, Mr. Burnaby, and Colonel Crump, severally addressed the meeting; the necessity as well as policy of holding an annual meeting, for the sale of wool appeared to be admitted on all hands, by which a convenient communication between the wool stapler and grower would be obtained; a letter was produced and read, received from a gentleman of consideration in Oxfordshire, stating that the attempt to establish a similar meeting in that neighbourhood, had met with opposition, but being persevered in, it was ultimately successful and had been productive of much benefit. The president appointed for the next July wool meeting, is Colonel Noel; the stewards, Lord Henniker, Sir E. C. Hartopp, and Mr. Keck; the members for both counties, deserve the greatest praise from every class of graziers, for their endeavours to conciliate all parties in the proposed scheme of a wool meeting, from which there is every reason to expect the result of the same beneficial effects, as have been experienced from similar establishments in other districts.

At the above meeting, a store hog was exhibited, fed by Mr. Pallet, of Keythorpe, from the breed of Colonel Crump, of Alexton Hall, which weighed sixty-four stone, fourteen pounds to the stone, although not nearly fat.

Improvement of the Turnpike-roads and Highways.

OUR readers will hear with pleasure, that the Committee of the House of Commons, who were so meritoriously employed during the late sessions of Parliament, in an extended investigation on the above interesting subject, so far proceeded as to complete a second Report, (which was ordered to be printed on the 18th of July last) and which was accordingly distributed to the Members, a short time before the late dissolution of Parliament.

This Report, of which we understand, that copies have been liberally distributed among practical and scientific men, likely to aid Parliament by their opinions and advice, extends to fifty-five folio pages, and is illustrated by four large copper-plates: the experiments and reasonings of Mr. Alexander Cummings, on the great injury which roads may sustain, in an extreme case of conical and wide rims of wheels for heavy carriages, is fully detailed in this Report, and is opposed to the experiments and conclusion of Mr. Robert Russell, the great waggon-master, of Exeter, who contends that as his wheels and those of other waggoners, are and long have been constructed, no easement of draught but the contrary, would ensue from the adoption of cylindrical rims, as recommended by Mr. Cummings. We can scarcely doubt that the subject will be revived in the first session of the new Parliament, and that conclusive experiments, in the large way, will be instituted, for removing this and other doubts, and ascertaining the proportionate injury which the gravel or stones on a road sustain, from the simple crushing effects of heavy carriages, of whatever form their wheels are, and from the dragging or grinding operation of all wheels whose rims are not cylindrical, and turn also on straight axles: the force of draught also, will doubtless be ascertained with greater precision, by means of an improved apparatus for the purpose, than has yet been mentioned in these Reports; wherein are contained, communications from, or the opinions of Messrs. Bancroft, William Cooke, Alexander Cummins, W Deacon, Nicholas Demezy, John Ellman, John Farey, William Jessop, Henry Matthews, J. Matthews, M. P. Rev. William Milton, Robert Ruffel, Sir John Sinclair, (the worthy chairman of the Committee), &c. &c.

British Manufactures.

The following estimate of the annual value of some of the principal Manufactures of this country, and of the number of persons employed in them, is chiefly founded on official returns:

	<i>Annual Value.</i>	<i>Persons Employed.</i>
Woollen	£.16,400,000	440,310
Cotton	10,000,000	317,271
Leather	10,000,000	241,818
Iron, tin, and lead	10,000,000	200,000
Steel, plating, &c.	4,000,000	70,000
Copper and brass	3,600,000	60,000
Linen and Flax	3,000,000	95,000
Silk	2,700,000	65,000
Hemp	1,600,000	35,000
Potteries	2,700,000	45,000
Glass	1,500,000	36,000
Paper	200,000	30,000
	<hr/> £.67,200,000	<hr/> 1,665,429

The annual value of other Manufactures of less importance is estimated at 4 or 5,000,000l. and the number of persons employed in them at about 100,000.

German Agricultural Literature.

Although the following list of Periodical Agricultural Publications is not complete, yet it will serve to give our readers some idea of the attention paid to this subject on the continent.

1. *Annalen des Akerbaus, etc.* Annals of Agriculture, 8 vo. Published at Berlin, by A. Thaer.
2. *Archiv der Agricultur Chemie; Archives of Chemical Agriculture,* or a collection of Observations, Experiments, and Discoveries in Natural History and Chemistry, applicable to Rural Economy; intended for the use of Cultivators, Farmers, &c. 8vo.
3. *Allgemeines landwirthschaftliches Magazin, &c.* The General Magazine of Rural Economy, 8vo. published at Halle.
4. *Die Landwirthschaft in ihrem ganzen Umfang.* Rural Economy considered in all its Branches, 8vo. published by M. V. Siskler, at Erfurt. The fifth volume just published, relates more particularly to the breeding, rearing, feeding, and fattening, different classes of domestic animals, and the best remedies for the various disorders to which they are subject.
5. *Oekonomische Abhandlungen; Memoirs of Rural and Domestic Economy,* 8vo. published at Dortmund, by M. Moller.
6. *Praktische Anleitung zur Jührung der Wirthschaftsgeschäfte: a Practical Introduction to the knowledge of Rural Economy, for the use of farmers, &c.* by M. G. Gericke, 8vo. with plates. The second volume, lately published, contains a complete Treatise on Agriculture.
7. *Gartenmagazin; The Gardener's General Magazine,* 8vo. published at Weimar. This work contains descriptions of various horticultural productions, and remarks on their plantation, transplantation, cultivation, grafting, the influence of the seasons on their growth, and other particulars connected with the same subject.

Fairs, Markets, and Miscellanies.

OCTOBER 7,

FAIRS.—Howden had all the great London dealers down at the horse show, and good horses were sold at high prices. Market-Weighton had a great display of sheep, and well-bred wedders in good condition sold as high as three pounds each. The great quantity of food upon the ground is to be taken into the account.

At the sale of Mr. Thomas Ellman's (of Shoreham) South-down ewes and lambs, on Tuesday, the 30th of September, four-year old ewes fetched from 50s. to 71s. each; three-year olds, 61s. to 107s.; two-year olds, 63s. to 111s.; and one-year olds, 58s. to 131s. Lambs, from 45s. to 64s. each. Nearly two hundred persons, among them some of the first agriculturists in the kingdom, attended the sale of the above incomparable stock.

One hundred six-toothed wethers, the property of the Earl of Chichester, were sold in one lot, at Selmsdon fair, Sussex, to a Kentish dealer, and fetched two hundred and twenty pounds.

Last harvest, a farmer, in the neighbourhood of Ripon, engaged as many reapers as filled his waggon.—As he was driving them off, another farmer told them he would give each reaper six-pence a day more if they would enter into his employ. They all, except one woman, engaged immediately with the latter; she went home with her master, and at night received a guinea for her day's wages; those who had gone to work for the other farmer, of course insisted on a fulfilment of their agreement, and after being summoned before a Magistrate, he was compelled to pay each of them a guinea and sixpence a day.

OCTOBER 21,

At Leicester Fair, October 14, there was the largest show of sheep ever remembered, which were generally sold; of neat cattle and horses there was also a considerable quantity; the former were heavy sale, and of the latter there were very few good ones. Cheese was abundant, and sold from 54s. to 60s.; some few prime dairies fetched rather more.

LONDON PRICES OF GRAIN for Oct. 1806.

MARK LANE, Monday, Sept. 29, 1806.

We had a tolerable good supply of Wheat from Essex and Kent this morning, and which experienced a decline of from 3s. to 5s. per quarter below last Monday's currency.—Barley has likewise fallen 6s. per quarter, and which has also brought down the price of Malt.—White Pease, of which we have plenty, have likewise given way 4s. and 5s. per quarter.—Rye is cheaper; in Beans and Oats there is not much variation; the latter, of good quality, are not lower, but the ordinary are unquestionably cheaper.—Flour remains at 75s. per sack.

Price of Grain, on board Ship, as under.

Wheat	50s 60s 65s	White Peas	50s to 56s od	Ticks, new	32s to 38s
Fine	70s to 78s	Boilers	58s to 64s.	Ditto Old	—s to 44s
Superfine	80s to 85s	Suffolks	65s	Oats	24s 28s to 33s
Rye	40s to 45s	Grey Peas	40s to 46s	Polands	34s to 36s od
Barley	36s to 42s od	Beans, old	44s to 50s 6d	Oats for feed	—s
Malt	72s to 75s	Beans, Old	—s		

Monday, Oct. 6.

Although we had a large supply of Wheat to day, but a small proportion of it was of prime quality, the which only obtained prices equal to those of last Monday; the second and coarser sorts were cheaper by 3s. and 4s. per quarter. Good Red Wheat fetched about 80s per quarter.—Flour scarcely keeps its price, and must be taken at the medium between 70s. and 75s. per sack.—Barley has again revived its price—not much at market.—Beans have not altered in value, except that Old Ticks are dull and something cheaper.—White Pease and Oats are lower; of the latter, we have large supplies but very few good samples.

Wheat	50s 60s 68s	White Peas	40s to 54s	Ditto, Old	50s
Fine	70s to 78s	Boilers	56s to 63s	Ticks new	30s to 38s
Superfine	80s 85s	Suffolks	—s to 64s	Ditto, Old	43s
Rye	38s to 45s	Grey Peas	40s to 46s	Oats	22s 26s to 32s
Barley	40s to 46s	Beans new	38s to 44s	Polands	33s 34s 6d
Malt	70s to 79s				

Monday, Oct. 13.

We had a middling supply of Wheat to-day, fine samples of which were 2s. per quarter dearer than last Monday.—Flour remains on the terms then and now stated.—Barley is a trifle dearer.—In Malt and Beans there is little alteration.—New Ticks have become heavy, and rather cheaper.—White Pease are scarce, and the sales so inconsiderable, as hardly to furnish a price. For the few samples that were sold, more, we believe, was obtained than named in the currency annexed.—There were but few fresh arrivals of Oats, but many left over from last week. This article is down 1s. per quarter.

Wheat	56s 60s to 70s	White Pease	40s to 45s	Ditto, old,	50s
Fine	—s 76s to 82s	Boilers	65s to 70s	Ticks, new	32s to 38s
Superfine,	84s to 88s	Suffolks,	—s to —s	Ditto, old,	42s
Rye	34s to 45s	Grey Peas new	40s to 47s	Oats	20s 25s to 30s
Barley	40s to 46s	Beans, new	38s to 44s	Polands	31s to 33s od
Malt	72s to 73s				

Monday, Oct. 20.

We had a moderate supply of Wheat for this morning's market, the sales of which were brisk, and upon nearly the same terms as last Monday.—Fine Barley being in request, and the supply rather short, that article is become dearer.—Malt is likewise something higher.—White Pease continue exceeding scarce, and have arrived at a price much above our last quotation.—Beans of both sorts are a trifle dearer.—Oats of good quality bear no proportion with the indifferent, the former command rather more money, but the latter fell heavily, and are cheaper.

Wheat	56s 60s to 70s	White Pease	60s to 70s	Ditto, old	51s
Fine	75s to 84s	Boilers	76s to 84s	Ticks, new	34s to 40s
Superfine	86s. to 89s	Suffolks	85s od	Ditto old	44s
Rye	36s to 44s	Grey Peas	42s to 48s od	Oats	22s 27s to 32s
Barley	38s to 46s	Beans new	40s to 46s od	Polands	—s to 34s 6d
Malt	72s to 78s od				

**AVERAGE PRICES OF CORN, by the quarter of eight
Winchester bushels; and of OATMEAL, per Boll, of
140 pounds Avoirdupoise.**

From the Returns received in the Week ended, Oct. 18, 1806.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d. s.	d.
Middlesex	84	11 44	1 41	7 32	4 47	0 50	8							
Surrey	86	4 48	0 45	0 35	6 46	0 50	4							
Hertford	74	4 43	0 40	8 27	2 39	0 39	9							
Bedford	76	6 44	8 40	6 28	6 43	2 47	2							
Huntingdon	72	8	39	4 25	0 40	3								
Northampton	73	4 45	9 40	2 30	8 44	10 39	9							
Rutland	75	9 47	0 41	6 24	6 48	0	62	0						
Leicester	78	3 44	3 40	8 27	7 43	2 50	11 40	6						
Nottingham	78	8 51	0 46	4 30	0 47	0								
Derby	85	2	49	0 29	6 49	4 47	10 38	2						
Stafford	79	8	49	0 30	1 55	8								
Salop	80	9 56	0 50	7 29	10	46	3 66	4						
Hereford	80	8 48	0 46	4 29	8 48	8 45	3 64	11						
Worcester	84	5	49	10 35	5 49	8 44	6							
Warwick	86	7	50	11 33	9 55	4 54	8 48	9						
Wilts	71	8	45	0 32	10 56	0								
Berks	84	0	42	1 34	0 49	6 50	6							
Oxford	80	8	41	8 31	4 48	0 47	6							
Bucks	83	4	40	10 38	0 46	0 47	6							
Brecon	89	6 57	7 46	4 25	8	48	0 50	10						
Montgomery	72	9 49	8 43	2 25	4	46	4 57	2						
Radnor	84	7	38	7 25	5	35	2							

Maritime Counties.

Essex	81	4 48	0 42	10 35	3 43	6 46	0							
Kent	90	6 48	0 41	3 38	3 43	3 56	0							
Suffex	85	8	46	6 30	6 47	0								
Suffolk	71	1 42	0 40	5 32	3 38	11 43	9 50	10						
Cambridge	72	8 40	8 35	4 21	8 40	7 40	0							
Norfolk	66	10	37	10 23	1 37	6 45	2							
Lincoln	73	0 45	10 40	6 23	2 44	0 55	0							
York	70	0 43	3 39	0 27	5 45	5	34	5						
Durham	73	8 38	0	27	4									
Northumberland	71	9 48	3 37	4 27	8	42	0							
Cumberland	71	1 55	1 44	0 27	8									
Westmoreland	80	8 62	0 45	10 29	10		22	6						
Lancaſter	73	5	39	6 27	8 47	0	23	1						
Cheſter	72	9		26	4		24	2						
Flint			45	8 22	10									
Denbigh	84	1	48	7 24	0		48	4						
Angleſea														
Carnarvon	72	0	39	4 20	10		49	3						
Merioneth	74	5	45	0 23	8		45	6						
Cardigan	77	5	36	0 16	6									
Pembroke	63	3	32	4 18	8									
Carmarthen	89	4	36	0 19	1									
Glamorgan	77	2	39	10 21	4									
Glouceſter	84	9	47	9 30	8 46	2 42	2							
Somerſet	81	10	42	0 25	9 48	0								
Monmouth	89	6	48	8 29	4									
Devon	83	4	37	2 27	4									
Cornwall	81	2	34	7 22	2									
Dorſet	76	3	40	6 30	11 48	0								
Hants	80	1	42	9 35	3		50	0						

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

<i>Price of Hops.</i>		1st Week		2d Week		3d Week		4th Week		5th Week	
Bags.		s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Kent	—	80 to	98	80 to	105	80 to	105	90 to	105	90 to	105
Suffex	—	80 to	98	80 to	95	80 to	95	84 to	100	90 to	100
Essex	—	80 to	94	80 to	100	80 to	100	76 to	105	76 to	105
<i>Pockets.</i>											
Kent	—	90 to	112	90 to	111	90 to	115	95 to	120	95 to	120
Suffex	—	90 to	102	90 to	107	90 to	108	90 to	105	90 to	105
Farnham	—	140 to	160	140 to	160	140 to	168	168 to	195	168 to	195
<i>Seeds.</i>											
Broad Beans, (per quarter)										52 to	68
Long Pods								52 to	64	46 to	56
Tares	—	38 to	56	38 to	62	38 to	64	32 to	60	32 to	56
Rye Grass	—										
Carraway, (pr cwt.)	—	48 to	54	48 to	52	48 to	54	48 to	54	48 to	56
Coriander	—	11 to	13	16 to	12	10 to	12	10 to	12	11 to	13
Trefoil	—										
Red Clover	—										
White ditto	—										
White Mustard Seed, pr bu		10 to	16	10 to	17	10 to	17	10 to	17	11 to	18
Brown ditto		10 to	17	10 to	18	11 to	19	10 to	19	10 to	19
Canary Seed											
Turnip,	—										
Rape Seed, (per last)	—	28 to	31	27 to	30	25 to	30	23 to	29	25 to	28
<i>Meat at Smithfield,</i>											
To sink the offal, p. ft. 8lb.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Beef	—	4 0 to	5 0	3 8 to	4 10	4 0 to	5 0	4 0 to	5 0	3 0 to	4 6
Mutton	—	4 4 to	5 2	4 0 to	5 0	4 6 to	5 4	4 4 to	5 2	4 4 to	5 2
Veal	—	4 6 to	5 4	4 0 to	5 4	5 0 to	6 0	4 6 to	6 0	4 0 to	5 4
Pork	—	5 0 to	6 0	5 0 to	6 8	4 8 to	6 0	4 8 to	6 0	4 8 to	5 8
Lamb	—	4 8 to	5 4	4 8 to	5 4	5 0 to	5 6	4 8 to	5 6	5 4 to	5 6
Head of Cattle—Beasts about		1,900		2,000		1,800		2,300		2,700	
Sheep and Lambes		17,500		16,500		13,000		15,000		15,000	
<i>Price of Leather.</i>		d.		d.		d.		d.		d.	
Butts, 50lb. to 56lb. each		22 to	23	22 to	24	22 to	24	21 to	25	23 to	25
Ditto, 60lb. to 65lb. each		27 to	28	26 to	28	26 to	28	26 to	28	26 to	28
Merchants Backs	—	21½ to	22	21 to	22	21 to	22	21½ to	22½	21½ to	22½
Dressing Hides	—	18½ to	19	18½ to	19½	18½ to	19½	18 to	19½	18 to	19½
Fine Coach Hides	—	19½ to	21	20½ to	21½	20½ to	20	19½ to	21½	19½ to	21½
Crop Hides for cutting		21½ to	24	21 to	23½	21 to	29½	21 to	23	21 to	23
Flat Ordinary	—	18½ to	19½	18 to	19½	18 to	13½	17 to	18½	17 to	18½
Calf Skins, 30 to 40lb. p. doz.		30 to	40	30 to	40	30 to	41½	28 to	42	28 to	42
Ditto, 50lb. to 70lb. do.		36 to	42	36 to	42	36 to	42	36 to	42	36 to	42
Ditto, 70lb. to 80lb. do.		35 to	38	33 to	38	33 to	38	30 to	36	30 to	36
Sm. Seals (Greenland)		39 to	42	39 to	40	39 to	40	36 to	39	36 to	39
Large do. (per dozen)		51 to	81	51 to	91	51 to	81	51 to	71	51 to	71
Goat Skins per doz.				— to	—	— to	—	— to	—	— to	—
Tanned Horse Hides pr hid.		20s to	36s	20s to	35s	20s to	35s	18s to	35s	18s to	35s
<i>Price of Tallow.</i>		s. d.		s. d.		s. d.		s. d.		s. d.	
St. James's Market	—	3	8	3	6	3	4	3	7	3	7
Clare Market	—	3	8	3	6	3	4	3	7	3	7½
Whitechapel Market	—	3	7	3	5½	3	4½	3	6	3	6½
Per stone of 8lb. Average		3	7½	3	6	3	4	3	6½	3	7
Town Tallow	—	61	0	59	6	58	0	61	0	63	0
Russia (Candles)	—	61	0	59	0	57	0	57	0	57	0
Russia ditto (Soap)	—	58	0	57	0	57	0	57	0	56	0
Melting Stuff	—	50	0	50	0	50	0	50	0	48	0
Ditto rough	—	32	0	30	0	30	0	32	0	32	0
Garves	—	11	0	11	0	11	0	11	0	11	0
Yellow Soap	—	78	0	78	0	76	0	76	0	76	0
Mottled ditto	—	83	0	83	0	86	0	86	0	6	0
Curd ditto	—	92	0	92	0	90	0	90	0	90	0
Candles per dozen	—	11	0	11	0	10	6	10	6	11	0
Moulds	—	12	0	12	0	11	6	11	6	12	0

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

Raw Hides.	1st Week		2d Week		3d Week		4th Week		5th Week.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Best Heifers & Steers, pr ft.	3 2	to 3 6	3 2	to 3 6	3 2	to 3 4			3 2	to 3 4
Middling — —	2 10	to 3 0	2 8	to 3 0	2 8	to 3 0			2 10	to 3 0
Ordinary — —	2 4	to 2 6	2 4	to 2 6	2 4	to 2 6			2 4	to 2 6
Market Calf — —	12 6	each	12 6	each	12 6	each			12 6	each
Eng. Horse — —	15s	to 17s	15s	to 17s	14s	to 16s			14s	to 16s
Lamb Skins — —	2 6	to 3 9	2 6	to 3 9	2 6	to 4 0			2 6	to 4 0
Sheep Skins — —	0 0	to 3 0	0 0	to 3 6	3 0	to 3 9			3 0	to 4 0
Price of Hay and Straw.	l. s. d.		l. s. d.		l. s. d.		l. s. d.		l. s. d.	
St. James's—Hay —	3 18	0	4 3	0	3 15	0	4 3	3	4 2	6
Straw — —	2 6	6	2 4	3	2 8	0	2 3	6	2 3	6
Whitech.—Hay —	4 6	0	4 5	0	4 8	0	4 5	0	4 5	0
New — —	0	—	0	—	0	—	0	—	0	—
Clover — —	4 2	6	5 0	6	4 14	6	4 14	6	5 1	0
Straw — —	2 3	0	2 3	0	2 2	0	2 3	0	2 1	0
<i>Newbury.</i>										
Wheat — — —	70s	to 91s	68s	to 91s	60s	to 90s	70s	to 92s	72s	to 96s
Barley — — —	44s	to 48s	39s	to 45s	40s	to 45s	42s	to 46s	41s	to 46s
Oats — — —	28s	to 35s	29s	to 35s	30s	to 35s	29s	to 35s	26s	to 35s
Beans — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s
New ditto — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Peas — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s
<i>Salisbury.</i>										
Wheat — — —	72s	to 80s	72s	to 78s	72s	to 78s	70s	to 76s	70s	to 76s
New ditto — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Barley — — —	44s	to 50s	44s	to 48s	40s	to 48s	40s	to 48s	40s	to 46s
Beans — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Oats — — —	31s	to 35s	30s	to 36s	30s	to 35s	30s	to 35s	30s	to 35s
Peas — — —	—s	to —s	—s	to —s	—s	to —s	—s	to —s	—s	to —s

MARK LANE, Monday, Oct. 27.

We had a large supply of Wheat up to-day, the sales of which were made at about 2s. and 3s. per quarter under last Monday's prices. We were likewise well supplied with Barley; but this article, as well as Malt, fully maintained last week's currency. Beans of both sorts remain without much variation; but Boiling Pease are still upon the advance, with a very few samples at Market. We have large arrivals of Oats, and this article generally cheaper.

Wheat	54s 64s to 74s	White Pease	45s to 65s	Old	51s
Fine	78s to 84s	Boilers	75s to 86s	Ticks, new	30s to 39s
Superfine	86s to 88s	Suffolks	88s	Old	43s
Rye, new	36s to 43s	Grey Pease	36s to 50s	Oats	22s 26s 29s
Barley	38s to 46s	Beans, new	38s to 47s	Polands	31s to 33s
Malt	70s to 78s				

TO CORRESPONDENTS.

OUR regret is most sincere, as doubtless will be that of our Correspondents in general, at the indisposition of our excellent friend, Agricola Northumbriensis, which we hope will be but temporary.

The Gentleman, who was lately so obliging as to give us a hint respecting burning lime with peat, will find a good selection on that subject in the present Number.

We thank our new Kentish Correspondent, O. S. T. for his valuable communication, and hope to have the pleasure of hearing farther from him.

We request the opinion of all our Correspondents, as to the state of the last crops.