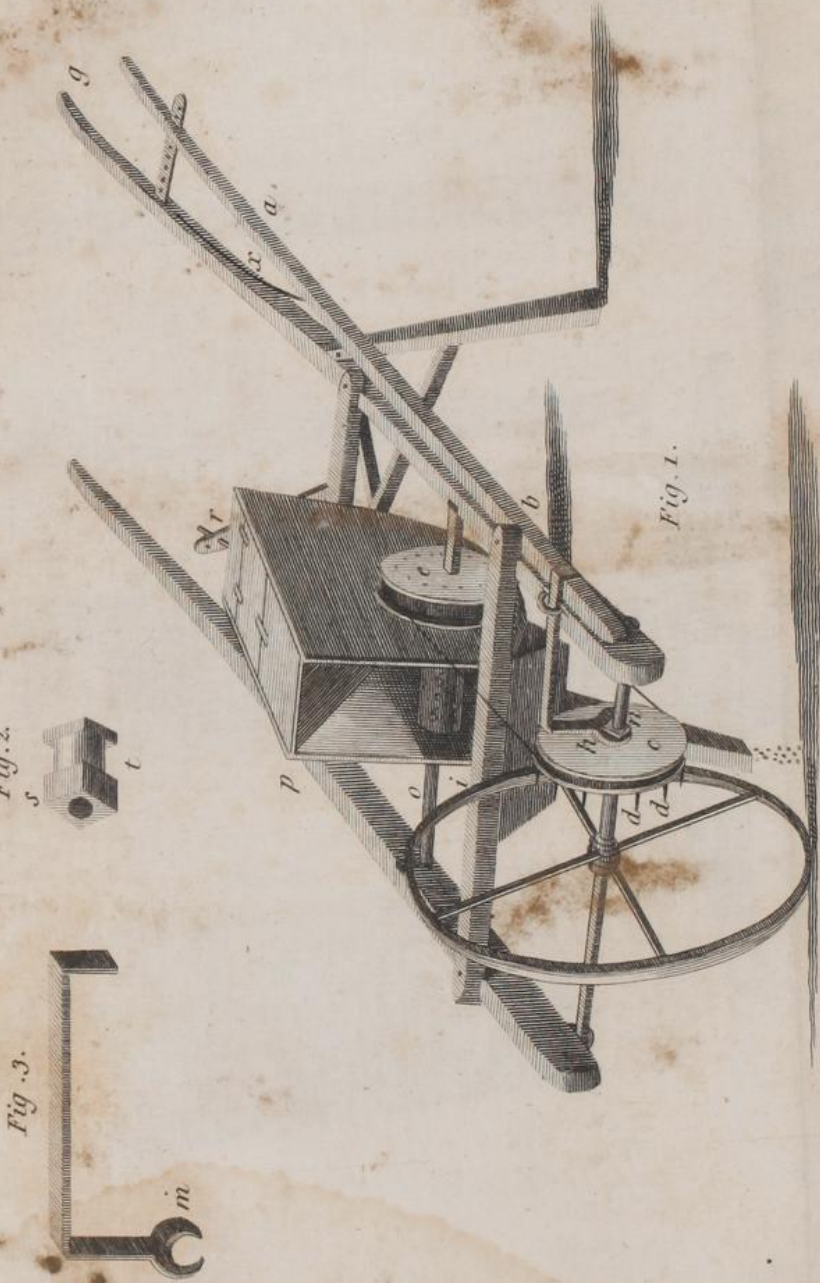


Norfolk Hand Drill.



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DESCRIPTION OF A HAND DRILL MACHINE.
WITH A PLATE.

To the Editor of the Agricultural Magazine.

SIR,

IN the 42d Number of your Magazine, I ventured to propose to your Readers the consideration of a plan, which had always appeared to me as likely to prove beneficial to the occupiers of small farms; a class of men, who have long laid under the imputation of extreme bigotry to old-received opinions, and of obstinacy in acceding to new ones, any-wise relating to the tillage of land. In too many cases, the accusation is, doubtless, well founded; but why should the censure be general? It happens, that not a few men of this description within my own actual observation are honourable exceptions to this general rule, who are as open to conviction as any set of men whatever: but the real fact is, that they are restrained from the opportunity of practising what they approve, by that most powerful of all obstacles to improvement, the enormous price demanded for most new invented implements of husbandry. However Patents may encourage invention, they certainly tend to check the introduction of any ingenious and useful piece of mechanism, by tempting the inventor to fix an extraordinary price on his wares, the law ensuring to, and protecting him in the monopoly of the sale. Impressed with this idea, I turned my thoughts to the possibility of reducing some of the more useful implements of the latest improvement to a *small scale*, and in April and May last, I applied a *single-shared horse-hoe* to five acres of wheat drilled at nine inch intervals, by way of experiment. My success was even beyond my hopes, for the expence fairly computed, fell far below the ordinary price of hand-hoeing, and the efficacy was so superior as to confirm every by-stander in the opinion of its utility. The expence about 15 or 16s. This induced me to form a machine for sowing, which should be light enough to run by hand, making one drill only at a time. My attempts have not been attended with the success I met with in my experiment with the single-shared horse-hoe, for not being aware of the difficulty of driving it on new ploughed ground, and fearful it would not make a sufficiently deep impression, I ran into the other extreme and made it much too heavy. Thus far, then, my first attempt has proceeded. I only

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a A

wait the arrival of a lighter wheel from the foundery, to make a second essay: in the mean time, I beg leave to offer you the inclosed sketch of it, as the form will remain the same, though the dimensions and weight of apparatus will be less than of the one I have had on trial. A few words by way of explanation, will perhaps be necessary. A, is a small lever of wood, four feet long, whose elbow, or fulchrum, moves on a pivot at B. It is evident, that if the pulley C be forced up to the nave of the wheel by the spring X, the spokes will catch the pegs DD, and force the pulley round with it. An inch-wide strap of leather turns the other pulley E, which stands on an iron spindle squared at the part on which it is placed; the rest of it is rounded. At every turning at the land's end, by pressing the lever with the left hand towards the shaft G, the biggest end of it communicating with the pulley C, by means of the iron H, (which I shall describe afterwards,) slips it along the round axis of the wheel sideways an inch or two, till the pegs DD are out of reach of the spokes, and therefore cease their revolutions, leaving the seed barrel at rest. The wheel is of cast iron, not weighing more than 6 lbs; diameter 20 inches; its rim outwardly convex, and concave within, about $2\frac{1}{2}$ inches wide. An iron scraper at I cleans it every revolution. The shafts of the barrow should not be more than 15 inches asunder at the axis, rather wider at the other extremities. The nave of the wheel is very small, with a bore in it, one inch square, to receive the axis, which is squared to fit it in the middle; the remaining part is rounded, that it may turn freely in the iron center N. The cups which are precisely the same as used in Cooke's drill, are nailed upon two wooden cylinders, diameter $2\frac{1}{2}$ inches and length, (being the width of the seed vessel and hopper,) not exceeding five inches. These two cylinders are bored through with an half inch auger, to admit the spindle O. Thus, when it is required to change the cups, the spindle is withdrawn, and another cylinder put in its place, and fastened with a pin or screw passing through both cylinder and spindle. The seed vessel P holds about half a peck, (sufficient to sow three or four rows in a square piece of four acres,) and is raised or lowered by a pin at R, according as it feeds too slow or too fast. A tin slide within also regulates the quantity to be sown. In the centre of the pulley C is an iron collar, see fig. 2; the part S being of the thickness of the pulley, and let into it, the rest of it projects, and the iron H, fig. 3, clasps the rounded part of it loosely. Thus, when the spokes catch the pegs DD, the neck T turns round in the cavity M; and when the lever slides away the pulley sideways out of the reach of the spokes, the iron H keeps it out of the way of them, and therefore at rest. The shafts of the machine are

very light, four feet six inches long. Diameter of C six inches; of E, nine inches. Twelve cups on each cylinder, placed as in Cooke's drill in three divisions, four in each, in a line oblique to the axis. A cord or strap round the neck and shoulders of the sower, down to each end of the shafts, will keep the machine at the same angle of elevation throughout the whole work, and give an opportunity to him to use his left hand at the lever when necessary to stop the sowing.

With different cups, this machine will sow all kinds of seeds with mathematical accuracy. It will succeed best (as every other drill machine does) on tempered land, and in dry weather, but I believe may be used on the stiffest soils with advantage. The way in which I propose using it here, is, to plough the land with a narrow-set one-horse-plough, which lays it out neatly in nine-inch furrows. Between every two furrows appears a strongly marked drill, if I may so call it, up each of which the wheel passes, adding somewhat to the depth of the already formed drill. Hence, the better the ploughman, the straiter and more regular will the intervals between the corn appear. One harrowing along the drills will suffice, to bury the corn. On wet and stiff clays I should imagine this hand-drill will have its advantages, as it may be used when Cooke's drill cannot get upon the land, and if the labour of driving it should prove too great for a man to perform singly, a boy going before with a line would considerably ease the toil.

If any of your readers have looked on (as I have done more than once) and observed the tedious progress of hoeing by hand, and the extreme difficulty which the labourers in some of our best corn counties have to surmount, in picking out the weeds from among their broad-cast peas and beans, they cannot but be convinced of the disadvantage of not sowing their seed in equi-distant rows. To obviate this, dibbling has not unfrequently been practised, but the expence is heavy: another mode is *straying* in the corn by hand, and a third, *dropping* after the plough. But the irregularity of both methods is so great, as to be of but little service to the hoers; for the grains on coming up, seem to cover the surface, having no regular intervals between them: whereas, a small drill would remove every objection of this nature, and by the single-shared hoe, this operation, now so tedious, would become easy and effectual, and render even the most untoward soils, pliant and clean. If it should be objected, that the furrows on stiff and wet soils cannot be formed so as to leave the intervals open, as I have just observed is the case on our light soils, then let this drill follow every bout (as we call it) of the plough, and let the succeeding furrow be whelmed over it; of course shallow ploughing will be necessary. And further;

if it is desired to drill on *flag* i. e. the inverted sward of a clover ley, substitute an iron wheel with a triangular pointed rim, load the wheel with stones or lead, place an horse before, and going up the middle of each furrow, the seed will be regularly deposited in the groove cut by the wheel. Harrow as before. If the furrows are straight, the corn will appear as regular as any horse-drill whatever can place it. If the length of time which such a process requires is objected, I answer, that it is not designed for the use of those who have to sow 50 or 60 acres per day, but of those only, whose object is to sow 20 or 30 only in a season; and to such, the loss of a few hours is not of consequence sufficient to over balance the advantages to be gained by drilling their corn: and when these advantages can be purchased at so easy a rate, (about 30 or 32 shillings) there are few, I should suppose, if they are not blind to their own interests, but would make a trial with the proposed implement, subject to such further improvements as an ingenious workman may suggest.

I am, Sir, your's, &c.

AGRICOLA NORFOLCIENCIS.

ON THE COMPARATIVE VALUE OF SHEEP AS
FATTENING STOCK.

To the Editor of the Agricultural Magazine.

SIR,

THERE appeared in your Magazine for February an extract from the papers of the Bath Agricultural Society, containing the result of an experiment, made to ascertain the most profitable of six breeds of sheep, viz. the Leicester, Cotswald, South-down, Dorset, Wilts, and Mendip. As it was conducted under the inspection of Mr. Billingsley, a man whose name stands high in the estimation of the agricultural world; and as six individuals, each of them, sent the sheep which they supposed to be the most profitable, and who would each feel themselves interested in the success of their favourite breed, any unprejudiced person would have thought that the most profitable would have been clearly ascertained; but I confess, had not the names of the parties who supplied the sheep, and of him under whose inspection the trial was said to have been made, been stated by you; so far from supposing it the communication of an enlightened agriculturist, to the first agricultural society in Europe, I should have thought it the production of some person prejudiced against the Leicester sheep, who thought there might be some small chance of injuring them in the opinion of those at a distance from where the experiment was said to have been made: and as in 1792 there were many counties in which they had scarcely

made their appearance, for a time he very probably might have succeeded.

As a very great proportion of the sheep stock in Norfolk consists of the Leicester and South-down breeds, I have had many opportunities of observing the comparative increase of each, and I assert that it is not only improbable but absolutely impossible that a healthy Leicester sheep should not gain more than 20 lbs. in 48 weeks, where a South-down of the same age would gain 36 lbs. and in this assertion I am confident I should be supported by the most zealous advocates of the latter breed. I am convinced they are both very valuable breeds of sheep, and that we are under great obligations to Mr. Coke, to whose meritorious exertions we are almost exclusively indebted for their introduction into this county; and I have little doubt that one of them will, by the Duke of Bedford's experiment, be proved the most profitable in the possession of this island.

As you very properly observed, in a note, the nett produce of the five Mendip sheep, instead of 3l. 17s. 4d. as is stated in the extract, is 4l. 7s. 4d. which places them next on the list to the Dorsets, whose produce was 4l. 8s. 9d. and making allowance for the additional quantity of food consumed by the latter, the former will be found by far the most profitable sheep. From the 3d to the 10th of April the Dorsets eat of cabbages 29 lbs., of hay 123 lbs.; from the 20th to the 27th of June, of vetches 1050 lb.; from the 1st to the 8th of December, of cabbages 526 lb., of hay 49½ lbs.; the whole of which amounts to 555 lbs. of cabbages, 1050 of vetches, and 166½ of hay; whilst the Mendips in the same time consumed only 446 lbs. of cabbages, 128½ of hay, and 870 of vetches; not so much by more than a fifth; consequently there might have been six of the Mendips kept upon the food which was consumed by the five Dorsets, whose produce would have amounted to 5l. 4s. 9d½., exceeding that of the Dorsets by 16s. 0½d. Most probably had Mr. Billingsley's communication been examined before the Bath Society, an error so obvious would have been immediately detected; and had it been so clearly demonstrated that the Mendip was so much the most profitable breed of sheep, I have not the least doubt that long before this time they would have been dispersed over the whole kingdom, and that the Mendip Tup Society would have exceeded in opulence their brethren in Leicestershire.

It was with great pleasure I saw that Dr. Parry's sheep obtained a prize at the last meeting of the Bath Society, and that pleasure would be much increased by seeing his promised answer to Practicus.

I am, Sir,

Neighbourhood of Holkham,
March 16, 1803.

Your obedient Servant,
A NORFOLK FARMER.

For the Agricultural Magazine.

ON THE DIFFERENT KINDS AND PROPERTIES OF WOOL, &c.
COMMUNICATED BY MR. COLLINS, OF DEVIZES, TO THE
BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY.

SURRY.—*BANSTED Downs*; short, thick, close; I only saw it on the sheep's back. *Common heath*; longer, yet soft, coarser, much filth or hoar. *Sand heath*; fine, silky, full of white and black sand.

SUSSEX.—*Down*: *South Down*; short, thick, inclined to harshness. *Underhill*; the old sheep kept one winter off the downs, and shorn in the summer, softer, but not so fine. *Weald*; falling wool, mostly from the Underhill wool, deep combing, &c.

HANTS.—*Forest*; small, fine, filthy, sandy. *Down*; larger, harsher. *Broken up*; larger and harsher still, does not recover in a man's age.

DORSET.—*Down*; coarse and deep. *Forest or Common*; fine, filthy, sandy,

WILTS.—*Down*; fine, soft, clean, white, before the breaking up so much down, and the introduction of the large breed; now clean, white, coarse, not soft. *Inclosure*; mostly fattening or to be put on fattening.

SOMERSET.—*Inclosed*; a deepish thin wool, yellowish, soft, and silky. *North part*; thicker, shorter, not so fine, but good.

GLOUCESTERSHIRE.—*South part*; large, deep, combing, strong, whitish, rather coarse. *North part*; more on the fattening.

MONMOUTHSHIRE.—*Forest or Common*; small, yellowish, fine healthy, and mossy. *Inclosed*; small, but larger, yellowish, fine, clean, thick matted, not trinded.

HEREFORDSHIRE.—*Rye-Land*; thin, hungry, harsh, out of proof, worse and worse; in the *working* or *sand ground* apt to be filled with the beards of the rye. *Inclosure*; thick, yellowish, the finest wool in general in the kingdom, but much worse by mixture. *Forest or Common*; small, soft, silky, and filthy.

SHROPSHIRE.—*Forest or Common*; small, yellowish, soft, silky, filthy, most times thick haired, (or cat's hair), yellowish.

RADNORSHIRE.—*Forest or Common*; small, whitish, thicker, harder, filthy, and some sandy.

BERKSHIRE.—Deep, strong combing wool.

ISLE OF WIGHT.—*Down Wool*, is rather finer than the Wilts. Inclosures, and large farms, have gradually introduced a larger sort of sheep, and consequently coarser and deeper in the staple, and in the same or greater proportion lessened the quantity of short or clothing wool, whether to the emolument

of the community at large, or not, is a question; my decision is on the negative side.

The *Whim of the Day*.—The introduction of Mr. Bakewell's breed, has answered many people's ends, whose interest it was that this whim should take place and be continued, but of a woeful experiment to many who pursued this whim; from the introduction of the goggles, a disease not known to our unwise forefathers, but spread far and wide by their wiser children; besides thwarting the universal disposer of all creatures, who hath placed the smaller cattle, vegetables, &c. on the hills, and the larger in plains and low lands; and the folly of putting such large rams to such small ewes, is double, some having lost the greater part of their flock thereby. The goggles have nearly overthrown the whim of such large sheep, introduced at first by some noblemen, or men who had large estates in their hands, and vied with each other who should produce the largest and fattest cattle; which has been an astonishing injury to the community, viz. a small or middling family could dispense with a leg of mutton of 5 or 6 lbs. but cannot on any account buy one of 14 or 15 lbs. besides the strong, nauseous, cadaverous taste of the latter, compared with the fine flavour of the former.

Terms of art if not well defined, will leave the reader in the dark, or at least liable to err.

WOOL—an uniform hair, protruded through the skin of an animal from a root, and which does not fall off without some violence or disease in the animal.

FUR—is a hair of a capillary nature, and usually such creatures have two coats a summer and a winter one; sometimes these are mixed, which is an inconceivable damage to the medley cloths and seems to call for a remedy if possible.

FLEECE,—the wool shorn off one sheep, and wound up together by a band twisted out of some parts of it.

TOP,—in the fairs at Hereford, &c, the same thing, though sometimes through avarice the fleece is broken into several parts, and every one wound up is called a top, and the seller can suit himself as the sum of the scale, in trinded wool, which is wound up as close as possible in the form of skittle pins, each is called a top. A pack, in the country 244 lbs. when fit for use in London, 242 lbs. In Romney Marsh, and Essex, part of Surry, Sussex, and Hants, the wool cloth is filled, then weighed, deducting 4 lbs. in every twelve score, as customary allowance to the buyer. In Sussex the todd 32½ lbs. in Hants, 31 lbs. upright, or 30½ lbs. turning. Reading fair 29 lbs. The standard weight for clean wool fit for use 30½ lbs. the standard todd 28 lbs. the weight in Wilts, 21½ lbs. The stone at Hereford, &c. 12½ lbs. much altercation between the buyer and seller about the half pound; the wool-stapler allows it on

wool fit for sale, and therefore it seems but reasonable to have the same advantage when he buys, that is far short of an equivalent in the common Forest wool.

STAPLE.—If a sheep with a good coat on him walks, the wool *parts* in many places; if one of the partitions were to be plucked or cut off, that would be a staple, and there are a variety of terms of art used on this occasion; as long, short, thick, thin, hovery or frothy, hard, harshy, soft, smooth, clear, strong, rotten, weak, colted, felted, matted, hitched in the middle or ground, in proof, or out of proof. If combing wool is matted in the middle of the staple, it will not open in the suds, and in combing will run almost to pinnels, if at the ground it will open, and is but of little harm.

SORTS.—Combing, we only made matching, and body. Information says fifteen or sixteen different sorts, where the combing is tried, sorted, or used, regarding the fineness of the hair, and the length of the staple; there is a refuse after combing left in the combs, called pinnels, used for linseys.—Short wool, we made eight sorts of it, and those used for various purposes.

Selling prices about 1780.

Matching $11\frac{1}{2}$ d. to 12d. Body $8\frac{1}{2}$ d to 9d.

	Hereford.	Shropshire.	South Down.	Wilts.
	s. d.	s. d.	s. d.	s. d.
Choice locks	- 2 6	2 0	1 9	1 6
Overlookings	- 1 4	1 3	1 $1\frac{1}{2}$	1 0
Middle Fine	- 1 0	1 0	0 11	0 $10\frac{1}{2}$
Running Fine	- 0 $10\frac{1}{2}$	0 $10\frac{1}{2}$	0 10	0 $9\frac{1}{2}$
Second (no distinction)	0 9	Abb. 0 8	Warp. 0 6	$\frac{1}{2}$ list 0 5

Buying prices.

Herefordshire stone from 18d. to 2s. Shropshire, Radnorshire 12d. to 14d. South Down 25s. per todd to 32s. Wilts $9\frac{1}{2}$ d. to 10d. per lb. Hants 22s. per todd.

The wool of those Spanish sheep which I have examined, is degenerated below the quality of the true South Down wool. It is my opinion that most of the Sussex sheep introduced into Hants. and Wilts. are already considerably degenerated, as to the wool, in shortness, fineness, and quantity.

There is a very remarkable quality in *black wool*, which is, that moth gets into it much sooner than into *white*, and even if made into cloth, the moth cannot be easily kept out of it; but if the wool be dyed, that quality is destroyed.

Mention has been often made of *improvement in the breed of sheep*, to me it appears a very vague phrase without any determinate meaning. If the farmer, or grazier, or butcher, gets more money by dealing in any particular description of sheep, they judge it an improvement whether the quantity

of wool, size of the sheep, its fatness or its tallow and pelt be the most remarkable.

Yolk in wool seems to be the inspissated perspiration of the animal, but not sweat; for that is watery and saltish, which would corrode the skin of the animal, as we experience in the water running from the eyes or nose, excoriating wherever it runs; but the yolk seems to be of an oily nature, easily miscible with water, and will scour almost as well as soap. The quantity at a medium of Hereford, Shropshire, Sussex, Wilts, is about half the weight of a yolky fleece. The yolk in a fleece, weight 3 lbs., will be near 1½ lb., which is the customary allowance to the wool-buyer: if any sheep has escaped washing, and is shorn in the yolk, the Farmer sometimes orders such fleece to be hard-washed, which does much harm, as it mixes the fine and the coarse together, so that they are with great difficulty afterwards separated from each other; and some, out of covetousness, near shearing time, shear the dead skin, and wash that wool; which is worse still if it be used together, as it is a cause of extraordinary shrinking; but if in either of these cases they would use it for blankets, mops, &c. for their own use well and good.

On the Choice of Sheep. With a view to improve the wool of a flock of sheep, at shearing time, take notice of the fleece when cut off, look at the bottom or part of the separation; if it be *stitchy-haired*, mark that sheep for sale or fatting, whatever other good qualities it may be possessed of. If thin of wool on the back, let that also be marked for sale or fatting; because when it rains long or hard, the water penetrates easily to the skin on the back, washes out the yolk, and chills the spinal marrow. In the choice of your fleece for stock, avoid as much as possible a medium between combing and clothing wool, as such would not be so useful for either purpose. Mark the sheep bearing such wool for sale or fatting. If your sheep has a very coarse breech, mark it for sale or fatting. Separate all these, as well as scabbed, giddy, fly-blown, foot-rot, dogs or pigs mouth, scouring, or any having an infectious disorder, from the flock, and on no account whatever suffer them to be with it.

In the first choice of the ram or ewe, never go farther from your own farm for either, than you can help. If your's be down land, buy from off the down; if inclosed, from the inclosed. Remember to buy from worse land, if possible, than your own, because there is a greater probability they will thrive in your keeping; but take care not to keep them too well, as that may be attended with great inconveniencies, if not with loss; for a sheep should work hard for its maintenance whilst in the flock, yet not be pinched. Search the coat

of the ram narrowly, to avoid a *stitched-haired* fleece; for this would so damage your wool in two years, that it could not be recovered again, without changing your flock, in twelve or fourteen years. Again, however handsome the shape, however fine the wool, reject him if he is not a *close thick coat*, in which is plenty of yolk (a certain sign of health) along the back. The same care should be used in choosing the ram, whether for combing or clothing wool. Buy your ram a little before shearing time, if you can; not at any fair or market, but at the Farmer's house; for then you will see the ram as he is, without being shorn or trimmed by the *sheep-barber* purposely for sale; then you will also know the depth or length of the staple; the shorter, finer, and thicker it is, the better for clothing wool; the longer, thicker, and finer, the better for combing wool. As to the ewes they are rather to be raised out of your own flock, than bought in from elsewhere; as they will be more naturalized to the soil, and other circumstances peculiar to the farm.

When a sheep dies, get a surgeon to open or dissect it; get him to make his remarks as he proceeds, noting them down in a book for that purpose; thus do for two or three sheep in every disorder; you will thereby acquire skill enough to examine a dead carcass by yourself.

Disorders in Sheep. The rot or, consumption, the pelt rot, or falling of the hair; on some the foot rot, called the gout; the hunger rot, or starving; the goggles, the red water, or dropsy; the stone, the fly, or maggot; giddiness, dog or pig's mouth, broken mouthed, the worm in the tail, the shab, itch or scab, lice, dog worried, bit, or torn, the small and large tick, the staggers, the chill.

The Rot or Consumption is frequently the effect of a cold, to which sheep are very liable who have thin coats, and lodge on wet lands, as appears by their frequent coughing. How the *flukes* get into the liver, I can no more account for than how various kinds of worms are bred in the human body.

The Pelt-rot, or falling off of the hair or wool, arises first from a sudden alteration from a scanty to a full feeding; secondly, from a *partial fever* in the spot where it falls off, as on the neck, shoulders, back, or the rump; thirdly, the shab, loosening it at the ground; fourthly, gangree nor sphacelus, which the falling off of the wool discovers.

The Foot-rot, or by some called the *Gout*, is said by most Farmers or Shepherds to be infectious. The best information I can get concerning this, is, that between the claws of the fore feet (as I do not find it attacks the hind feet) a swelling is perceived, which tends to separate the claws in some degree. On squeezing or lancing it an *hairy worm* is taken out. The

place being anointed with some ointment, and bound up for a few days, the cure is effected.

The Hunger-rot generally proceeds from the Farmer's poverty or covetousness, in giving very bad hay for their winter provision, which they do not eat.

The Coggles, a disorder unknown to our ancestors, but by comparing the different accounts of the effects together, appears very plainly to me to be a paralytic stroke, affecting the spinal marrow.

The Red Water, or the Dropsy. As the animal swells, the blood almost serum, watery bladders in different parts, chiefly in the fore part of the animal's body, and the skin, when stript off, has red spots, in various parts and of various sizes. My conjecture is, that the wool, usually called *frothy*, is owing to this disorder, a want of *yolk dryness, harshness, thin and weak staple*, soon becomes dead, little or no proof, on breaking it *cries out*, and much dust flies off. All these symptoms are to be found in wool, where the sheep are fed constantly on a very light, sandy, arable soil.

The Stone is not a common disorder, I have never heard but of one instance of it.

The Fly or Maggot. If this happens before shearing, the sheep is indisposed, and does not yield a proper quantity of yolk, and thus it becomes a proper nidus for it to deposit its eggs, which are soon hatched by the heat of the body. The maggots immediately feed on the flesh of the sheep; but if they are not destroyed, by applying tar, or some other known remedy, to the aggrieved place, they increase so fast in number and size, that the sheep itself is soon destroyed.

Giddiness. This is said to arise from a worm or maggot under the horn on either side, and that the turning round is the effect of this worm or maggot.

Broken-mouthed, a manifest symptom of age and decay.

The Worm in the Tail. The hair drops off, the animal restless, frequently rubbing the part affected, hindered from eating quietly its food by smart or pain.

The Shab, Scab, or Itch, said to be infectious. I am told there are living insects, whether of the same form as in the human itch I do not know; once I saw a scabbed sheep washed with human urine, the consequence whereof was, that in a day or two the scab spread so far as the skin was wetted with urine. The usual remedy is tobacco steeped in water, with some oil or spirit of turpentine added thereto, and the aggrieved part washed therewith. But as it is always used with oil or spirit of turpentine, it seems to me probable that the turpentine is the specific, properly lowered down with water, according as the case may require. I am just now informed by a Farmer, that his shepherd gets strong to

bacco and flour sulphur, and boils in the meat brine, and afterwards puts into it oil or spirit of turpentine, using it without any water, and by applying it in small quantities.

Small and large tick. These abound most with the animal that is diseased, and may therefore be considered as a sign of unhealthiness. An abundance, even of the small ticks, gives the wool a yellow greenish colour. The fineness and softness is increased thereby. The large tick I have only found in the Sussex and Herefordshire wool; in the latter, I have never found any harm therefrom, but in the Sussex wool and sheep, it produces much harm to both.

The Staggers. This disorder attacks lambs; if discovered in time, the shepherds bleed them frequently in the eye vein, and thus a cure is obtained.

When such a multitude of sheep died after shearing in June, 1795, I found by enquiry, they were of the best, stoutest, and healthiest sheep; as the weather was severe, they, to get away from it, got so close together, that they were stifled; whereas the weaker, not being able to thrust in so close, escaped with their lives, as very few of the latter died in comparison to the former.

The Lask or Scouring, Query, if from too moist food, indigestion, griping or what other cause? if not stopped, it generally proves mortal.

Preservation of the Health of Sheep, let the Farmer frequently look over his flock, and see that their tails are kept clean. Never suffer them to lodge two nights in the same fold; it is better to fold over twice than to do thus, I am informed, sheep taint where they have been, sooner than other animals, perhaps because of their numbers. A very common disorder ewes are liable to after yeaning, is a *stoppage in the lacteal ducts of the udder*, sometimes in that leading to one of the nipples, and sometimes to both; the udder swells universally with partial hard knobs, which soon bring on an inflammation, and if not stopped, perhaps, in the course of twenty-four hours, part, if not the whole, of the udder mortifies. The intention is to stop the mortification. The process of cure is, to clip off the wool as close as possible; to open with a razor or other sharp instrument, the principal lacteal duct or ducts; to squeeze out the morbid matter, and put in a little fresh butter; and to keep the sheep separate from the flock. The ewe frequently loses the use of one teat and sometimes both, if but one, she will maintain the lamb; if both, the lamb to be taken from her, and the ewe fatted.

ON THE CULTURE OF THE DRUM-HEAD, OR COW,
CABBAGE.

To the Editor of the Agricultural Magazine.

SIR,

THE honour you have done me of inserting my former communications, and the early attention you paid to them, has induced me to send you the following account of the culture of the drum-head, or cow, cabbage; a plant on which I have made some experiments with considerable success, upon land deemed but little calculated for that purpose; namely, on a light mixed soil, of the value, according to the present high estimate, of, from twenty to twenty-five shillings per acre; lying principally upon a gravel about eight or nine inches from the surface, and subject to be infested with red weed, (the trivial names of our three English poppies, the *Papaver Argemone*, *Rhæas*, and *Dubiam*.) At first I met with very little encouragement from my neighbours, who smiled at my supposed folly, as in their opinion cabbages would not succeed but upon a stiff or very rich soil. This representation, far from discouraging me, tended rather to excite my industry; and I became anxious, by a spirited culture, to refute, if possible, those objections which I could not but consider as the effects of ignorance and prejudice. Accordingly, I determined the ensuing year, to make the attempt both with autumn and spring-sown plants. Having prepared a plot of ground in my garden for seed beds, the former were sown the first or second week in August, and as soon as they had acquired a sufficient size were pricked out on fresh beds, previous to the winter: the latter were deposited in the ground the beginning of the March following. My land was, at first, prepared according to the mode generally adopted. It was thrown into narrow ridges, or what is commonly called four-furrow work, and planted with a single row along the top of each ridge, at the distance of two feet and an half, or three feet, plant from plant. The autumn sown plants were set out into the field during the month of May; and the spring ones as early as possible in June, varying, however, according to season, size of plants, and other circumstances. They were afterwards hand-hoed, horse-hoed, and earthed up. The produce very much exceeded what my neighbours had given me reason to hope for, and was certainly superior to any crop of turnips on the same soil, but undoubtedly fell short of my own expectations; and my mode of culture I found defective in several particulars. Nothing promotes the luxuriant growth of cabbages so much, as repeated earthings, but when they are planted upon narrow ridges, it is scarcely possible to do it effectually. The double breasted

plough with expanding mould boards, the implement I made use of for this purpose, would not raise the earth sufficiently high, and the farther assistance of the turnip hoe, which became absolutely necessary to complete the process, by drawing up the earth towards the stems of the plants, left them upon so sharp a ridge, that they could derive but little benefit from falling showers. Aware of these defects, I determined in future to alter my mode, and adopted one which I have pursued for several years, and which has fully answered every idea which I had previously formed of its success. In the hope that it may prove as useful to others, as it has been serviceable to myself, I have ventured to send it forth as a candidate for a place in your Magazine, whose increasing reputation will render it a valuable repository for agricultural experiment, and whose increasing circulation will, I trust, amply reward the spirited exertions of its proprietors.

Instead of throwing the field I design for cabbages into four furrow work, I have it ploughed into broad flat ridges from twenty to thirty yards across. The number of ploughings vary, three, four, or five, according to circumstances. Previous to the last I have from fifteen to twenty cart loads of manure, from the compost, or dunghill, spread over the land, and immediately sealed in. After this it is ploughed as deep as the soil will admit, and with a furrow as nearly as possible nine inches in width. In this state it lies, ready for the reception of the plants, till rain falls, but should that hold off more than a fortnight, the land is ploughed afresh. When this operation has been properly executed, any person standing at the end of these ridges and looking up the land, will plainly discover a narrow seam or valley between each furrow sufficient to direct the eye, of which I make the following use.

In the seam or valley between the first and second of these, beginning to reckon from the open furrows (on either side the field) which are made by the completion of the ridges, a man with a blunt dibble, such as is commonly made use of for the planting of potatoes, make the holes at two feet and an half or three feet distance from each other, and about seven inches deep, a boy follows and drops a plant in each hole, and a man after him sets them upright, and closes the earth about their stems. When one row is finished, we count off, either to the right or left, to the fifth seam including the one already planted, and proceed as before; in this manner we go on planting every fifth seam, till the whole is completed. By this method the plants are set on the level at three feet distance row from row, and in straight lines. As I always have my land ready prepared, and take the advantage of the first shower that falls, my plants seldom require any watering. When they have recovered the removal, the hoers are sent in,

who with the turnip hoe cut the intervals between plant and plant, and draw some fresh earth to their stems. The alleys are hoed by a shim, upon the principle of the one used in the Isle of Thanet, but upon a lighter construction, and drawn by a single horse. Should these alleys have become too much compressed by the planting and subsequent operations of hoeing, I make use of an implement which is an humble imitation of Chateauvieux's single cultivator, which sufficiently answers the purpose of loosening the soil. The double breasted plough follows, and passing along the centre of the alleys throws still more loose earth on each side towards the plants. By this (which takes place about a fortnight after the hand hoeing) the land is thrown into narrow ridges, but the plants instead of standing on the top of a ridge, are placed in a valley with a narrow ridge of earth raised on each side of them; in consequence of this every shower that falls is conducted to the roots of the plants, instead (as in the former method) of being diverted from them. In about three weeks or a month the hand-hoers level these ridges by drawing the earth towards the stems of the plants on each side, which at the same time destroys all weeds. The cultivator loosens fresh soil in the centre of the alleys, which are now become open furrows, and the double breasted plough passing once or twice along the same, as occasion may require, throws a further supply of food towards the plants, still leaving the edges of the ridges higher than the centre. After this they will very soon so completely cover the ground as to require no farther attention, except that in the Autumn it will not be amiss to look them over occasionally, and keep them clear from caterpillars, (the larvæ of the common yellow butterfly) an enemy to whose attacks all the cabbage tribe are peculiarly subject at that period.

The produce of an acre of cabbages, cultivated in this manner, I have ever found fully equal to, and in many instances much superior to any acre and half of turnips on the like soil. Nor have I ever had reason to think, after the most accurate attention to the following crop of barley or oats, that they left the land in an impoverished state, an objection I have frequently heard advanced against their culture.

The difficulty of compressing a subject of this kind has led me to trespass upon your patience longer than I at first intended or expected. Indeed I am not satisfied that I have even now steered clear of obscurity. The candour, however, of your readers will lead them to admit that it is no easy matter to give a clear detail on paper of any, even the most simple, operation in husbandry. I shall therefore throw myself wholly on their mercy, and should any difficulty occur which has escaped my observation, I shall be happy to give any farther

explanation, which they may think proper to require. Equally ready shall I be to explain any provincialism into which I may have inadvertently been betrayed.

I cannot dismiss this account much as it has already exceeded the limits I had prescribed myself, without the addition of the following detached remarks.

I mentioned in the former part of my letter that my cabbages were in my first experiment, *horse-hoed*. The method I adopted in this operation, was the one recommended by Dr. Anderson, in his work entitled "Agricultural Recreations." On some soils, no doubt, it might prove very efficacious, on mine, it certainly produced no visible good effects. It is hardly necessary to add that I relinquished it, as useless and troublesome.

Another remark relates to the expediency of cultivating autumn sown plants. Unless they are required for very early consumption, by which I would be understood to mean from the beginning of October, till Christmas, I would by no means recommend their adoption on any soil of a similar description with my own. I have, upon many repeated trials found, that they arrive at too advanced a state of maturity, and shed their large leaves. Should the autumn prove rainy, the cabbage itself bursts open, and exposes the interior and most valuable part, during the ensuing winter, to injury from frost and moisture.

Another objection to them, arises from their being frequently materially injured, if not totally destroyed, by maggots at the root, even after have been set out into the field, and have acquired a considerable growth. As I never have observed a single instance of the plants which are raised in March, being subject to this attack, and as they are infinitely less liable to the objections I mentioned before, it will, I think, give them a most decided preference.

I have the honour to be, Sir, your obedient servant,
CASTOR.

For the Agricultural Magazine.

ON THE BUSH-VETCH, EXTRACTED FROM THE BATH PAPERS.
BY THE REV. MR. SWAYNE.

THE Bush-Vetch is a plant whose root is perennial, the stalks are many, some of them shooting immediately upwards, others creeping just under the surface of the ground, and emerging, some near to, and others at a considerable distance from, the parent stock. The small leaves are connected together by a midrib, with a tendril at the extremity; the flowers are in shape, like those of the common vetch, of a reddish purple colour; the first that blossom usually come in

pairs; afterwards to the number of four at a joint. The pods are much shorter than those of the common vetch, larger in proportion to their length, and flatter, and are of a black colour when ripe; the seeds are smaller than those of the cultivated species, some few speckled, others of a clay colour. Being a perennial, it should seem to be a very proper kind to intermix with grass seeds, for laying down lands intended for pasture; and that it is as justly entitled to this epithet, as any herbaceous plant whatever. I think I may be allowed to affirm, having observed a patch of it growing in one particular spot of my Orchard, for these fourteen or fifteen years past. It is not only a perennial, but an evergreen; it shoots the earliest in the spring of any plant eaten by cattle with which I am acquainted, vegetates late in autumn, and continues green through the winter, though the weather be very severe; add to this, that cattle are remarkably fond of it. These peculiarities it should seem, would make it particularly valuable to the Farmer, as a green food for his sheep in the winter and spring, when food of that denomination is so exceedingly scarce.

I imagine the chief reason which has hitherto prevented its cultivation, has been the very great difficulty of procuring good seeds in any quantity. The pods, I find, do not ripen altogether; but as soon almost as they are ripe, they burst with great elasticity, and scatter the seeds around; and after you have procured the seeds, scarcely one-third part of them will vegetate, owing to an internal defect, occasioned by certain insects making them the nests and food for their young.

In the autumn, I collected a quantity of these seeds from the hedges,—The following March, I sowed them in drills in a plat of ground in my kitchen garden, which measured exactly five yards square; they were sown in eight drills, and as thick in the drills as I would have sown peas. They came up very thin and irregular; in some places, there was more than a foot vacancy between plant and plant. This I was much surprized at, as the seed had been carefully preserved during the winter, and I could not, from their appearance at the time of sowing, suspect them to be the least defective.

The plants grew very sparingly till towards autumn, but before winter they made a tolerable appearance. Early in July, I collected some more seeds from the hedges, tied them up in paper, and put them into a drawer in my bureau. Upon opening the paper in September, I observed a vast number of dead flies in it, and as many of the seeds with a small hole in each. The number of the flies was 280, the whole number of seeds 1080.

These flies upon examination, proved to be a small species of *Ichneumon*. This puzzled me not a little, as I had learnt these insects were a race of cannibals, from their *larvæ*, or

caterpillars, always feeding on other insects. Upon which I opened many of the other seeds that had no holes in them, and in several of these, discovered another insect alive, and in different states of its growth. This proved to be the *bruchus pisi* of Linnæus, a near relation of the weevil, and the *attelabus*. From hence I surmised, that at the time when the Bush-Vetch blossoms, the female *bruchus* lays her egg within the blossom, and the *ichneumon* immediately after deposits her egg in the same place.

After the frosts were over, I was much pleased to observe, that scarce a plant of my vetches had been killed by them, and their verdure very little injured. In April, they had entirely filled up the ground, and were beginning to flower; at this time, as I expected, I found numbers of the *bruchus* intruding themselves into the blossoms before they were scarcely open, and the attendant *ichneumones* ready to follow them. I used every method I could think of to chase away these insects from my crop, by strewing soot over, kindling smoaky fires round, &c. but all to no purpose.

In the beginning of May the vetches were in full blossom, and it was amazing to see what a croud of insects were swarming about them. At that time, I intended to preserve the vetches for seed; but some time after, observing that they were beginning to rot from their over-luxuriance, I cut them without taking any particular account of their produce. They were cut twice afterwards during the summer. Having remarked in general, that the produce of these cuttings was very great, I was determined the next year to keep a particular account. The whole plat then of twenty-five square yards produced

1st cutting	16 lb. green	- - -	supposed 4 lb. dry
2d ditto	130	ditto would have weighed	21½ dry
3d ditto	- 62	ditto would have weighed	- 14 dry
4th ditto	- 76½	ditto would have weighed	- 12½ dry

Total 284½ green 52 dry

An acre therefore, (reckoning 4840 square yards to the acre) in the same circumstances, would have produced the total amount of

tons	cwt.	qrs.	lb.	
24	11	3	3	green
4	9	3	15	dry fodder.

N. B. You are to recollect, that at the time the first cutting was made, there was scarce a green blade of grass to be seen; and that the season, till after the third cutting, was as unfavourable to vegetation as perhaps could be.

ON THE SUPERIORITY OF THE ROW-CULTURE.

To the Editor of the Agricultural Magazine.

SIR,

YOUR very able and intelligent Correspondent Agricola Norfolkensis, as the best of us cannot be intirely exempt from errors and prejudices, seems in a small degree, tinctured with that partiality, of which he, without the least mixture of harshness or illiberality, however, accuses others, I allude to his late remarks on Messieurs Close and Amos's accounts of the profit of Drilling, as stated in the New Farmers Calendar. His objections are of so trifling amount, either in money or consequence, that allow them then full force, and a vast superiority remains in favour of the drill system. According to my recollection, for I have not the book immediately at hand, the author of the Calendar proves a vast balance in favour of row-culture, even-handed, whether as to quantity of seed, or product, and allowing an extra expence for drill implements, which surely does not evince a need of any little arts of exaggeration in favour of the new practice. This being a fair statement, we may be allowed to suspect, that the Norfolk Farmer has hitherto been unable to clear his mind entirely from old prejudices, and that, although convinced, he probably yields with reluctance, his assent to the reality of the modern improvements. The most heavy of the old "plodding" race of farmers could scarcely be misled by the statements in question, of the seed quantities; not barely on account of their being matters of fact, with even-known names annexed, but also from the general publicity of the drill-culture, and the small addition or diminution which it can be necessary to make in the quantities, granting any at all to be necessary. The best proof that the common farmers have not "laid down the book unconvinced," is, that it has actually found a circulation amongst that class beyond all former precedent, and that since its publication, the row-culture has had a wonderful increase.

With respect to the seed quantities used broad-cast, as stated by Mr. Close, if it be considered that they relate to times previous to the excessive rise in price, which has had a material and universal effect in the use of seed, and that he has quoted the broad-cast quantity of oats at four bushels, and that of barley at three, when it is notorious, that in many districts, it has been customary to sow six and even seven bushels of oats per acre; and that in not a few, no less than four of barley, as well as wheat, have been usually sown; it need not be acknowledged that he has over-shot the mark. In the smallness of the quantity per acre, sown with the drill, I think with

Agricola Norfolkensis, that Mr. Close is in an error; but this is still nothing more than our opinion and our practice, in opposition to those of Mr. Close. Mr. Close's intervals for peas, are, I apprehend, at least twelve, if not eighteen inches wide. In Kent, with eighteen inch intervals, no more is frequently allowed than three and an half pecks of small peas per acre, but of whatever kind, I never use less than five pecks.

The attack on Mr. Amos's oat experiment seems totally devoid of grounds, in any view whatever. That the drilled acre had only five, whilst the broad-cast had eight harrowings, appears a simple fact, which it is natural to suppose, the accidental different state of the land rendered necessary. That the breast-hoeing cost so little, and the hand-picking so much, is to be placed to account of the rate of labour in Lincolnshire. Could the broad-cast oats be possibly breast-hoed, or is it of no real benefit to hand-weed them. As to the price of the one being 2s. 2½d. per bushel, and the other 2s. 3d. such is merely an actual fact of separate sale, at different prices per quarter, making a fraction when reckoned by bushels. The strictness of a separate sale was certainly proper, in an experiment, as were all the other *minutiæ*. And what, in fine, do the objections amount to, upon the harrowing, hoeing, and weeding? Three shillings only; which being deducted, leaves still a superiority of one pound per acre, surely a most important one, without recurring to the tilth, a yet higher advantage than any instant pecuniary one, resulting from the row-culture.

The adoption by Mr. Lawrence, in his Farmer's Calendar, of the term row-culture, appears to me judicious. It is a convenient general term, comprehending all the various methods, of drilling, rilling by hand, and dibbling, by which corn is usually planted in rows. I know, however, that the use of this phrase has been treated by various critics, as a piece of literary affectation, in that author, and for ought I know, it may have really so originated. What is more remarkable, Mr. Lawrence, who is such a strong advocate for wide intervals and the horse-hoe, instead of giving his examples of the success of such, has chosen rather to quote Mr. Amos's practice, which consisted of narrow rows and the use of the hand-hoe. A similar inconsistency, at least singularity, appeared formerly in his practice: I well recollect seeing him in Hampshire, in 1791, putting in wheat, with Cooke's drill, at nine inch intervals, at the same time, professing to give a decided preference to those of double the distance.

The sentence passed by Agricola upon M'Dougale's hoe, I have no doubt, is perfectly just, as well as the preference

given to the single-shared horse-hoe, in my opinion, one of the most convenient light tools, in our agricultural catalogue.

I am, Sir,

With much attachment to the Agricultural Magazine, &c.

Riselip, Middlesex, March 4.

A FARMER.

ON SOUTH DOWN SHEEP.

To the Editor of the Agricultural Magazine.

SIR,

IN several of your late Numbers, I have, with much pleasure, observed the communications of Dr. Wilkinson, a gentleman farmer, who has often proved himself very capable of giving instructions in agricultural affairs; I have before me, a very valuable letter of the Doctor's in your 39th Number, on South Down Sheep, and Sussex Cattle, of the latter of which, he has given a very just description. In regard to the cross of New Leicester with South Down Sheep, I must acknowledge, that I do not very clearly see its necessity, since, if size be the object, the Ellman's variety of South Downs will fully answer that intent. The question is, whether by enlarging the sheep, you do not lose by the consequent inability of stocking so many per acre. As to lowering the value of the Down wool by the Leicester cross, we will suppose it about balanced by additional quantity; probably, after all, the cross is of a harmless affair, and the whole of the improver's gain is to be sought in the trouble he has taken.

In a subsequent letter (No. 41.) Dr. W. allowing the quality of mutton to be advantageously effected by the sweetness of the South Down herbage, yet seems to deny a similar result *e contrario*. Nothing, I apprehend, can be more clear, or indeed more subject to the evidence of fact, than the superiority of grass, over turnip or cake-fed meat, be it mutton or beef. The Doctor would much oblige many of your Correspondents, as well as myself, by an explanation of the following passage on the subject of sheep husbandry: He says, "it is a common practice to purchase South Down ewes having the New Leicester cross, in the Autumn, at the fairs in Surry, lambs of which are sold in Smithfield time enough for the ewes to go off fat from the grazing grounds the same year." This may, indeed, be well considered as the most profitable system of sheep husbandry, and is executed with a celerity, of which the farmers of this neighbourhood have no conception. Supposing the ewes very full of flesh, as well as lamb, an association rather uncommon, yet the suckling, and the expedition after used to get them to market, must surely be a great bar to the existence of any considerable proof in them, when they arrive there. From Autumn to Christmas, is, in

truth, a very short period for the various purposes of buying ewes, lambing them down, fattening and selling the lambs, and afterwards the ewes themselves! We shall be somewhat impatient for a particular explanation of this, from your excellent correspondent, and in the mean time,

I remain, Sir,

Your very humble Servant,

*Stowmarket, Suffolk,
March 10th.*

JUVENIS.

ON FALLOWING LAND.

To the Editor of the Agricultural Magazine.

SIR,

IN preparing land for the reception of grain or other sorts of crops by repeated ploughings, or the frequent exposure of new and fresh surfaces, to the action and influence of the atmosphere, a variety of alterations and changes are produced in the earthy, as well as other kinds of materials that constitute the soils. The heavier or more earthy particles of the land, by being under different circumstances of the air and seasons, thus frequently stirred and turned over, are so effectually divided and separated from each other, as well as broken down, that even in most of the stiff sorts of ground, as well as those of the lighter kinds, there is a degree of pulverisation and mellowness effected, that could scarcely have been induced by any other means; in consequence of which, the portion of vegetable matter become so uniformly, and so extensively blended and incorporated, and the manures that are afterwards applied, so minutely intermixed with them, that the fibrous roots of the growing crops, of whatever nature they may be, are enabled to penetrate and extend themselves more fully, and of course to draw more regular and varied, as well as more abundant supplies of nourishment.

By the extreme division and pulverisation that takes place, and the great irregularity of surface which is produced in this way, the dews and light refreshing rains that so frequently occur in the early spring months, are more easily admitted and diffused through, and detained in the hollows and interstices of the ground, and thus contribute powerfully to the support of the crops in the early stages of vegetation.

The practice of fallowing may, no doubt, in many instances, be highly beneficial, notwithstanding the objections brought against it by writers on husbandry; but at the same time it must be admitted, that in some sorts of soil it will for similar reasons, be much more advantageous and useful than in others. On the lighter kinds of land, where full and luxuriant crops of different sorts of plants, as turnips, potatoes, &c.

may be grown, that produce a close thick foliage, by the use of the drill, and repeated hand or horse hoeing during their growth. The ground may be kept perfectly clean from weeds, and in a fine mellow or powdery state, without the danger of being injured by too much evaporation and exposure as in fallowing, and likewise in soils of the same nature, that are rich from the frequent applications of manure, it must be equally injurious and improper, to expose their surfaces frequently to the influence of the air, sun, and rain.

But in all the wet-bottomed, stiff, adhesive, and clayey sorts of soil, which constitute a large portion of the lands of the kingdom, where, from the closeness of their textures, and the great tenacity of their particles, but a very slight or indeed scarcely any degree of pulverisation has been effected, the practice of summer fallowing may often be highly useful and advantageous, not only by the great mechanical alterations that must necessarily take place in them, by the repeated ploughing and turning up of their parts to the influence of the atmosphere, but by their admitting the particles of the manures that may afterwards be applied, to be blended and incorporated with them in a more minute and extensive manner. The degree of friability and mellowness that is produced in this way in such soils, has also other advantages—such as those of admitting the roots of the growing plants to penetrate them with greater facility, and presenting a more extensive surface for them, from which they may draw their nourishment.

And as in lands of these kinds, there is a constant tendency to throw up abundant crops of root and other weeds, it is perhaps only by the frequent turning over of the soil, and the tearing of them up by harrowing, as is the case in summer fallowing, that they can be effectually eradicated and destroyed. It is principally in this view, that the working of such soils in the early spring or summer months, becomes so particularly necessary, as at the period in which the seed is to be put into the ground, neither the season nor the state of the weather, will admit of their being sufficiently broken down and reduced by ploughing, or the weeds to be destroyed. And it may be added, that wet lands by being turned over during the winter season, are liable in many cases to become more stiff and adhesive, by which the roots of the crops must be more limited, and confined in their means of acquiring nourishment from them.

It has been lately well observed, by Mr. Brown, in his agricultural report of the West Riding of Yorkshire, that when land of a dry, gravelly quality gets foul, it may easily be cleaned without a plain summer fallow, as crops, such as

turnips, &c. may be substituted in its place, which, when drilled at proper intervals admit of being ploughed as often as necessary; whereas wet soils, which are naturally unfit for carrying such crops, must be cleaned and brought into good order, by frequent ploughings and harrowings during the summer months; indeed, it is strenuously contended by the same author, that the most judicious intermixture of crops upon clay soils, will not preclude the necessity of a summer fallow; though, he admits it may go a great way in preventing the necessity of its being so frequently repeated. But Mr. Young,* whose experience has been considerable, while he allows, that there is no question at all of the merit of fallowing when composed with bad courses of crops, and who thinks, that if the husbandry is not correct in this respect, the fallowist will certainly be a much better Farmer than his neighbour contends; there are courses which will clear the foulest land as well as any summer fallow, by means of plants which admit all the tillage of such a fallow. Cabbages are not planted "says he," before June or July, winter tares admit of three month's tillage, if tillage be wanted. Beans well cultivated will preserve land clean, which has been cleared by cabbages, and in any case, two successive hoeing crops are he thinks effective in giving positive cleanness. These observations are not, he says, theory, they are practice: and it is high time that mankind should be well persuaded, that the right quantity of cattle and sheep cannot be kept on a farm, if the fallows of the old system are not made to contribute to their support.

There are probably, however, many situations of clayey soils so exceedingly stiff and wet, that though turnips, cabbage or bean crops may be grown upon them, they cannot, from the great labour and difficulty of their preparation, and the high degree of injury that must be done in the eating or carrying them off the land be to much advantage, or such as to admit of that sort of culture during their growth, that will keep the ground perfectly clean from weeds. In such cases, no course of cropping, however judicious, can probably be effectual in this respect: it is, indeed, well known to such practical Farmers as have had the management of soils of this nature, that it is scarcely possible to be effected, even by summer fallowing itself. It has also been justly observed, that soils of this description are so frequently from necessity ploughed over when wet, that an adhesion and sourness is produced, that cannot be removed without exposure to the summer's sun, and the pulverisation afforded by the repeated operations of the plough, the harrow, and the roller. There is no sort of crop that can in such cases supply the place of fallow, as

* See Young's Agricultural Survey of Suffolk.

turnips are highly detrimental; and though drilled beans may answer in the way of an assistant to fallow, and have the tendency of keeping lands clean that are already in a proper condition; it is supposed from the necessity there is of sowing them early, that they can never be beneficially substituted for the radical improvement that is produced by a clean summer fallow.

But even if such sorts of land could be kept perfectly clean from weeds, by the judicious interposition of bean, cabbage, or other similar crops that might be cultivated on them, it is evident, that the various beneficial products which have been mentioned, and which are the result in a great measure of the perfect pulverisation and high degree of aëration, that is produced by means of summer fallowing, could never be formed in such an abundant manner, as to be of much utility in aiding the growth of crops. Nor could they be in so suitable a condition for the admission and extension of the absorbent roots of the plants, that may be cultivated upon them. Yet, though these circumstances may demonstrate the practice of fallowing to be occasionally necessary, and highly useful on such wet adhesive clayey soils, as the proper and most advantageous quantity of stock for the improvement of such farms, can seldom be kept where it greatly prevails. The repetition of the practice should, in this view, be prevented as much as possible, by the cultivation and growth of green crops, as often as the lands may be in a fit state for them, and they can be had recourse to with any chance of success. The *ruta бага*, or Swedish turnip, as being a plant somewhat more adapted to wet, stiff soils, than either the common cabbage or turnip might probably in such cases be advantageously used as a green crop, and by being eaten off in the latter spring months, when the ground became sufficiently dry to bear the cattle or sheep without injury, admit of a pea crop; after which, the land would probably be in a suitable condition for wheat. But in all such cases, much must depend upon the degree of cleanness, pulverisation, and aëration, that has been accomplished by the occasional use of summer fallowing.

As there is great variety in the conditions of such soils as may occasionally require the aid of naked or summer fallowing, in order to render them suitable for the growth of clean grain or other crops; some, from the nature of their situation, and the subsoils on which they are placed, being more inclined to the retention of injurious moisture or wetness than others, consequently more disposed to be cold, and to the production of large crops of weeds; while others, from the large proportion of clayey or tenacious loamy materials that

may be mixed and incorporated with the pebbly or other ingredients, may be more stiff and retentive, and of course more difficult, or more incapable of sufficient pulverisation, and of admitting the roots of such plants as are capable of being cultivated upon them, to readily establish themselves, and draw from them proper supplies of nourishment. And besides, the variety of these different states, there may probably be others that have not hitherto been well ascertained or attended to, such as may proceed from the differences in the qualities or properties of the clays or loams, as they enter into or exist in their compositions; upon each of which some diversity, in respect to the necessity, repetition, or method of conducting the business of fallowing, may depend. The correct Agricultor should therefore constantly keep them in view, whenever it may be requisite for him to prepare land by means of summer fallowing.

In regard to the method of performing the operation, it should always, like most other processes in husbandry, be conducted with a due attention to the circumstances and qualities of the soil, as more pulverisation or breaking down will evidently be required where the land approaches to the nature of a perfect clay, than where it has more of the loamy quality; and where the retention of moisture is considerable, more attention must be paid to the destruction of weeds, than where there is a greater tendency to dryness. Where the practice of naked fallowing is thought necessary to be performed, the most general method of proceeding is, for the land to be first ploughed up in autumn, a second time after the barley-seed season is finished, and two or three times oftener afterwards, as circumstances may render necessary, the ground being well broken and reduced by means of harrowing, and rolling in the intervals of the different ploughings. It is observed in Donaldson's *Modern Agriculture*, that in many districts, seldom more than three ploughings are given to lands in a course of summer fallow, one in autumn, or early in spring; another during the summer; and afterwards the seed-furrow. This preparation appears however, it is further said, extremely defective; as in an ordinary season it is scarcely possible that with so few ploughings, either the root or seed weeds can be completely destroyed; and when the summer happens to be wet or rainy, the lands under such management must certainly be in a very bad state for receiving the seed.

It has likewise been long since judiciously recommended, both in the preparation of lands, by winter fallowing for barley crops, and summer fallowing for those of wheat; that when it is first ploughed up after the harvest is over (which should always be done as deep as possible, and in narrow ridges,) no time should be lost in rendering the new turned up

soil as fine as possible by harrowing; as repeated trials and attentive observations have fully shewn, that such lands as are made fine before the sharp frost and winter rains come on, receive a much larger share of their influence than any other. But if the land be left in a rough state, there is seldom time for the rains and frost to penetrate or affect more than merely the outside of the large clods or lumps that are present. The outside may thus, indeed, be pulverised; but the middle of the lumps, wherever they are large, are found nearly in the same hard stiff state as when turned up by the plough. Hence it is evident, that the benefit of the air, winter rains and frosts, on lands thus left, must be only partial; and that of course, the harrowing it in the spring, especially when the latter of these are over, is too late for its receiving the full benefits which might otherwise have occurred from them, and the power of promoting vegetation not being nearly so great; therefore, to make winter fallows as fine as possible in autumn, is acting agreeable to nature. The greatest possible quantity of surface being thereby exposed to the atmosphere, and the land left in the state wherein the rains and frosts are most easily admissible: they are consequently more capable of penetrating and enriching the whole mass to a much greater extent. It is contended, that it has been invariably found, that the frost penetrates a quantity of earth, formed into a large hard clod, only partially, on account of its bulk and hardness; and that the same clod broken into four parts, would be thereby penetrated four times as much; or in other words, that four times the quantity of earth would be effected, and on a thaw be pulverised by it. For it is always found, after the breaking up of a severe frost, that all the small clods crumble easily into powder, while the large ones are only slightly reduced by the crumbling off of a portion of their external surfaces.

There cannot be much doubt, but that by reducing such stiff adhesive soils as require fallowing well, on their being first ploughed up, great advantages in the way of pulverisation may be accomplished, as in the spring and summer months they are apt to cake, and become so hard and lumpy as to be wrought with difficulty.

In order to fully ascertain the utility of this method of preparing fallows*, one half of a field of ten acres was left as nearly of an equal quality as possible in the rough state after ploughing, while the other was made very fine by harrowing and beating in pieces any large hard clods which the harrows could not reduce. In the following spring it was observed, that, that part which had been harrowed was much finer,

* See Bath Agricultural Society's Papers, vol. ii.

without any additional working, than the other could be rendered by repeated harrowings.

It is therefore evident, that upon most sorts of stiff, clayey soils, where fallowing becomes necessary, the first ploughings should be given, if possible, before the commencement of the winter season, and that they should also be well reduced by means of harrowing, in order to promote the decay of such vegetable matters as may be upon the surface of the land, as well as to promote a more complete state of pulverisation of the soil. This is often most usefully performed by gathering up the ridges, as in that way the ground is not only laid more dry, but the furrows more effectually opened for the draining off of the injurious moisture. In the second ploughing in the spring, which is generally before the cross ploughing, is given (oblique ploughing is preferable) these ridges ought to be well harrowed for several times, and occasionally rolled, that sufficient opportunity may be given to collect and remove every sort of weed that may be brought up to the surface. After this business has been properly performed, the land may be again ridged up by means of the plough, by which it is rendered less affected by wetness, and the portions of soil that had not been touched in the cross ploughing stirred. In this way a perfectly clean fallow may soon be produced. It has, however, been maintained, by some writers who have had much opportunity of examining the matter, that ploughing only is necessary; the collecting the roots of the weeds and removing them being useless and improper. But in the stiffer sorts of clayey wet soils, where we have imagined the following system to be occasionally necessary, it is almost impossible to get perfectly clear of different sorts of root weeds in this way, from the cloddy manner in which such lands break up in the operation of the different ploughings, the earthy lumps often containing many that are not in the least degree injured in their power of taking root, by the heat to which they may have been exposed in such ploughings. In these cases they can only perhaps be effectually eradicated and destroyed by the high degree of pulverisation, that may be accomplished by means of frequent harrowings and rollings; the weeds being afterwards carefully removed. In this way there may also be a considerable saving of expence, by lessening the number of ploughings. In such soils there can seldom be any danger of their being made too fine by operations of this nature, as the seed furrow, when given sufficiently deep, constantly leaves the land lumpy and irregular enough for the purposes of covering the grain, and protecting the young plants during the severity of the winter season. The benefits of affording as high a degree of pulverisation, or fineness as possible to the land, in the manage-

ment of this process has been fully shewn by the results of well conducted experiments. The produce of a field of barley and broad clover, one half of which had been prepared in the most perfect mode of fallowing, and the other half in the common method, on being harvested and kept separate, was in the following proportions, that which had been conducted in the latter way only affording twenty-four bushels to the acre, while the former yielded thirty-one, and the grain considerably better in quality. There was also an equal superiority in the clover crop, the succeeding year. That on the most perfectly prepared part being heavier by nearly half a ton on the acre. In addition to this, it cannot have escaped observation, that in large fields of wheat, where from accident or other causes, some portions of them have received more frequent ploughings than others; that in these parts, the crops generally appear for a great length of time, more perfect and promising than on the other parts.

In cases where manure is necessary to be applied to land after it has been prepared by the process of summer fallowing, it should be done according to the nature of the manure, and the circumstances of land, in respect to richness and the state of its tillage. Lime or Marle are generally laid on with the greatest benefit during the summer months, as about the middle of July or beginning of August; in which cases it should be spread out, as equally as possible over the land, and ploughed in with a very slight furrow, so as only just to mix and incorporate it with the mould, as by this means, where farm-yard manure is applied at the time the seed furrow is given, the calcareous and vegetable manures, by being thus more uniformly blended with the soil, as well as by their more extensive operation on each other, afford more abundant and regular supplies of nourishment to the crops during the first stages of their growth, and a degree of heat may be generated highly favorable to such states of vegetation.

In some cases of land after fallowing, the application of manure may however be wholly unnecessary, as from the great destruction of weeds, such improvement may have been given as to endanger the first crop by rendering it too luxuriant, and consequently liable to be lodged before it becomes ripe, if manure be applied the same season. Very strong crops of grain, have indeed been frequently produced on fallowed lands, without the smallest quantity of manure having been put upon them. In such instances it will be more economical and advantageous to make use of the dung with a view to the second crop, and not that which immediately follows the fallow.

Though the advantages that have been stated to arise from the perfect pulverisation, aëration, and cleanness occasioned

by summer fallowing in those soils, where it has been found to be occasionally requisite, can seldom be so fully obtained by other methods of cultivation; yet as that method is constantly attended with an heavy expence to the Farmer, and as many of the benefits that are produced by it, may be effected by the repeated partial fallowings that must occur in the hiculture of different sorts of crops, it should be constantly the aim of the cultivator, where the climate will admit of it, to lessen the necessity of summer fallowing, even on the wet clayey, as well as the light kinds of soil, by the judicious interposition of such sorts of close, thick, green crops, as can be grown and cultivated on them under the hoe system. This is still more necessary on account of the loss that must be sustained from the land often remaining such a great length of time totally unproductive, where the fallowing process is going on. It cannot, indeed, be disputed, but that the practice of summer fallowing, may be greatly lessened in many districts by the proper substituting of green fallows, or what are termed fallow crops, such as beans, peas, cabbages, tares, and rape, for the heavier sorts of land; and buck wheat, potatoes, and turnips, for such as are of the lighter kind. It is likewise maintained as a fact, that where large and luxuriant crops of these preparatory kinds are grown, those by which they are succeeded the following season, are generally still larger. This amelioration or increase of fertility, has been attributed to different causes: as the prevention of evaporation from the soil, by the shade produced by such large crops; the putrefaction of various vegetable matters, which may be more abundant after such large crops, taking place more completely and more effectually under such circumstances; and lastly, to the repeated pulverisation and aëration that is produced by the different hoeings.

But in whatever manner this effect may be produced, as it is constantly found, that land is in a better condition, and when turned up, in a more friable and mellow state after such crops as are large, than those that are poor and light; it is of course evident, that if ground can be covered with such smothering crops of the fallow kind, or those that will admit of being well worked by means of the plough or hoe, so as to keep it clean and free from the growth of useless plants, it may be more beneficial to the farmer, not only for the sake of the immediate crop, but also on account of the increase of manure produced by such means, and the advantageous condition of the land, for the reception of such crops as may be afterwards cultivated upon it. In these different views, as well as those that have been already mentioned, the introduction of green crops of some sort or other, should probably be more frequently attempted on all description of soils; and it would

seem probable that on the stiff and heavy kinds of soil, from its having been found that in many well cultivated districts, by the growing of proper leguminous crops in drills or rows, so as to admit of the ground between their being frequently stirred, either by means of the plough or hoe, such kinds of land, after they have been once well cleared by a summer fallow, may be kept perfectly clean, and in suitable tilth for the production of good grain crops, they may be much more generally had recourse to than has commonly been the case: but on such sorts of land, great attention is necessary to introduce such kinds of green crops as are adapted to them, and thus, as little injury as possible, be done by the treading of animals, in feeding them upon or taking them from the ground. But as neither the full effects of pulverisation or aëration, nor the complete destruction of root weeds, can, in some cases, be so perfectly obtained, by the cultivation of fallow crops, as by making summer fallows, it may be advantageous to have recourse to them occasionally, with these intentions, on the heavy and more wet sorts of land, as well as those that have been injured, by improper methods of cropping.

H. N.

ON IMPLEMENTS OF HUSBANDRY.

(Continued from page 105.)

THE land should be once ploughed over before this instrument be used. If it has lain a summer fallow, the usual way is to work it twice over with the extirpator, about two inches deep at the first, and about four inches deep and crosswise, at the second time, which, with running a harrow once over, will not only effectually destroy all the weeds, but also render it very fine and ready for the drill or sowing. Lands being ploughed in autumn, and intended for spring crops, are by this instrument prepared for seed, better than by any other method ever tried in this country, it will work in all lands, and may be handled by any person that knows how to manage a plough. It will easily plough one acre per hour, and not in the least distress the horses. A farmer assured me, that he would with it and three horses, work up sixty acres a week; and that a person having the extirpator, may with only three horses, farm as much land as without it would require six horses. It is not customary in this part of the country to work oxen, but I am convinced it will answer the same purposes, where oxen are used. It is adviseable to work all lands that are overrun with weeds twice over; some lands may possibly require three times dressing; some time should elapse for the weeds that are cut, to die, before it is ploughed a second time. It is now adopted by most farmers in this neigh-

bourhood; and its great utility will be attested by every person that has used it. Many, whose prejudice against every novelty, induced them at first to ridicule the idea, are now as warm in praising it, and acknowledge it to be the greatest improvement in agriculture they ever witnessed.

The above account of this most promising tool, is given in the words of the Rev. Mr. Lewis, of Thorndon, to whom the public is much indebted for the information. It ought to be remembered to the honor of the British Clergy, that many amongst them have taken great pains to acquire, both a scientific and practical knowledge of agriculture; a most laudable and appropriate employment of their leisure hours. A plate of this instrument is given in Mr. Young's Suffolk, whither, the reader is referred for full satisfaction; but an idea may be caught from the following particulars represented in the plate.

The tines and shares are fixed in an oblong wooden frame.

The shares eight inches broad, and nine inches long, fixed to stalks rising ten inches, distance between them eleven inches.

The hind ledge six feet long, four inches square.

The fore ledge, five and an half feet long, four inches square, distance of the ledges twelve inches. The beam seven feet long; its elevation three feet three inches. Two handles

The instrument fixed to the wheels, &c. of a common plough, and made to go shallow or deep, in the same manner.

Harrows.—In some parts of Essex they draw their harrows upon a frame with wheels; the harrow being moveable higher or lower, as may be desired. They are the invention of Mr. Knight, Farmer, of Great Barfield, Essex; who in consequence received from the Society of Arts a premium of fifteen guineas.

The united harrow and roller, is the late invention of Mr. Benjamin Young, of the Isle of Wight, Farmer; the price of the implement about fifteen or twenty guineas. The report of its utility is very good in the island, where, it has with two horses, rolled and harrowed in twelve acres of turnip seed in eight hours; going only once over the land, but performing the work excellently, and making the saving of a man and horse.

Rollers.—In Kent, the common rolls nine feet long, and from fourteen to twenty inches diameter, cost from three to ten pounds; for their stiff lands, they use stone rolls of twelve or fourteen pounds price. In Staffordshire, large, heavy cast iron rollers, from one to two tons weight; also a common roller, constructed of two pieces instead of one, cut through, as it were, and hung with gudgeons in the middle, the advantage of which is, that in turning it is less liable to root up the

corn, and may be formed of two short pieces instead of one longer.

Four-rowed, duck-footed Drag.—Mr. Graburn, of Barton, in Lincolnshire, has for four years past tried it with success, dragging in barley and oats. After ploughing the turnip-fed land once, instead of a second earth, scuffled the seed in with Cook's scufflers, upon ninety acres, and the crop as good as any. One man and three horses did eight acres a day, a mile from home; which strength would have done but one acre, in ploughing and harrowing; but he thinks the drags much better, and has dragged-in 150 acres, with his four-rowed duck-footed drag, sown with seeds, and the land as clean under them as his neighbour's, who put in with ploughing. This year, he has tried it with turnips, on sixteen acres ploughed twice, and worked with drags, one in winter, and one in spring. Three of the lands were managed with the plough, and had extra earths; the turnips dragged, were better than where ploughed, and he has determined in future to follow this method.

Drill Roller.—This tool, invented in Norfolk, gains ground in Suffolk. Its object is to save the expence of dibbling, by making (with cast iron rings which surround the roller) little channels, four inches and an half asunder, across a clover-ley after ploughing; the seed wheat is then sown broad-cast and covered by a bush harrow. For light soils that require pressing it is a very good implement, but inferior to dibbling. It is used to pulverize fallows on stiff lands in a dry season, in which it is incomparably effective, more than any spiky roller.

Next to the above implement may be properly introduced, another of similar intent, the Kentish striking plough, which is generally employed in that county for striking out seed furrows or channels ten inches and an half apart. Team, two horses at length, and two men, turning alternately to right and left as with the turnwrest plough. To draw the seams equidistant and parallel, the inside wheel is kept in the outside furrow; the seams being made three or four inches deep. Day's work three acres.

Drill ploughs, are made and used in various parts of the kingdom; they shed and cover the seed which is completed by rolling. The common drill barrow for sowing a single row at a time, is adapted to all grains or seeds. A machine of this kind on a simple construction, that would at once deliver with accuracy, into a number of drills at the required distance, is perhaps, still to be sought. The drill machine of Mr. Westward, of Deal, price 14*l.* 10*s.* for setting in seven rows at a time, each seven inches apart, and any required quan-

tity per acre of wheat, barley, oats, peas, tares, &c. is recommended as the best extant, by Mr. Boys, of Kent; our chief drilling county. This plough is drawn by two horses abreast in a double pair of shafts, is very simple in construction, and not liable to get out of order.

Horse-hoe. The account of an expanding one for all breadths, is to be found in Mr. Amos's Treatise on the drill husbandry; this has proved in Lincolnshire, to be a most useful and effective instrument.

Chaff cutter, Cooks; a man and boy cut with it 100 quarters a week. This implement fixed to a large wheel, turned by a galloway or ass, cuts 50 quarters a day. Nailors cuts 3 qrs. an hour with two men, price 10*l.* 10*s.* To these may be added, Lester's very ingenious and simple chaff cutter, not only equal, but superior to any other hitherto invented, as it does equally as much work as any other machine, and the chaff is cut so perfectly and clean, as not to need sifting.

Sward Dresser, useful for meadows and pastures: it includes a scarificator with a bush of thorns, and cuts to any depth; drawn by two horses, carrying the breadth of five feet, in use at Brotherltoft, Lincolnshire.

A hay cutter in the form of a spade, straight and sharp at the point, and upon both sides, which performs the work with much more ease and expedition than the common hay knife; has been introduced into practice by Mr. Ecclestone, of Yorkshire.

Wheat stubble rakes used in Kent, of oak, ten feet long, and very heavy with iron teeth, fourteen inches in length and five apart, beam five inches by four, drawn by two horses. Price 2*l.* 2*s.*

Implements and Appendages to a hop ground. Every hop plantation of four or five acres, requires an oast about sixteen feet square, which, built substantially with the requisite stowage room, costs from 150*l.* to 200*l.* This is furnished with a dozen picking baskets, at 5*s.* 6*d.* each.—A good scale beam with scales and weights 5*l.*—A Shim made with a frame like a wheel barrow, 2*l.* 2*s.*—A harrow drawn by one horse, with a small wheel in front to go round at the ends of the plantation, with a pair of handles to be held by the men who follows, in order to keep it from bruising the binds, 1*l.* 15*s.*—A large iron peeler to make holes in the land for the poles, 6*s.* or 7*s.*—A hop-dog to wrench up the poles, &c. 5*s.*

Newly invented hand-hoes of Mr. Mark Duckett, jun. for doing more work, and at less expence than with common ones, 1*l.* 10*s.*

A vast variety of harrows has been recommended within the last twenty or thirty years, many of them improving considerably upon the ancient form. The nature of the land to

be tilled, will in general direct as to the size and weight of the harrows. The prime considerations are, that the tines stand not straight, but obliquely pointing forward, or as they call it in the north, raked, that they all incline one way, and that they intersect and cross each other. This will completely do away the objection which Tull made to the blunt and straight tines of the harrows and drags of his day, which did but collect the clods to form perpetual obstructions.

Rollers intended to do great execution, are generally made to cover too great an extent of ground, by which in fact, their pressure is diminished by being received and supported from too many points; the weight to be effective, should lie in a narrow compass. Perhaps, the old fashioned octagonal rollers were more effectual than the plain circular ones in crushing clods, but upon tenacious soils, a fluted or a spiky roller should ever be at hand.

On wheel carriages. It ought to be remembered, that from symmetry and due proportion, (the materials being good,) result greater strength and durability, than from mere bulk and weight, which have an increased tendency towards their own destruction. The western or Berkshire waggon, wider than common, with the lock-holes closed up, is beyond all comparison, the handsomest, the most capacious, the lightest, and most durable in England, price 25*l*. On a large farm where single horse carts are not in use, a broad wheeled double waggon is very convenient, as are also light broad-wheeled dung carts. The Kentish hutches, or large close bodied carts, calculated for carrying corn, coals, or sand, may be very suitable in many situations. A small cart to be drawn either by hand, or by an ass or galloway, is extremely convenient for light jobs about the premises or in the neighbourhood: in such an one, much dung may be collected at leisure times.

Of the great saving to be made by one horse carts there can be no doubt, since it has been experimentally proved, more weight may be drawn by six horses in so many carts, than by eight in a large waggon, and one man may manage two carts in the country. There are some peculiar inconveniences attending upon this plan, which are sufficiently obvious; and notwithstanding, it has been for years past so warmly recommended, it never has, nor probably ever will be, relished by the generality of Farmers.

OBSERVATIONS ON THE GRAND JUNCTION CANAL.

(Continued from p. 138.)

THE towns near the line from Uxbridge to Wendover, as well as the numerous corn and paper mills in the same direction, have already felt some convenience from the

canal; and, in a few years, the principal part of their carriage may be expected to be executed by it; though, only a few months ago, much neglect or prejudice appeared to be shewn to this kind of conveyance.

It is in those districts only where canals have been for some years established, that their utility is fairly and completely acknowledged; for in Lancashire, Cheshire, Staffordshire, or Warwickshire, a frost of two or three weeks continuance is more regretted by its shutting up their canals, than on many other accounts.

But if the corn millers near Uxbridge have slighted this accommodation, the copper work in that vicinity has experienced its use.

The great rock of flint and chalk, near this part of the line, deserves noticing. The former being an article of prime necessity to the potteries; and the latter situated very conveniently for converting into lime or whiting, for the use of the metropolis.

The town of Rickmansworth, being farther from London, and more out of the course of the public roads, will experience more advantages than Uxbridge, and become a market of greater consequence than it has yet been.

The first branch proceeding northward, that has at all been publicly mentioned, was one to Chesham, but relinquished, from not being deemed of sufficient consequence. The time may come when the utility of collateral branches will be so completely acknowledged as to resume this and others, which it would now be deemed ridiculous to even hint at. But the next branch, that to

WATFORD AND ST. ALBAN'S,

Is certainly of much greater moment. Here, in addition to those conveniences that are in common to all countries, the bringing both cheaper and more commodiously coke for their great maltings, must be mentioned; as well as carrying their malt and grain to London. St. Alban's will, no doubt, become the point from which a great and rich tract of country to the east will get supplied with coals and north country goods. Yet, from the circuitous route, compared with the direct road to London, it may never do so great a part of the general correspondence, as will be the case from many other places.

This branch, as well as that last mentioned, will bring water into the lower levels.

The Aldenham Reservoir near this branch, is very properly about to be enlarged and perfectly secured. This is a great object, enabling the Company to return for the use of the mills, in dry seasons, whatever water they may take from their streams. The town of Watford on this line will become

a point of considerable consequence, whence the populous vicinity of Stanmore, Edgeware, &c. will naturally look for many of the conveniences of life, and the market, trade and population of the town itself cannot fail to increase.

Several wharfs along the main line have already been established, and those at Hendon-bridge, King's Langley, &c. have done a considerable share of business, but particularly that at Two Waters. The large and commodious timber-yard erected here, shews plainly the idea its spirited proprietors has of the convenience of this spot, and the probability of the great quantity of business that promises to be done in that line.

The neighbouring town of Hemel Hempstead might easily have a branch made to it, if ever thought worth the expence.

Berkhamstead, being situate so completely on the line, will, perhaps, be as much benefited as any other place. The immediate situation of some corn mills hereon, and their absolute connexion with the canal, will probably soon teach others, if possible, to get the same advantage; and point out to millers that having a canal from, and into which they can load by a crane, is one of the principal things to be desired, rather than dreaded. As a canal must always keep a sufficient depth of water, it appears that the mill is much more likely to rob the canal, than that the canal should rob the mill. The canal is also here made very ornamental.

Having ascended nearly 400 feet from the level of the Thames, we arrive a few miles north of this town at the

SUMMIT LEVEL.

And by about three miles of deep cutting, some of which exceeds 30 feet, the canal is made to divide that chain of high ground which crosses several counties from east to west; and which probably deterred the late ingenious Mr. Brindley from thinking of conducting a water communication with London, by any route more to the eastward than by the course of the Charwell, and then by the Thames: nor perhaps but few ever imagined it could have at all been accomplished without a tunnel. The inconveniences of these are so well known, that it is matter of triumph a tunnel has been avoided, although the expence can have been but little lessened by the method adopted.

The exertions to secure these great banks, it is hoped, will prove successful; but no opportunity ought to be omitted of lessening the probability of their slipping at the breaking of frosts, or being washed down by heavy rains, in removing and easing the most dangerous parts.

The branch to Wendover is on the same level with the Summit, and is doubly advantageous on account of its trade and *water*. The great *spring* here must have afforded a prodigious quantity of water indeed, being almost the only re-

source the canal has yet had during the late dry seasons, and also when the leaky state of many of the lower levels called for more than an ordinary supply from the Summit. Leaky places have been found on the Summit itself, which it is hoped are now carefully stopped.

The lately published report speaks of other reservoirs (besides the great new reservoir now nearly finished and supplied by copious springs, with the immense fire engine to raise 30 or more locks of water per diem into the summit), to be made near or on the gade. But as the very existence of the canal, at least its utility, depends on an ample supply of water here, and as its enemies are magnifying every accidental deficiency, a few observations, it is hoped will be excused, even if from an imperfect knowledge of the country, they should, in some instances, be found a little incorrect.

This chain of hills as before observed, stretches nearly from east to west, and that the canal crosses it where it is lowest: also that although from the form and nature of the ground, it is in general but ill adapted for making large reservoirs and sufficiently water-tight; yet it is very probable some eligible spots, though only small ones, may on a careful examination be found. Is it not possible to skirt these hills to the east and west both on the north and south sides, and thereby secure all the water the earth naturally supplies? The rapid rise of the ground to the west on the south side does not promise so well as that to the east of the south side; but to the east on the north side of this range, a catch-drain seems capable of being carried for several miles, and to effectually secure a very great supply indeed. But what is the valley between the canal and Tring, as to its eligibility for a reservoir? Is there no spring or stream to the south or west of Wendover on a level sufficiently high to be conducted into the summit?

In few situations will the reciprocal exchange of commodities be more sensibly perceived than at Wendover, and along that branch. They will here exchange their beech and other underwood for a more durable substitute, the Staffordshire coals. No country can want manure more than this: nay, from elevated spots above the canal, heaps of London manure in almost every form have already been seen for miles together. Hay, clover, and grain, in increasing quantities for the London market are the natural consequence.

The branch to the populous town of Aylesbury has been proposed to be changed for a rail-way, as it would have drawn water. This seems very judicious, securing as great advantages to that town and the country beyond it, as the nature of things will permit. The point where this rail road commences cannot fail becoming of considerable importance.

From the sterile nature of these hills, the making any of

the above-mentioned catch-drains navigable, would operate in as great a degree to the advantage of such districts as the branch to Wendover does. That on the south side towards the east at the point where it would cross the road from Leighton to London, must of course become a wharf of consequence, and the further eastward it is carried, the more water would be caught, and its utility as a feeder, in proportion increased. That on the north side to the east where it crosses the same road, would become a point of still greater importance; but when extended to the great road between Hockliffe and Dunstable, will answer all the purposes of the once projected line to the bottom of Chalk Hill, and yet bring water to the summit. An advantage superior to any little circuitous route as to all communication with the north, especially as this tract for every object connected with the metropolis would, in as great proportion, be shortened.

Most proprietors may say, how can any one suppose the business of these branches will ever answer the expence? That has never been asserted; but if plenty of water is not secured on the summit, where is the use of the canal? The disappointment of the two last summers to the commercial world in general has much hurt the credit of the concern. Nor can carriers be expected to sink great capitals in vessels, warehouses, &c. if they are every summer to experience three or four months of entire interruption; and even to risk finding their vessels frost-bound the instant the canal has recovered water sufficient to swim a loaded boat, from the long time it requires to fill an exhausted canal with small resources. If, although the business promised to be done by these branches appears trifling, yet if they effectually secure plenty of water without the expence of raising it, and the agriculture of such large districts of very poor land is much improved at the same time, the mere pointing out this mode of supply, it may be expected will be excused even by those, that will not allow its propriety.

As these hills also so completely abound with chalk, and its use as a manure is daily becoming more generally acknowledged, may not this become one of the greatest articles of carriage, and that to a very considerable distance? As a substitute for lime, or a change instead of it for once, may have many advantages. So the giving even the possibility of procuring a dressing of peat, lime, or marle, or any thing besides their own chalk would be a benefit to these hills beyond calculation, and which nothing but a cheap water carriage seems capable of affording them. The expence of chalk and peat principally consists in the carriage, as where they exist, it is often in such quantities as to be of little value to those spots, though so desirable at a distance.

The enlarging the reservoir near Aston Clinton, for the use of the mills below, (the mere improving the construction of some water wheels, will enable many mills to execute the same business with much less water,) or an engine to raise the waters from it, may be very proper. For though fire engines are a continual expence, and subject to many accidents, it is not intended to deprecate this mode of supply. There appears no great difficulty in finding a considerable supply not far from the summit towards Berkhamstead, and likewise below Marsworth to the north, where the ground seems better adapted for reservoirs: but in both these, it would require considerable lifting.

Many suppose a narrow set of locks would be very great advantage both in expediting business and saving water: and an ingenious trader has proposed a few shallow locks, not more than three or four feet deep near the summit, for the same purpose. But perhaps the period may arrive when the mere increase of business, will call for some improvement of this kind. In every point of view an ample supply of water is the first requisite.

Leighton Buzzard is the first town of any consequence on the line north of the summit, and though it has long enjoyed a large market, it must still be much benefitted by this conveyance. This place had till now about 25 miles of land carriage for coal of any kind; and is situated out of the tract of the more public roads.

The soil of the country now becomes various, sometimes stiff clay, and at others very sandy. The distance is now too great for London manure, by land, or lime out of Northamptonshire, but the canal will bring both, and from the length of the conveyance is to this tract of still increasing importance.

The *Fuller's Earth* that exists in large quantities near Fenny Stratford, deserve noticing, as the quantity that may be used is likely to be multiplied many times from the facility given to its distribution.

Fenny Stratford where the canal crosses the great road, must rapidly increase in importance, both as a depot in case of accident, or stoppage in either direction, or from its convenient situation in supplying a large district of country.

(To be Continued.)

For the Agricultural Magazine.

ON THE CULTIVATION OF ARABLE LAND.

IN explaining the methods of management that are necessary in the cultivation of arable lands, in order to afford a suitable state of soil and nourishment for the growth of grain

or other crops, it will be proper to consider them as relating to grounds that have not yet been brought under the plough, and such as have been already in the state of tillage.

Removing obstructions to tillage.—In the first there are frequently various operations to be performed, such as the removing of stones, the eradicating of wood, both of the tree and shrub kind, the destruction of different sorts of plants of the aquatic and other denominations, and the removal of such degrees of wetness as may be injurious, before the business of ploughing or loosening the mould of the soil can be properly carried on. The stones that are an obstruction in this view, are principally either such as are met with in a loose state in the ground on its being ploughed, or such as are fixed in the soil and incapable of being removed without much labour and difficulty. Some of these last are often of such a size as to present themselves upon the surface, and cause much land to be lost, by their not permitting the plough to come near them. Those which are concealed below the surface, are however, the most detrimental; as the implements are frequently destroyed, and much inconvenience experienced from them before they can be perceived by the ploughman, though he may be perfectly attentive to the circumstance.

In such soils as contain no concealed stones of the rocky kind, as is the case in most of the alluvial and deep ones, if any inconvenience be sustained by the small ones, that appear on the surface after harrowing, as may be the case at the time of their being sown with artificial grasses or laid down to permanent grass from the obstruction that may be given to the scythe, in such instances they may be picked off by the hand before rolling; or forcing them into the soil, by heavy rolling alone, may occasionally be sufficient. When the former practice is adopted, they should not, however, as is the custom in many districts, be collected into heaps, or laid all along the furrows, as in these ways they are afterwards liable to afford much obstruction, or to become again dispersed over the land. They ought always to be completely removed: the best season for doing which, is, when the land is in summer tillage; as under such circumstances the business can be performed with the greatest convenience and in the most effectual manner. In lands that are of the more wet kinds, they may however be collected into heaps of rather a large size, in order to be taken away afterwards during a dry season. The business of picking the stones is mostly performed by women and children, and the lands are cleaned in this way with much greater expedition than can easily be supposed, though an instance or two has been mentioned in which injury was supposed to have been sustained by the removal of

the small stones from the ground from the great evaporation of moisture that must necessarily take place, and the want of heat and shelter for the crops during the early stages of their growth, it is probable that much less inconvenience will be suffered in this way than from the obstruction constantly afforded by the stones in the tillage of the land, and the loss caused by the great extent of surface which they occupy in many cases where they are numerous.

Where the stones are fast in the ground, of a large size, and appear above the surface of the land, the best practice is to dig them completely out of the earth, after they have been blown to pieces by means of gun-powder; but if they be small, it will be unnecessary to blast them, as they may be raised after being dug round without that expence, by splitting them with iron wedges, or breaking them with heavy hammers, and then conveying them off the land in some kind of strong low carriage, on which they may be easily lifted by means of an instrument of the following description: * It consists of three legs made of any sort of hard wood, each about four inches in thickness, six inches in breadth, and fourteen feet in length; their thinnest sides being placed inward to give them greater strength. Their feet when placed on the ground form an equilateral triangle, and their three tops being fixed together by an iron bolt that passes through each of them; two of the legs are fastened to each by a windlass and three cross bars. It has two pulleys with an iron hook, two inches in circumference attached to each, and one or more iron chains to pass round the stone while on the ground below its greatest diameter, or where it begins to become narrow; this consists of rounded links about three inches long, and of the thickness of a man's little finger with a hook at one end, that may be put into any of the links towards the other end, in order that it may embrace the stone exactly, and be of the same circumference, when the stone touches the earth. Short chains of the same kind, the hooks of which are fixed into the links of the surrounding chain, are to be attached all round the stone, with their corresponding links fixed on the hook of the lower pulley. The whole of the rope must be of the same thickness with the two great hooks, two inches in circumference.

The machine being thus prepared, two men, by turning the handles of the windlass round, and the assistance of the carter with a lever, force the stone up, and hold it at the proper height to be loaded by backing the carriage under it.

The method of sinking large pits close to the stones for concealing them in, is an expedient that ought but seldom to be

* See Agricultural Report of Perthshire.

adopted, on account of the danger that attends it, and the total loss of the stone. But where the stones are principally concealed below the surface it will be necessary to discover their situation, either by going over the land with some sort of sharp instrument that can be readily thrust down into the ground, or to mark their situations during the time of ploughing, and afterwards to remove them. In some cases, as where the stones are extremely numerous, and the price of labour cheap, it may be a more advantageous and economical method to prepare the land by means of the spade than the plough.

In all cases, land should be as much as possible cleared from such stones as retard or prevent the operation of the plough, before the business of tillage be undertaken; as without due attention in this respect, great loss may be sustained, by the breaking of implements, and the great delay that must take place in the work.

Besides, in many situations and circumstances, there may be great inducements to have this sort of work performed, as where hollow or underdraining becomes necessary; the rounder sorts of stones may be beneficially employed in filling them, while those that are of a larger and more flat form, may be of use in the construction of offices or other buildings, and sometimes even for the purpose of fences. As this work is frequently attended with an heavy expence, it may be proper, where there are no leases, or they are of short duration, to have it undertaken jointly between the land proprietor and the farmer; the former being at the expence of blasting the stones; and the latter, at that of their removal from the ground.

In the clearing of lands from wood, different methods must be pursued according to the nature of the wood with which they are covered. Where there are large trees of the timber kind, they should be completely grubbed up at a proper season of the year; care be taken that the roots be as much as possible removed. In eradicating such trees as have their roots penetrating downwards to some depth, as the oak, it may frequently be unnecessary, after the earth has been well removed from about them, to cut more than a few of the strongest lateral roots, the rest giving way by pulling at the top of the tree by means of a rope. But in such as have their roots shooting laterally near to the surface of the ground, as the elm, the roots must be almost wholly removed before they can be got up, and the business of ploughing be properly carried on. In cases of this sort, trenching by means of the spade, and forcing the roots up by a pick-axe, is recommended by some as the most effectual method, as in this way the roots are not merely removed, but the land put into the most

convenient form for future cultivation. Besides, when such portions of brushwood as may have been collected upon the surface of the land, have been cut at the same time and consumed with the roots, some advantage may be gained in the way of manure by spreading the ashes over the ground, and in some measure, repay the additional expence that may have been incurred by the trenching. But in most cases, especially where the price of labour is high, the business may be well enough accomplished by a strong plough with a suitable strength of team. After the trees, and as many of the roots of these shrubby plants as possible, have been removed during the time of the first ploughing up, the land may be sown with some sort of crop to which it may be the best adapted, and after that has been taken off, be more completely cleared by repeated ploughings and harrowings, both lengthways and across the ridges, until the whole are extirpated. Or when there is time, this may be done before any crop is put into the soil, which in many cases is a method to be preferred, as a good or full crop of any kind can seldom be expected, till the ground has been perfectly freed from the roots of such trees and plants, on account of their more increased tendency under such circumstances to shoot up and vegetate afresh, and thereby injure it by the great space which they occupy, and the shade they produce, or where their roots decay in the soil, by rendering it too light and open for the growth of most sorts of crops.

As different sorts of plants prefer different soils—the broom and bramble kind, being found to grow with the greatest luxuriance, on such as are of the more dry and sandy or gravelly qualities; the furze on such as are dry, but which approach the nature of loam or clay; the thorn kinds, on those that are of a more mellow and less adhesive description; and the low willows, on such as possess considerable degrees of moisture. It may be possible in many instances, to derive great advantages in the removal of such obstructions to cultivation, by applying such manures or other substances, as may produce changes and alterations in the texture or general nature of the soils, and thus lessen their tendency to the production of such plants. In this view, the application of clayey marle or composts, with peat, earth, and lime, or loamy and clayey earths and lime, farm yard manure or composts, made with it and mould, night soil with good vegetable earth, sand, and various other materials, according to the circumstances of the soil, the nature of the plants, and the convenience of the substances in respect to their application, may be proper. The removal of superficial moisture may also be useful in the same way, in many cases.

In cases where such sorts of shrubs have become of considerable size, the general method of proceeding is to cut them down as close as possible to the surface of the ground, and afterwards to dig round them, and grub them up in the manner that the larger trees are cleared. With furze, it is sometimes customary to set fire to them, in order to uncover their stems before any attempt is made to grub them up; but this is a practice that ought to be as much as possible avoided, from the danger that may attend it, and the loss of the furze.

As it has been found from experience, that such lands as have been attempted to be cleared from brushy plants of this kind, especially those of broom and furze, are extremely liable, from the roots and seeds that may be left in the soil, to have them come up again in great abundance after they have been laid down to grass; it should be a practice, to keep lands that are much disposed to their productions in the state of tillage, for such a length of time as may be fully sufficient by the various means of cultivation, and the application and blending of lime and other suitable manures with them, to have them as completely removed as possible; and that when they are restored to the state of grass, to have them pastured as much as can be conveniently done with sheep. It has, indeed, been observed by Mr. Headrick in his communications to the Board of Agriculture, that if whins, or shrubs of any kind, are once grubbed up in the way that has been described, sheep being then admitted to pasture, would prevent them from ever growing again from the small roots left in the ground. But still more would this experiment he conceives be likely to prove successful, if the ground were completely fallowed, and every root that appeared removed. The land being then well limed and manured, might be subjected to a course of cropping, and be sown down with grass seeds without a crop. As soon as the grass affords a safe bite, he would admit sheep, and not wait for a crop of hay. It is presumed that sheep would destroy the tender shoot of every shrub as fast as it rose, and keep the ground ever after clear.

If however this practice should not be sufficient to prevent the shrubs from sending up fresh shoots, the best method would be to have again immediate recourse to the plough, and such other means as have been recommended above, as by delay, the plants may become too strong to be turned under by the plough.

Heath, which is a sort of plant that for the most part infests those soils that are of a moory nature, and in which there is but a small proportion of vegetable matter, on account of there being few leaves or other vegetable products, except the heath itself, to be converted into mould; the recrements of this plant are not found to afford improvements to the soil on

which it grows, as is experienced from the decay of many more saccharine, mucilaginous, and juicy plants. Hence, it probably is, that the heathy soils are mostly so poor and unfriendly to the growth of useful crops, whether of the grain, leguminous, or grass kinds. In bringing this sort of land into the state of tillage, as it has been found from repeated trials, that where the heath is turned down without being removed or completely destroyed, it keeps the furrow slices from coming into intimate contact with each other, so as that by confining and retaining a due degree of moisture, the decomposition and decay of the heath may be quickly effected, and the soil of course, in too open and loose a state for the growth of almost any crop. It should be cut as close to the surface of the ground as it can be conveniently done; or what is probably a better practice, removed, by paring off a very thin slice of the surface ground with it, and then burnt. In the dry spring months, it is indeed capable in many cases where it grows high and close, of being burned without the labour and expence of either of those operations; but in all cases where fire is employed, as the staple of soils of this kind is seldom deep, care should be taken that the combustion be not carried to too great a height, so as to be injurious by consuming the small portion of vegetable material that may be present. The operation of cutting heath may be most conveniently performed, by an implement of the scythe kind, only shorter and stronger.

The heath having been removed in some of these ways, lime in its most active state, is to be applied in large proportions, either over the whole of the surface, before the ground is ploughed, or upon the soil when turned up. The former method is however to be preferred, as coming more intimately in contact with the vegetable matters; where it can be procured, Lime should always be put on in large proportions, on first bringing Heathy or moory soils into the state of cultivation, as little savings in this respect in the first instance, may often prove disadvantageous in the end. Mr. Headrick observes, that experience has proved, that the addition of lime to the ashes of the pared surface, operates much more beneficially than if spread in any other manner: and that the larger the quantity, the greater the effect. The chemical effect both in neutralizing the acids found in all these soils, and also in destroying the roots left of the spontaneous growth, depending in some measure on the effect taking place suddenly. It has been known that eight chaldrons an acre laid on at once, have converted a moor into meadow, worth twenty-five shillings an acre; but the same moor under one chaldron per acre per annum for eight years, has not been worth seven shillings and six-pence an acre. The effect of lime on all soils

long in cultivation is he thinks problematical, and does not answer the expence in one case in ten; but in new moor lands the effect is prodigious, and hardly credible: laid on ling mountains without tillage, without paring, or other operation, than merely cutting the ling and spreading the lime, such moors have been changed from one shilling to twenty shillings per acre; but the quantity has been from fifteen to twenty chaldrons per acre. In order that the calcareous matter may be as intimately as possible blended with the particles of the soil, and thereby exert its effects most extensively, it should be applied over the land in the most perfect state of pulverisation, and as equally as it is possible to spread it out. Where the lime is applied with sufficient attention to these circumstances, it generally destroys the heath in a short time. After the lime has been applied, especially where the surface has been pared off and consumed by fire, the ploughing should only be slight, so as to blend it and the ashes with the soil, but not to place them at a great depth below the surface.

Where heathy or moory land has a degree of surface wetness, and is not so much overrun with the plant, as to prevent its being employed as pasture, it may sometimes be brought into cultivation, by merely removing the superabundant moisture by proper drains, burning the heath in the spring months when suitably dry; and afterwards pasturing it closely with sheep, so as to keep it from seeding; in this way it may in time be wholly removed.

When this sort of ground has been broken down and pulverised as much as possible by the operations of ploughing and harrowing, it should always, where not too stiff, be sown with some sort of close, luxuriant green crop, such as turnips, peas, and tares, that may be fed off with sheep, but where it has a sour quality, and is more stiff, clayey, and adhesive, those plants that strike more deeply into the soil, as beans, Swedish turnips, buck-wheat, rye, and oats of the grey kind. In many cases too, rape, peas, clover, and vetches, will succeed in a very beneficial manner. But as the principal intention in most cases of breaking up this sort of land, is that of bringing it in a cheap and expeditious manner to a suitable condition after a grain crop or two, for growing grass; the green crops of whatever description they may be, should be consumed by animals upon the ground, especially where the soil is such as to admit them without injury, where the soil is not wet, stiff, and poachy to admit of this practice. The crops may be drawn or cut, and converted to the feeding of cattle in the house.* It is well observed in Young's Annals, Vol. 20, page 371, that proper cropping is the key stone of the arch, and that

* See an Essay on the advantage of carting crops in our 37th Number.

if it be not attended to with great care, the whole of an improvement may turn out disadvantageous. There is however another method of improving these soils by such crops, which is that of turning them down when in their most succulent states, by the plough. This may be a judicious and useful mode on the drier and more sandy descriptions of these soils, where they may readily undergo putrefaction and decay; but in the more tenacious sort, and where there is a sour disposition that would greatly retard the process, it would seem to be much less beneficial than that of feeding them off by some sort of live stock.

(To be Continued.)

ON REARING TURKIES.

To the Editor of the Agricultural Magazine.

SIR,

YOUR Correspondent L. R. of Colshill, in your Magazine for October last, page 206, says, that he frequently loses the greatest part of his Turkies in rearing them. I wish to mention one thing to him which may be of consequence in this point, and that is, that there is a weed generally about farm houses which is ever fatal to young turkies who get among it, and that is the *Nettle*; for whenever they are stung by it about the head and neck, the pain it causes, is too violent for this tender animal to support, and consequently it must perish. This may be one reason of the loss he complains of.

Wheaton Aston.

J. D.

ENUMERATION OF PATENTS LATELY ENROLLED.

1803, **R**OBERT WILSON of the parish of St. Saviour, Jan. 20. Southwark, Plasterer; for an apparatus for the purpose of stopping ungovernable horses.

—, 20. Joseph Jacob, of Greek-street, of the parish of St. Ann, Soho, Middlesex, Coach-maker; for a metal box for the axle-trees of wheels, carriages, mills, engines, and other machines.

—, 29. George Matcham, of the city of Bath, Esquire; for a principle or mechanical power for raising great weights, in preventing ships from sinking, in raising ships when sunk, in rendering ships which are disproportioned to shallow-water capable of entering rivers, passing bars, or shoals, or otherwise moving in shallow water; and for a variety of other useful purposes.

—, 29. Edward Stephens, of the city of Dublin, for a furnace, stove, or fire place, which can conveniently be applied to the burning of lime-stone, at the same time that it is used for the heating of all manner of corn-kilns, evaporating-stoves, and drying-houses.

CRITICAL CATALOGUE.

- I. *Proceedings of the Sussex Agricultural Society from its Institution, to 1798 inclusive, together with Engravings of the Prize Cattle for that Year, from Drawings made by actual Admeasurement. 2d. Edition. By Edmund Scott, Miniature Painter, of Brighthelmstone.*

THE present work exhibits an account of the transactions of a most respectable Agricultural Society, together with the portraits, said to be very correct, of the prize cattle and sheep of the county; one of the most justly celebrated for the excellence of its live flock. It is dedicated to the President of the Institution, Lord Egremont, a nobleman, eminent for his skill in rural affairs, and general philanthropy. The British Nation has ever ranked first in the science of cattle improvement, or rather, such knowledge, in any regular or systematic view, has been hitherto confined to this country. If our immense consumption, and the late and even present enormous prices of flesh-meat be considered, no wonder need be excited by our most strenuous efforts to increase *the quantity of its growth per acre*, for that is the great object of improvement, quality coming in the second place. To suppose that a considerable number of the most experienced men, in almost every part of a country, shall, through a course of years, bend their united efforts, to improve in any art or science, without success, or that they shall become retrograde in proportion to their industry, is happily to judge contrary to the whole tenor of human experience. Not only cattle science, but rural economics in general, have proceeded *passibus equis*, in the march toward perfection; and if high prices and scarcity are quoted, in contravention of the idea of improvement, it is but fair to retort, in the sense of a well-known writer on the subject, that the old system would actually have starved a population like the present.

For the information of the general reader, we will premise a brief statement of the cattle question as it stands at present; nor ought we to be ashamed to confess our information on a subject which has engaged the attention of the philosophic and enlightened of both ancient and modern times. The general quality of the cattle-flesh of the British Islands has ever been excellent, doubtless from the nutritive properties of the natural herbage of the soil. Our stock has besides had the advantage of gradual amelioration from every foreign source, in the course of many centuries. Yet some races, which seem to have retained their original purity, are equal to any improved by foreign crosses. In the general run, as might be expected, there was much room for improvement. The Midland and some of the Northern counties of England, produced animals of immense bulk, their flesh coarse, with the excrescence, as it may well be termed, of long and heavy limbs. They were necessarily slow in feeding, seldom indeed thoroughly fattened, and at too much cost. On the other hand, some districts were burdened with a mean, diminutive, ill-formed stock, still less productive than the large. The prevalent ideas, however, were, that all merit consists in magnitude of size, to which were added certain vague and unfounded notions, derived from the veterinary writers of antiquity. Somewhat later than the middle of the last

century, the old system of long legs, huge bones, and splatter feet, began to succumb to the improvements of the well-known Robert Bakewell. This shrewd observer discovered that productiveness in weight, depended on regularity of shape, of which long legs and protruding bones were a breach; that rotundity of form, or the barrel shape, with small bones, were most conducive to penguification or the taken on of fat; that in animal procreation, *like produces like*; and lastly, in controversion of all precedent, theory, or practice, that the nearest affinity, premising thorough form, was no reasonable objection, in the sexual conjunction of animals. Big with this theory, which is in part true, and precisely so far useful, and fired with all the ardour of discovery, our systematic cattle-breeder sallied forth, and ransacked his whole country, and part of the opposite continent, in order to a selection of animals for his purpose. By crossing and intermixing these, through a long and tedious variety of descents, with the perseverance of a German mathematician, and at an immense expence, he raised varieties of neat cattle, sheep, and pigs, which became highly celebrated throughout every part of Britain, and have remained permanent to the present hour. Determined to leave no class of farming stock untouched, he attempted also an improvement of the breed of horses, in which also he succeeded to a certain degree.

But in the ardour of his zeal, Bakewell overleaped the *certi denique fines*, without which nothing can be permanently right. His positions and corollaries, that, as small bones conduce to fattening, the bones of animals cannot be too small, and that, as fat is the most valuable substance, the carcase cannot be too fat, are not intirely on unison with the stomachs, or the reason of the majority, whose decision, in the case, must be final. In consequence, all the dishley varieties of live stock, have been inferior to our best unaltered breeds, the form of which may be presumed nearer to nature's standard, and which will produce lean as well as fat, and fat in full proportion to lean. In truth, public opinion, and the prize decisions have confirmed these sentiments, and if we may rely on the authority of the New Farmers Calendar, in which work we believe, the first systematic attack was made on Bakewell's principles, the chief merit of his varieties consists in their excellence, as *crosses*, for those breeds which are defective in substance, and too slow in taking on fat; in that respect, their utility is indisputable. It is probable, however, that a majority of our graziers adhere to Bakewell's opinions, although the public, and the butchers in the metropolis, are making heavy complaints of the immense daily waste from over fattened meat. In opposition to this system of excessive fattening, Lord Somerville gives annual prizes, in London, for bullocks and sheep, distinguished for abundance of natural flesh, thoroughly, but moderately fattened.

To return to Mr. Scott's plates—the utility of delineations of the form of our varieties of cattle, as the ground of a comparative experience, is unquestionable; and granting the drawings before us to be moderate, they answer perfectly the chief intent, by exhibiting the true character of Suffex neat cattle, and South-down sheep; the latter are very handsomely executed. There are six of the former, and four plates of the latter, with an admeasurement of the exact dimensions of the individual animals.

The introduction is in a style sufficiently lively for the subject; indeed, nothing partaking of the proverbial heaviness of the ox. After descanting technically, from authority, on breeding, giving the particular points, by which, what is really the best stock in the kingdom, may be distinguished from the worst, in respect to the bull and the ram; and detailing certain parts of Sussex practice, the author takes up a very important part of the pretensions of the institution, in the following words: "The applause, perhaps, of an humble, any more than of an uninformed individual, will contribute nothing towards the advancement of *the cause of indigent industry.*" But the opportunity which offers itself of bestowing that applause, is a temptation too strong to be resisted. In these few humble sheets, which an uncommon patronage of the great may perhaps make public, and the acknowledged utility of the subject, may possibly make worth preserving; the compiler cannot do otherwise, than record his congratulations to the county of Sussex, on the possession of an institution, of which a prominent object is, the encouragement and reward of industry and good conduct, in those whose industry and good conduct constitute much of, and contribute most to the wealth and prosperity of every country. Philanthropy, the characteristic, more than ever, the peculiar characteristic of Englishmen, never yet selected an object, on which to exercise its liberality, most worthy of, and more in want of it, than the indigent and inoffensive husbandman, to whose daily labours the nation owes its daily bread.

The transactions of the Society are included in 24 pages, giving an account of the premiums bestowed on meritorious labourers, and the prizes allowed to superior stock. In the former, a subject which touches the generous affections; we find four husbandmen, the first of whom had served 57, the second 55, the third 43, and the fourth 40 years! The peculiar appellations in Sussex of cattle and sheep, of different ages, are given in conclusion. It appears that the business of this Society is very judiciously conducted, and Mr. Scott's publication may furnish very good precedents for patriotic country gentlemen, who are about to form a new Society.

II. *Systematisches Handbuch der theoretisch—praktischen Veterinair Wissenschaft &c. Systematic Manual of the Veterinary Art, theoretical and practical.* By F. Pilger, Vol. 1 and 2, 8vo. 1048 p. and 476 p. 4 rxd. 4 gr.

THIS is a truly valuable work on veterinary medicine, for the use of economists, farmers, those who have the management of stables, &c.

The first Volume is divided into three sections, the first of which treats of the horse, the sheep, the pig, the dog, the ox, and the cat. The second contains the zootomy and zoophyiology, and the third, the natural regimen of these domestic animals.

The second volume is divided into five sections, treating on the manner of rearing horses, horned cattle, sheep, pigs, and of general pathology, &c.

First section, of horses; 1. Of the manner of rearing horses, and of stables in general. 2. Of places proper for stables. 3. On the management of pastures, and the number of horses they are capable of sup-

porting. 4. Of the plants which horses chuse in preference. The author mentions 135 different kinds. 5. Of the buildings requisite for a breeding establishment, and of their construction. 6. Of the number of persons necessary for attending them. 7. Of the choice of horses. 8. Of the crossing of breeds. 9. Of copulation. On this head the author confines himself to the four following questions: How old should the stallion be? and the mare? how many mares should a stallion be permitted to cover? and to what age is he capable of being employed? 10 and 11. Of the method of treatment of the stallion and mare during coition. 12. Of pregnant mares. 13 and 14. Of foaling. 15. Of the attentions requisite to be paid to the mare and her foal. 16. Of the method of rearing foals till the age of four years. 17. Of the choice of horses for use. 18. Of the manner of taking care of the feet of foals.

Second Section: of horned cattle. 1. Of the choice of bulls and cows for breeding. 2. Of copulation. 3. Of the birth of calves, and the manner of rearing them. 4. Of the castration of calves.

Third Section: Of sheep; of the choice of, and method of rearing them.

Fourth Section: of pigs; of the manner of breeding, and the commerce carried on with them.

Fifth Section: General Pathology. The theory of excitation serves as the basis to the whole system. 1. Of the division of diseases. 2. Of ætiology. 3. Of the causes of diseases. 4. Of nosology, or the actual difference of diseases. 5. Physiologic and pathologic signs. 6. Of pathologic signs in particular. 7. Of the signs that may be collected from various external parts of the body.

Sixth Section: of general Therapeutics. Of the treatment of disease.

Seventh Section: *Materia medica*; 1. of nourishing and invigorating medicines; 2. of bitter medicines and provocatives; 3. of relaxing medicines; 4. of purgatives and diuretics; 5. of diaphoretics, absorbents and worm medicines; 6. of external medicines. The other practical memoirs will follow in the third volume.

III. *Sammlung von Abhandlungen für Thierärzte und Oekonomen; A collection of Memoirs for Veterinary Practitioners and Economists; translated from the Danish, of E. Viborg. Vol. 3. 336 pages, 8vo. with a plate, 1 rxd.*

THE merit of this collection is established; it only remains for us to state the different pieces of which this volume is composed.

1. An ordinance relative to the epidemic disease which prevailed in the duchies of Slewick and Holstein; 2. experiments made by M. Viborg, and Dr. Scheele, on the injection of various remedies into the veins of animals; 3. on the effects of several plants, and on the animals of the north, by A. C. Rafn and Viborg; 4. experiments made in the Danish veterinary school, tending to prove that the small-pox is a disease common to man and beasts, by Viborg; 5. trials of inoculation performed on men and animals by the same; 6. trials of purgatives on horses, by Florman. These purgatives were martial vitriol, jalap, mercury, senna, colocynth, common salt, and of which the latter only had a purgative effect; 7. fragment of a letter from professor Abilgaard, to M. Viborg, on the manner of rearing sheep

in Spain; 8. on umbilical and scrotal hernia in horses, with their radical cure, by Viborg; 9. of the prejudicial effects of butter-milk on horses, by the same; 10. of the glanders and other diseases of horses by the same. In the appendix to this volume, is a list of the medicines mentioned in the work.

IV. *Handbuch für deutsche Landwirthe, &c. Manual for German Cultivators, or the Three Kingdoms of Nature explained in a popular manner, by J. E. Löwe. Vol. 1. 320 pages, 8vo. 1rxd. 6 gr.*

THE aim of this manual is to facilitate to the farmer, an acquaintance with the useful part of natural history, and to present information in an order calculated to impress it on his memory. This work certainly contains some useful matter, but it may be perceived that the author has not in every instance, made himself master of the subjects of which he treats, and that he has not consulted with sufficient attention, the authors that have written on natural history. We shall give a brief sketch of the plan he has adopted.

The mineral kingdom is divided into four classes, comprehending the earths, salts, inflammable minerals, and metals. The earths are divided into calcareous, argillaceous, and siliceous; the salts into acids, alkalis and neutrals. The inflammable minerals, are amber, naphtha, turf, and sulphur. After treating of the metals, the author describes the different qualities of earths for agriculture, rural labours, &c.

In speaking of the animal kingdom, the author asserts, that the colour of animals has no influence on their strength and health; Camper and Weiss on the contrary, have demonstrated that white animals are less capable of resisting diseases than others. This kingdom is divided into six classes; mammiferous animals; animals that have grinders; beasts of prey; animals that nibble their food; ruminating animals; and those that have teeth like a horse. The birds are divided into 6 classes; amphibious animals into three; fishes into four; insects into 7; worms into 4, &c.

The author flatters himself that he has described the most interesting animals of Germany; his work however, exhibits many vacancies which might have been filled with a little more attention. The succeeding volume will contain the vegetable kingdom.

V. *Sammlung kleiner Abhandlungen aus dem Gebiet der ökonomischen Wissenschaften; A Collection of Memoirs on Rural and Domestic Economy, by L. G. Medicus, Vol. 1. 215 pages, 8vo. 14 gr.*

THIS useful collection consists of eight memoirs. The first treats of the detrimental influence of sheep walks, of rearing sheep, and of agriculture in general; 2. observations on the *trifolium flexuosum* of Jacquin, and its use in agriculture; 3. botanical description of the *pinus cambra* Linn. 4. description of a wood of beech trees of 425 acres, on the mountains of Odenwald, where the author found beeches of an extraordinary height and magnitude; 5. evaluation of the surface and produce of part of a plantation of acacias, formed at Mannheim, and cut down in the year 1801; 6. instances of trees thrown down and rooted up. These two memoirs, as well as the third, have already appeared in the new *Archives of Forests*. In the 7th memoir, the author treats of the so-called *Aaron's rod*, described by Wildungen

in his *Forester's port-folio* of 1802; and in the 8th of the double envelopes or capsules of the seed of certain kinds of pines. This last is particularly interesting to botanists.

VI. *La Richesse des Cultivateurs; The Farmer's riches; or a Dialogue between Benjamin Fachere and Richard Treffe, on the Culture of Clover, Lucern and Saintfoin; translated from the German; intended as a manual for the Farmers on both shores of the Rhine, 8vo, 2 fr.*

THE incalculable advantages, resulting to agriculture from the formation of artificial meadows, both by employing the land condemned to lie fallow for a whole year by the ancient routine, as well as by the multiplication of the animals which are supplied by these meadows with wholesome and abundant food, have been developed in many excellent works. But none has appeared in a form so well adapted to every class of farmers, as that here announced. The beneficial effects of its publication in the department of the Moselle, induced the editor to print a very great number of copies, in order to extend through the other departments of the Republic, the happy results which the method here pointed out has met with in Germany.

HISTORY.

National Transactions.

GREAT BRITAIN.

THE political horizon has assumed a very different aspect since our last. The resumption of a war establishment and the bustle and activity of naval and military preparation through our ports and the kingdom in general, could not have been resorted to by Ministers upon any trivial or common occasion. Their firmness, vigour, and spirit, together with the promptitude evinced by the country, in preparing to repel any unjust aggression, to resist any unreasonable demand, or to enforce any just proposition, are the surest guarantee for the maintenance of that peace of which every friend to his country would regret the interruption.

His Majesty's Message and the subsequent proceedings of Parliament will more amply detail the causes of these preparations.

Whilst the question of peace or war remains undecided, government does not in the smallest degree relax the activity of its measures for the security of the country. The utmost alertness prevails in our ports and dock-yards, and several eminent officers, it is said, have been appointed to commands.

The principal appointments are stated to be, Admiral Cornwallis to command the Channel fleet, with Lord Gardener, next in command; Lord Keith, to the Plymouth station, to superintend the naval equipments; Sir Sidney Smith, to the command of a squadron of frigates; Sir James Saumarez is to act at Sheerness; and Lord Nelson, either on the North Sea or Mediterranean station.

The intelligence brought by the *Imogene* of our still retaining the Cape of Good Hope will no doubt have considerable influence on the negotiations that are on foot, and will probably tend to bring them to a speedier issue. The dispatches ordering that colony to be retained, were landed about four hours previous to its intended evacuation by the British troops, and its consequent surrender to the Dutch.

Major General Stuart, who commanded at Alexandria, has arrived in Lon-

don. The evacuation of that place by the British troops took place as soon as possible after the arrangement in favour of the Beys had been concluded by Lord Elgin. The troops, it is said, have gone to Malta.

We shall now present our usual sketch of the proceedings of the Parliament of the United Kingdom.

HOUSE OF COMMONS.—*Monday Feb. 21.*—Mr. Elliott gave notice, that his honourable friend, Dr. Lawrence, was unable, from ill-health, to make his promised motion respecting Captain D'Anvergne, but that he would make it as soon as his health would permit.

The Secretary at War gave notice that he should, on a future day, call the attention of the House to a publication, entitled "The Army List," which he considered as injurious to the public service.

A petition was presented from the Bristol merchants, praying for aid to improve that harbour.

Tuesday.—Lord Euston rose and moved, that an humble Address be presented to his Majesty, to offer the heartfelt congratulations of this House on the detection and failure of an atrocious and treasonable conspiracy, directed against his Majesty's sacred person and government. To assure his Majesty in our own name, and in that of all the Commons of the United Kingdom of Great Britain and Ireland, of the perfect and invariable attachment of a loyal and grateful people, and of our fixed determination to support and maintain that form of government under which it is our glory and happiness to live, and to transmit it, unchanged and unimpaired to our descendants.

Lord Boyle then rose and seconded the Address, which was agreed to *nem. con.*

The House having gone into a Committee on the Mutiny Bill, the Secretary at War stated, that he had several amendments to propose, the first was, for checking a very criminal practice, which he lamented to say had been too prevalent in the army, namely, desertion. He meant to propose, that Courts Martial should be deprived of the power of sending deserters abroad to serve the king, but in cases where sentence of death shall be necessary, then his Majesty shall have the power of transporting offenders as felons, thereby commuting the punishment of death into that of transportation for life. His second amendment declared, that any person harbouring a deserter from the regulars shall forfeit 100*l.* and from the militia, be liable to the penalty of 20*l.* or six months imprisonment for each offence. The third, related to the pay of soldiers confined for debt, or under conviction for civil offence. The fourth, was declaratory of the length a waggon or cart, used upon a march, shall go, and the rate by which the proprietor of such vehicle shall be paid. The fifth, was removing doubts respecting troops on a march not being liable to pay toll; and the last amendment was, authorizing summary process against all persons who might purchase oats, hay, or straw, from dragoons. He concluded by moving these amendments, which were severally agreed to.

Wednesday.—The House having resolved itself into a Committee to consider his Majesty's Message respecting the Prince of Wales.

The Chancellor of the Exchequer, after having entered very fully into the privations his Royal Highness had experienced, now for nearly eight years, and considering that to enable him to support that degree of dignity and splendour which, from his elevated situation, he was entitled to, and in the maintenance of which every man, who was a friend to his country, had a deep and constitutional interest, moved "That it be an instruction to the Committee, to grant to his Majesty the yearly sum of 60,000*l.* out of the Consolidated Fund, to take place and be computed from the 5th of Jan. 1803, and to continue till the 5th of July, 1806, to be applied to the use of his Royal Highness the Prince of Wales, for the support of his dignity, &c." which produced a debate of such length, that our limits will not admit giving even an outline, the principal speakers were, the Solicitor General, Mr. Sheridan, the Chancellor of the Exchequer, Mr. Fox, and Mr. Banks; which

terminated in the motion for an addition of 60,000*l.* per annum being carried *nem. con.*

Monday Feb. 28.—Mr. Tyrwhitt presented a communication from his Royal Highness the Prince of Wales; stating, that the Prince has felt, with the most sincere and affectionate gratitude, the gracious purpose of his Majesty in recommending his present situation to the consideration of Parliament. That the Prince deems it incumbent on him to express his warmest acknowledgments for the liberality of Parliament. With respect to the Prince's claim to an account of the revenues which accrued from the Duchy of Cornwall from 1762 to 1783, however strong his confidence in the validity of his claim; a confidence fortified by the greatest legal authorities; yet, as he trusts that, through the gracious interposition of his Majesty, and the liberality of Parliament, he shall be enabled otherwise to provide for those demands on his justice, which alone induced him to assert his right, he now cheerfully relinquishes his suit, and has directed his law officers to forego all further proceedings.

Mr. Sheridan moved, that his Royal Highness's Message be entered on the Journals.—Ordered.

Tuesday, Feb. 29.—Leave was given to bring in a bill to regulate his Majesty's marine force while on shore. The Chancellor of the Exchequer brought up a bill for enabling his Majesty to grant the sum 60,000*l.* annually, from the consolidated fund, to his Royal Highness the Prince of Wales, and for repealing so much of an act of the 35th of his Majesty, as directed the application of 13,000*l.* from the revenues of Cornwall to the liquidation of his Royal Highness's debts.—Read a first time.

Wednesday, March 2.—The House in a Committee of Supply, the Chancellor of the Exchequer moved that 1,032,151*l.* 4*s.* 8*d.* be granted for the purpose of defraying the charges of the army extraordinaries, from the 25th December, 1801, to the 24th December, 1802. Agreed to.—The Prince of Wales's annuity bill was read a second time, and the mutiny bill a third time and passed.

Friday, March 4. A very long debate took place, on the motion of Mr. Calcraft, for a Committee to enquire into the embarrassments of the Prince of Wales, and into the most effectual means of relieving them as speedily as possible. The motion was supported by Mr. Erskine, Mr. Fuller, Mr. Tierney, Sir W. W. Wynn, Sir W. Geary, Mr. Fox, Mr. Sheridan, and several others; and opposed by Sir Richard Buxton, (who moved the previous question) Mr. Curwen, Mr. H. Lascelles, the Chancellor of the Exchequer, Lord Hawkesbury, and Lord Castlereagh. The ground of opposition was, that it was receding from the principle laid down by Parliament, and that every part of the proceedings which had led to the proposition that had lately been unanimously adopted by the House, was unreservedly communicated to his Royal Highness, and had been honoured with his unequivocal approbation. On a division there appeared, for the previous question 184, against it 139; majority 45. In the course of the debate it was stated, that the motion was brought forward without the knowledge of the Prince, and that his Highness did not sanction any further discussion.

Tuesday, March 8.—The Chancellor of the Exchequer brought down the following

MESSAGE FROM HIS MAJESTY :

“ GEORGE R.

“ His Majesty thinks it necessary to acquaint the House of Commons, that, as very considerable military preparations are carrying on in the ports of France and Holland, he has judged it expedient to adopt additional measures of precaution for the security of his dominions. Though the preparations to which his Majesty refers, are avowedly directed to colonial service, yet, as discussions of great importance are now subsisting between his Majesty and the French Government, the result of which must at present be uncertain, his Majesty is induced to make this communication to his faithful Commons, in

the full persuasion that, whilst they partake of his Majesty's earnest and unvarying solicitude for the continuance of peace, he may rely, with perfect confidence, on their public spirit and liberality, to enable his Majesty to adopt such measures as circumstances may appear to require, for supporting the honour of his Crown, and the essential interests of his people.

“G. R.”

The Chancellor of the Exchequer then moved, that the House should, tomorrow morning, take this message into consideration.

Wednesday, March 9.—The Chancellor of the Exchequer moved the order of the day for taking into consideration his Majesty's message; which having been read, Mr. Addington said, “I rise for the purpose of proposing an address of thanks to his Majesty for his gracious message of yesterday.

Thursday, March 10.—Mr. Addington brought down a message from his Majesty, stating that his Majesty, in compliance with the powers vested in him by an act of the last session of Parliament, had resolved to call out and embody the whole or a certain part of the militia, &c.

The message having been read by the Speaker, the Secretary at War moved an address to his Majesty, thanking him for this communication. The motion was put and carried *nem. con.*

Friday, March 11.—The House, in a Committee of Supply, Mr. Garthshore moved, that 10,000 men be employed in the sea service of Great Britain, for ten lunar months, including 2400 marines: the motion was carried *nem. con.* and the several sums necessary for the maintenance and pay of seamen for ten lunar months were voted.

Monday, March 14.—Mr. Byng brought up a Bill for granting additional allowances to Coroners, which was read a first time.

The House went into a Committee on the East India accounts, when Lord Castlereagh, in a long and eloquent speech, presented a statement of the present and probable state of the Company's affairs at the expiration of their charter in the year 1813.

The Report of the Committee of Supply for granting 10,000 seamen for the service of the Navy, was brought up and agreed to.

Tuesday, March 15.—The Secretary at war brought up a bill, for making provision for the families of militia men, drawn to serve in the militia.

Wednesday, March 16.—Mr. Addington rose to move for a Committee, to enquire into the charges on the civil list; and to report; which was ordered accordingly.

Friday, March 18.—The Bill enabling the proprietors of the Grand Junction Canal to raise money for the purpose of carrying the Canal to the London Dock at Wapping, was read a third time and passed.

FRANCE.—Under the article of Great Britain, we have already noticed the grounds of the jealousy of the British government, of the First Consul's projects. The measures adopted by England, have prevented the sailing of the expedition destined for Louisiana, and the preparations for embarking the troops have been abandoned.

An expedition for India sailed on the 7th of March, from Brest. The vessels that compose it are the *Marengo*, of the line, and the frigates *Semillante*, *L'Atalante*, *La Belle Poule*, and the transport *La Cote D'Or*. De-caen is appointed Captain General, and Admiral Linois has the command of the squadron.

Two frigates have been dispatched from Toulon to cruize before Algiers, and to prevent the Corsairs of that port from injuring the French commerce. Another frigate is preparing for the same service. The Dey of Algiers it is known, has allowed two months to the agent of the Republic to quit his states; but for what reason he has resolved on this measure, we are not acquainted.

Decrees have been issued by the First Consul, prohibiting the exportation

of specie of all kinds, and of articles manufactured in gold and silver. These measures have been caused by the late influx of cash from the Republic into England. Several tons have lately been sent from Calais to Dover.

A general statement of the finances of the Republic has been published, by which it is made to appear, that the total receipts amount to 589,500,000 francs, and the expenditure, including the interest of the public debt, to 581,300,000, leaving a surplus in the treasury of eight millions, about 350,000*l.* sterling.

It is said, that 17 sail of the line are getting ready with all possible expedition in the inner road of Brest. There was a requisition at Cherbourg for men, and the officers sent them off from that and the neighbouring places, for Brest, with the greatest expedition. Similar activity is said to prevail at Rochfort, L'Orient, and indeed in all the French ports.

The Porte has nominated Galib Effendi, its resident Ambassador at Paris.

TURKEY.—By dispatches received from Lord Elgin at Constantinople, dated January 15, 1803, it appears that the differences which had subsisted between the Sublime Porte and the Beys of Egypt, have been satisfactorily arranged through the mediation of his Lordship.

Lord Elgin has left Constantinople, and is on his return to England. Before his departure, the Grand Seigneur presented him with a sabre richly set with diamonds, of the value of 100,000 piastres. Helikewise sent on board his ship, several chests full of Oriental and Turkish rarities, intended partly for the King of England, and partly for Lord Elgin. The value of all these presents is estimated at 600,000 piastres.

On the same day that Lord Elgin left the Turkish capital, General Brune, the ambassador from the French Republic arrived there. The French accounts state his reception to have been highly flattering, and that all the commercial relations of the French, have resumed their ordinary course in the trading towns of the Levant.

Mr. Drummond, hitherto the British Minister at the Court of Naples, will replace Lord Elgin as the English Ambassador at Constantinople.

ITALY.—The Maltese Baili Thomasi has, it is said, accepted the dignity of Grand Master of Malta, for which he was originally proposed.

A new plan of political arrangement has gained credit on the continent, which would give to the King of Sardinia the city and principality of Sienna, containing two fifths of the kingdom of Etruria as an indemnity. The king of Etruria, according to this arrangement, would receive in exchange the duchy of Parma, not comprehending that of Placenza, which would be united to the Italian Republic. It is further added, that as a consideration for Parma, Spain is to cede to the Republic the sovereignty of the Floridas.

The Pope is engaged on a plan formed by Michael Angelo, for diverting the course of the Tiber, with a view of recovering those monuments of ancient art that are to be found in its channel.

HOLLAND.—The appearance of an approaching rupture between England and France, has occasioned great consternation in the commercial part of the Dutch nation, and has made a very unfavourable impression on the public funds.

The navigation and trade to Batavia, and the Dutch East and West Indies, is declared by government, to be free and open for all nations of the Republic under certain conditions.

GERMANY.—On the same day that the message of the King of Great Britain was sent to both Houses of Parliament, his Imperial Majesty signified to the Diet of the Empire, his refusal to accede to various dispositions made in the plan of indemnities; from whence some politicians have inferred that the two courts acted upon a previously concerted plan. There is not, however, any other foundation for such an idea.

On the 17th of February, his Royal Highness, Duke Ferdinand, took possession of the Archbishoprick of Saizburg. The Duke has also been proclaimed anew sovereign of Berchtolsgaden, and the other countries comprised in the Grand Duke of Tuscany's indemnities.

RUSSIA.—The First Consul of the French Republic has, it is said, signified to the Russian Ambassador, his willingness to comply with the wishes of his Imperial Majesty, not only with regard to the island of Malta, but also with respect to the demand of an adequate indemnity for the King of Sardinia. The Chief Consul has not, however, declared of what that indemnity is to consist; the different propositions made at first to the Court of Petersburg, have not been accepted.

Agriculture.

LORD SOMERVILLE'S ANNUAL SHOW OF CATTLE,

AT LANGHORN'S REPOSITORY,

ON MONDAY, FEBRUARY 28, 1803.

HIS Lordship's object is to give, annually, a prize of 30*l.* to the best, and 20*l.* to the second best yoke or pair of oxen, which shall have worked together in yoke or harness, for the space of three years previous to their being turned up to graze, aged from five to eight years, weighing from 100 to 160 stone, from 10 to 16 score per quarter, being the size best adapted to labour, and to the average of the markets. The number of days work to be certified, and that they have had no corn of any description.

His Lordship likewise offers another prize of 30*l.* in like proportion, to those who produce, in a fair store state, the best five ewes not in lamb, and not exceeding thirteen nor less than ten months old. Also, the five best fat wethers, four or six tooth sheep (or three years old), 20*l.* of any sort of clothing wool breed, whether horned or not.

The prizes to be determined by five umpires; and to be divided between the farmer and grazier who owned the oxen during the last twelve months. The prizes for sheep to the breeders. The two pair or yoke of oxen to which the premiums shall be adjudged, are not to be slaughtered, or knocked down with the axe, but laid or pitched, according to the usage of other countries, by pricking them in the spine.

The following Oxen were shewn for the prizes :

Two Hereford oxen, worked and grazed by his Majesty at Windsor.

Two Devons, worked by J. Hellings, grazed by H. Coles, fed upon grafs and hay only—Drift, when fat 140 miles.

Two Herefords, worked and grazed by Mr. Edmonds, fed upon grafs and hay only—Drift, when fat, 90 miles.

Two Kentish, worked and grazed by Mr. Millar.

Two Suffex, worked and grazed by Sir Thomas Carr.

Two Devons, worked and grazed by the Duke of Bedford.

Two Devons, worked by Lord Somerville, grazed by Mr. R. Hudson.

Four Glamorgans, grazed by Mr. Walker.

Two Devons, grazed by Mr. Martin Webber—Drift, when fat, 128 miles.

Two Herefords, worked by Mr. J. Skyrme, and grazed by Mr. Robert Byng.

Two Glamorgans, grazed by Mr. Waters.

The following Heifers were shewn :

One Suffex, belonging to Sir Thomas Carr.

One Devonshire, belonging to the Duke of Bedford.

One Kentish, belonging to Mr. Whittle; and two bulls belonging to the same gentleman.

The following fat sheep were shewn for the prize of 20l. five in each lot; two of them were killed, and their weight, &c. ascertained:

Five Wiltshire wethers, three years old, belonging to Christopher Chapman, of East Wickham, in Kent—No. 1, when alive, 239 lb.—No. 2, 244 lb.

Five South Down wethers, one year old, belonging to the Duke of Bedford, from Maulden Farm, Bedfordshire—No. 1, when alive, 127 lb.—No. 2, 158 lb.

Five South Down wethers, one year old, belonging to the Duke of Bedford, from Prislely Farm, near Woburn—No. 1, when alive, 166 lb.

Five Ryland wethers, two years old, belonging to Lord Somerville, fed on grafs and hay only—No. 1, when alive, 114 lb.—No. 2, 123 lb.

Five South Down wethers, two at two years old, and three one year olds, belonging to Mr. Edward Smith—No. 1, when alive, 133 lb.—No. 2, 143 lb.

Five South Down wethers, two years old, belonging to Mr. Ellman, of Suffex—No. 1, when alive, 147 lb.—No. 2, 164 lb.

The following Ewe Lambs, store stock, were shewn for the prize of 30l.

Five South Downs, belonging to Mr. Edward Smith.

Five ditto, belonging to Mr. Runciman, of Woburn.

Five Ryland's, belonging to Sir W. Clayton.

Five ditto, belonging to the Hon. W. Harcourt.

Five two-tooths Ryland and Spanish, belonging to Lord Somerville.

The judges appointed by his Lordship to determine on the prizes, were—the Hon. George Villiers, Mr. Eblworth, Mr. Harrison, Mr. Pestar, Mr. Lindsey, and Mr. Lloyd.

The following Noblemen and Gentlemen attended the meeting, viz.—The Duke of Bedford, Lord Sackville, Lord William Russell, Sir Thomas Carr, Mr. Byng, Mr. Westcar, Mr. Ellman, Mr. Runciman, and a great number of other Agriculturists and Breeders of Cattle, from various parts of the country.

On Tuesday morning the repository, in Barbican, was visited by a more numerous assemblage of amateurs and professional men, than attended them the preceding day; and, among the additional Nobility, we noticed his Grace the Duke of Montrose and the Marquis of Sligo.—Several Agricultural improvements were submitted to the judgment of the spectators, and among those most approved were, a Bruising Machine, a Churn, a Plough, and a harrow. At half past four the company adjourned to dine at the Freemasons' Tavern. Upwards of two hundred gentlemen sat down to dinner, and, at the removal of the cloth, the regulations for the ensuing Annual Meeting were distributed to the company, and afterwards a Prospectus of the approaching Sheep Shearing at Woburn, *which see at the conclusion of this article.*

The Chair was taken by Lord Somerville; his Lordship having on his right hand the Duke of Bedford, Lord Sackville, Lord William Russell, and Mr. Northey; and, on his left, the Marquis of Sligo, Lord Talbot, Mr. Coke, of Norfolk, Mr. Tyrwhitt, the Prince's Secretary, and many other distinguished persons. After the removal of the cloth, the usual toasts were drank. Lord Somerville then proceeded to mention the names of those gentlemen entitled to the prizes, and said, that the opinion of the judges was, that

In the 1st Class of Oxen—The Duke of Bedford, for the best yoke of Devonshire-bred Oxen, was entitled to the prize of 30l.

In the 2d Class of Oxen—Mr. Edward Smith, for the best yoke of Hereford-bred oxen, was entitled to the prize of 20l. But, at the same time, his Lordship observed, that as there was an idea that these oxen were overweighted according to the prize articles, then this prize would fall to Mr. Martin Webber, the next in succession.

In the 1st Class of Sheep, and the best pen of Ewe Hogs, Mr. Edward Smith, for his five South Downs, was entitled to the prize of 30l.

In the 2d Class, for the best fat wether, four or six tooth sheep, to the Duke of Bedford, 20l.

The prizes being distributed, Lord Somerville returned thanks to the competitors; after which, his Lordship said, that respecting the wool of the several sheep, the opinion of the best informed men was, that

	s.	d.
1st. Mr. Chapman's Wiltshire was worth	1	6 per lb.
2nd. Mr. Ellman's	1	11
3d. The Woburn	2	0
4th. The Morden	2	1
5th. Mr. Runciman's	2	1
6th. Mr. Smith's	2	2

His Lordship concluded with stating, that the wool, produced by the mixture of the Spanish and South Down, was so extremely profitable, from his own experience, as to double the fleece, and more than pay the landholder's rent. Several other instances were adduced, all which were corroborated by the ablest men in the wool trade.

Lord Somerville, to alleviate the disappointment of the unfortunate candidates, produced two silver cups, into each of which he put two names. The Marquis of Sligo drew one, and Lord Sackville another; and the elected two were, Mr. Millar and Mr. Byng, who each received the prize.

PROSPECTUS OF THE WOBURN SHEEP-SHEARING,
June 13, 1803.

MORNING.		EVENING.
Show of Leicester Rams	} Monday.	Sale of Leicester Ewes
		Show of Suffolk and Leicester Pigs
Show of South Down Rams	} Tuesday.	Leicester Rams let
Prize Wethers		Sale of Suffolk and Leicester Pigs
Prize Theaves	} Wednesday.	South Down Rams let
Prize Wethers, dead		Show of Hereford and Devon Cattle
Sale of South Down Ewes		
Implements	} Thursday.	Sale of Hereford and Devon Cattle, continued
Second show of Leicester Rams		Leicester Rams let.
Sale of Hereford and Devon Cattle		

Dulverton and Bampton Agricultural Society.

AT a Meeting held the 20th day of November, 1802.

The Right Hon. LORD PORCHESTER, President.

The following Premiums were agreed to be given:

On the first Saturday in April, 1803, at Dulverton.

For the best Heifer (not exceeding years old), with her calf, dropped year 1803, the breed and actual property of the member producing them	} A Silver Goblet.
For the second best ditto	
For the best boar, being the actual property of the member producing him, such boar to be kept by the claimant for six months after being shewn	1 1 0
	1 1 0

Whitsun Tuesday, in Bampton.

For the best four teeth Ram, the breed and actual property of the member producing him	} A Silver Goblet.
For the second best ditto	
To the best Sheep-shearer	0 10 6
To the second best ditto	0 5 0

At the General Meeting in Dulverton (on the Saturday next before the last Wednesday in November), being Dulverton Great Market.

For the best bull, not exceeding the age of three years, being the actual property of the member producing him, such bull to be kept by the claimant, until the 1st of June following	} A Silver Goblet.
For the second best ditto	1 1 0
To the cottager or occupier of a Farm not exceeding twenty acres, producing the greatest quantity of honey from his own hives, without destroying the bees	0 10 6
For the best half score of store ewes, being the breed and actual property of the member producing them	} A Silver Goblet.
For the second best ditto	1 1 0
For the best stallion (not exceeding seven years old) for Roadster's, that shall attend Dulverton market the ensuing season	1 1 0
To the husbandman subsisting by the day labour, who shall have brought up the greatest number of legitimate children to the age of nine years without any parochial relief (excepting binding out any such children), producing certificates of his honesty and good conduct, and also the number and ages of his children, as nearly as can be ascertained, from his master, the minister of his parish, and some of the parish officers	1 1 0
To the young man having served out the term of his apprenticeship under his parish indentures, who shall produce proofs of the greatest honesty, fidelity, and industry, during his apprenticeship (such claim to be made within twelve months after the expiration of his indenture)	0 10 6
To the young woman on terms similar to the last	0 10 6
To the young man who having served his apprenticeship under parish indentures shall immediately after the expiration of such apprenticeship, have continued to serve the same master for the greatest number of years, certificates as above to be delivered in by the claimant	0 10 6
To the young woman on terms similar to the last	0 10 6

The heifers, boars, rams, bulls, and sheep, to be produced in their respective markets by eleven o'clock in the forenoon, the sheep-shearing and other claims at twelve. The rams to be shewn in their coats, and shorn at Bampton. Seven days notice of intention to claim any of the above premiums to be given to
Mr. STERNE, Treasurer and Secretary,

On Tuesday last, the 15th current, by appointment of the Glasgow Farmer Society, a ploughing match took place on the Farm of Horfelet-hill, near this city, in the possession of Mr. James Sharp. Notwithstanding that the weather was unfavourable, twenty-three ploughs started. All the ploughmen gave general satisfaction, but the judges appointed the prizes to the following, viz.

- The first to Archibald Cross, farmer, Uddiston, Bothwell parish.
 - The second, to Archibald Millar, servant to Mr. George Burn, at Kepoch, Barony parish.
 - The third, to George Monteath, son of James Monteath, farmer at Balshagry, Govan parish.
 - And the fourth, to John Lothead, servant to William Lothead, farmer at Leggats-hill, Eastwood parish.
- After the match, Mr. Sharp entertained a number of the members and spectators, in his own house.

One of the spectators at the above match, was a gentleman from Ireland, employed by the Farmer's Society of Ireland, for purchasing farming utensils in this country; and who, in the warmest manner, expressed his approbation of the work, and of the horses employed.

PLOUGHING MATCH.—The annual ploughing match appointed by the Kilmarnock Farmers' Club, took place on Friday the 4th current, in a field near that town, belonging to Mr. Paterfon, farmer in Struthers. The severe frost during the night betwixt Thursday and Friday, prevented the ploughing till near mid-day, when eighteen competitors started, and notwithstanding the disadvantages from the severity of the weather, the judges declared that the whole was well executed, and adjudged the premiums in the following manner :

First prize to Alexander Halbert; 2d prize to James Wilson, servant to Alexander Guthrie, farmer in Holms of Kilmarnock; 3d prize to Hugh Wallace, servant to John Guthrie, in Grange of Kilmarnock.

This useful institution has continued about twelve years, and was the first establishment of the kind in the west country, during which period the example has been followed in different parts of the country, and it is expected will soon become general. As improvement in agriculture is of the first consideration to this country, in the progress of which all ranks of men are interested, institutions tending to diffuse a spirit of emulation amongst that class of men who are employed in the laborious part of husbandry, and their masters and employers in furnishing them with implements of the most approved kind, ought to be more generally encouraged; the above preferences being, in a great measure, as much owing to the superior construction of the ploughs, as to the steadiness of the horses, or the skill of the ploughmen, all of which were of the first class.

On Thursday the 10th instant, the Airdrie Agricultural Society decided their premiums for ploughing in a field belonging to Andrew Stirling, Esq. of Drumpelzier. Sixteen ploughs started. The whole of the work was remarkably well performed, and gave great satisfaction to a numerous concourse of spectators, many of whom were excellent judges. The prizes were adjudged as follows;—The first to John Anderson, servant with Colonel Baillie, of Cairnbrae; the second Charles Russel, also servant with Colonel Baillie; the third to William Russel, servant with Colonel Douglas, of Rosehall; the fourth to Charles Turnbull, servant with Henry Monteith, Esq. at Monkland.

On the 22d ult. a ploughing match took place on the estate of Garnkirk, and notwithstanding the weather proving unfavourable, fifteen competitors appeared on the field. The ploughing was in general well executed, and afforded much satisfaction. The judges appointed the prizes to the following ploughmen:—To Robert Dick, servant to John Hay, farmer, Coshnock-moor, two guineas;—To Hugh Watson, farmer, Leckethill, Garnkirk estate, one guinea and a half;—To William M'Caen, farmer, Lumlock, one guinea;—To Walker Graham, servant to Walter Watson, farmer, Hornhill, Grankirk Estate, half-a-guinea. The other competitors received five shillings each. The 1st, 2d, and 3d. had Wilkie of Uddieston's plough, the construction of which met with general approbation. After the match, a number of the Gentlemen and most respectable farmers dined at Garnkirk House, where many appropriate toasts were drank with much pleasure. In the course of the evening, Mr. Mackenzie, under whose immediate patronage this ploughing match took place, very properly observed the great benefit likely to be derived to agriculture, from an institution of this kind being made annual in that neighbourhood; which was unanimously approved of, and large subscriptions made for that laudable purpose.

The annual spring shew of cattle by the Farming Society, was held their Repository at St. Stephen's Green. A Great number of cattle, extraordinary for shape, size, or other qualities, were exhibited. A bullock of Mr. Critchley's (county of Wicklow) attracted, by his uncommon height and bulk, very great admiration: this creature is nearly six feet in height.

Two fine oxen of Mr. Latouche's were admired for their great beauty and fat.

Several hogs of enormous dimensions were shewn in the Riding-house. A number of curious poultry, with some improved implements of agriculture, formed part of the exhibition.

His Excellency, and a great number of the Nobility, attended at the Repository, and seemed highly gratified.

Mr. Fortescue's heifer shewn at the Repository, and to which a medal in the first class was adjudged, is without exception in symmetry, one of the most beautiful animals that has been seen for a long time. She was purchased by Keegan of Clarendon market.

NORFOLK AGRICULTURAL SOCIETY.

At a general meeting of this Society, held at the Market Cross, in Lynn, on Wednesday the 23d of February, Wm. Holte, Esq. in the chair. Letters were laid before the Society from very respectable houses in Scotland, stating, that associations of the landholders in that part of Great Britain had been formed, for the purpose of sustaining the prices of barley, the growth of that country; and for the more effectual means of doing so, they had agreed, that a petition should be presented to the present session of Parliament, the object of which is to reduce the last excise upon malt made in Scotland to one half of the same; and as an equivalent to the revenue, to lay a tax equal to 3s. per quarter, at least, upon all barleys imported from the south part of Great Britain into the ports of Scotland.

This Society having duly considered the same, is of opinion, that the granting of such a petition, (independent of its being a most flagrant breach of the articles of the Union), would be extremely prejudicial to the agricultural interests of South Britain, and of this county in particular, and as such ought to be opposed by the counties at large. Acting upon this principle, the Society has communicated the object of the letters abovementioned to the Members for this county, and the towns in it, together with its sentiments upon the measure, and has directed its Secretary to write to the several Agricultural Societies in this kingdom, in order to make the same known to them.

A LARGE HOG.—Mr. Phipps, Butcher, of Rottingdean, Sussex, has, perhaps, the largest and most extraordinary hog that ever was reared in this kingdom. In its present unfattened state, it is, by good judges, allowed to weigh one hundred stone. It measures in height between three and four feet, in girth eight feet, in length, from the point of the nose to the extremity of the tail, ten feet. This enormous hog was bred by Mr. Rickman, of Barcombe Mill, of whom it was purchased, when quite young, by Mr. John Smith, Butcher, and by him sold to Mr. Trill, Farmer, at Ovington, for fifteen pounds, who, after keeping it a few months, sold it to the present proprietor for *thirty-five pounds!* the price of a prime fat ox. Mr. Phipps takes great pride in this extraordinary animal, and intends to exhibit it fat, at the next Christmas Show of Cattle, at Smithfield, when it is expected it will weigh 150 stone.

A remarkably fat pig, of the Chinese admixture, was killed last week, at Dulverton, Somerset, by Mr. John Cooksley, which measured 86 inches high, 82 round the body, 54 round the chops, and weighed 645lbs.—upwards of 18lbs. per inch.

PLOUGHING MATCH,

At Terrenure, near Rathfarnham, two miles south of Dublin, on the 11th and 12th of March instant, the Farming Society of Ireland, will give the following premiums: First day, 11th March.

SWING PLOUGHS.—To the person who shall plough half a rood of land in the best manner, and with the least force, five inches deep, with one man and two horses, five guineas.

To ditto, the second best, three guineas.

To ditto, with one man and two oxen or heifers, five guineas.

To ditto, the second best, three guineas.

WHEEL PLOUGHS.—To the person who shall plough half a rood of land in the best manner, and with the least force, five inches deep, with one man and two horses, five guineas.

To ditto, the second best, three guineas.

To ditto, with one man and two oxen, or heifers, five guineas.

To ditto, the second best, three guineas.

IRISH PLOUGHS.—To the person who shall plough half a rood of land in the best manner, and with the least force, eight inches deep, with a man, a boy, and four horses, five guineas.

To ditto, the second best, three guineas.

To ditto, with four oxen or heifers, five guineas.

To ditto, the second best, three guineas.

Second Day's Ploughing 12th March.

To the person, having obtained a first premium in any class on the former day, who shall plough thirty perches of land in the best manner, the gold medal.

The Society will reward the Ploughmen in proportion to their merit.

The ploughing to begin each day at 11 o'clock.

By order,

Board-Room, Feb. 21, 1803.

JOHN HAMILTON, Sec.

The Vienna Court Gazette, of the 13th of February, contains the following article:

“Among the experiments in rural economy, which for their utility, merit publication, were distinguished those of Counsellor Holsmaistre, Director of the estates and Lordships of the Imperial family. This economist has, in his sheep-walks in Hungary, more than 24,000 sheep of the Spanish breed. As he had, of late years, lost many of them by the malady of the skin, which affects those animals, he determined to inoculate all his sheep with the *virus* of that malady. He was previously assured of the success and efficacy of vaccination. This experiment took place successively on 8000 lambs and 2000 sheep. None perished, and there were but a very few on whom the matter did not operate. M. Holsmaistre has again inoculated 1000 of these animals, and put them among other sheep disordered by this kind of small-pox. None were infected, notwithstanding that communication which would necessarily have been contagious, if the principle of the disorder had not been destroyed by inoculation.

Mr. Wm. Pugh, butcher, in Wakefield, killed a lamb of the Northumberland breed which was quite fat, and weighed from six to seven pounds per quarter.—Neither ewe nor lamb had any other food than grass, with a few turnips, and a little hay, during the time the ground was covered with snow, nor any other care than being sheltered from the severity of the weather. This is a proof that lamb may be produced for the table, without any extraordinary expence, at an earlier period than is generally attempted. It is true that the ewe was in good condition, having been brought to the fortnight fair to be sold with a lot of fat sheep, at the time she dropped her lamb, which was since Christmas: this might be one reason for the lamb thriving so well, but it is well known, that the Northumberland sheep are remarkable for being good breeders and good sucklers; and for size, make, and staple of wool, may vie with, and in hardiness of constitution, which is a material quality in this part of the country, they far exceed the so-much-boasted breeds of the southern counties.

On Friday last, a ewe sheep, belonging to Mr. Bellingham, of Borcham, yeaned five lambs, all of which are living.

A sow, the property of Mr. Steptoe, of Thatcham, at her first litter, had 18;—at her second, 20;—at her third, 25;—and at her last, within these few days, 22.

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CHERTSEY, MARCH 5.—At our fair, on Monday last, there was a good show of pigs, and cattle in general; and notwithstanding, the prices were lower than at the late preceding fairs, there were very few sold, most of the persons inclined to purchase being of opinion, that a greater reduction must soon take place, as the prices of all kinds of live stock are considerably higher than justice or necessity warrants. There was a very capital show of horses; those of the draught kind sold briskly, at high prices.

WINCHESTER, MARCH 7.—On Monday last commenced our Lent Fair, at which there was a good supply of cheese, which sold from 60s. to 70s. prime at 80s. per cwt. at which prices a large quantity remained unsold; which caused, on the second day, a reduction in the price of 12s. per cwt. A considerable quantity of bacon was sold, upon an average about 9d. per lb. Horses shewed well, but their prices being high they had a dull sale.

NORWICH, MARCH 9.—Downham (commonly called Winnould) Fair, on Thursday last, was more numerously attended than was ever before witnessed; there were many good horses, which sold readily at very high prices. Neat stock were rather flat, and in sheep little business was done.

At Dumfries fair there was a great show of horses; principally of the draft kind. Those that were good, fetched very high prices. A great number of Irish horses were likewise shewn; very few of which possessed either figure or action; but such as did, were readily bought up by the different dealers.

At Bristol fair, there was a great show of both fat and lean cattle, which fetched very high prices, especially the latter. Horses were numerous, but good ones excessively high in price.

At Shrewsbury fair, cattle, sheep, and pigs, sold at reduced prices; as did also cheese, of which a large quantity was brought for sale.

Manufactures and Useful Arts.

(Continued from page 146.)

PREMIUMS offered by the Trustees and Commissioners for Fisheries, Manufactures, and Improvements in Scotland.

20. For the 6 best pieces of cassimere of different colors, each piece to be under twenty yards long and 3-4ths broad, and not exceeding from 4s. to 5s. per yard in value	£.18
21. For the best 8 pieces of flannel in imitation of the Welch manufacture each piece not to be under twenty-five yards in length and 7-8ths in breadth, and not exceeding 2s. 6d. per yard in value	16
For the second best eight pieces ditto	8
22. For the best ten pieces of flannel in imitation of the Welch manufacture, each piece not to be under twenty-five yards in length, and 9-8ths in breadth, and not exceeding 1s. 8d. in value	14
For the second best ten pieces ditto	6
23. For the best ten pieces of common white wooled flannel, 7-8ths wide each piece not under twenty-five yards in length, and not to exceed 1s. 4d. per yard in value	12
For the second best 10 pieces ditto	5

The fourteen preceding articles to be manufactured entirely of Scottish wool, the swansdowns and cassimeres excepted, which may be made either of foreign or Scotch wool, and all of them dyed of various colors (except the flannels) and the articles 12, 13, 14, 15, and 16, all to be dyed in the wool. It is particularly recommended to the manufacturers to cause greater attention to be paid to the spinning of the yarn as they think there is a considerable deficiency in this part of the manufacture.

COTTON AND FANCY ARTICLES, &c.

24. For the best ten pieces of the most fashionable and elegant fancy muslin for ladies dresses, the yarn to be spun in Britain.

25. For the best ten pieces of muslin handkerchiefs in imitation of the Indian mullmull, to be woven in a 1600 reed, the yarn to be spun as above £18
26. For the best two dozen of shawls or scarfs for ladies wearing, plain or worked according to the fashion, the fabric to be in imitation of the Indian. 14
27. For the best two pieces of black or colored twilled sarfenets 5-8ths wide, each piece containing not less than 60 yards. 16
28. For the best two dozen fashionable silk handkerchiefs for ladies and gentlemen's wearing 12
29. For the best twelve pieces of white fustians for lining, each piece to contain 20 yards, to be half yd. broad, and not exceeding 1s. per yd. 10
30. For the best twelve pairs of fashionable leather gloves for ladies, sorted according to the taste of the manufacturer, each pair to have the private mark of the manufacturer put in the inside of the top of the right hand glove; so that when mixed for the sake of comparison, the gloves of the different competitors may be easily distinguished from each other: the whole put up in bundles of one dozen each, and each dozen to be bound with a narrow slip of white paper on which is to be distinctly marked the kind, and the invoice price of the dozen, and not to be either of foreign or home production 14
31. For the best twelve dozen pair of leather gloves for men, sorted according to the taste of the manufacturer. All to be put up, bound and marked in the same manner as the preceding article, and not exceeding the London price 14
32. For the best six dozen pairs of plain silk stockings manufactured upon a three needle silk frame of a full size for men, two dozen white, two dozen black, and two dozen colored; sorted and completely finished for sale; the price not to exceed the English wholesale price at the time. To be put up in bundles of one dozen each, to be bound in narrow slips of paper, on which is to be marked the invoice price 14
33. For the best six dozen of breeches pieces of full sizes and various colors, finished and dressed; one dozen of them silk, and the other five dozen of them worsted, either plain or ribbed, according to the fashion; the price not to exceed the English wholesale price at the time, and to have the usual marks denoting the number of threads 15
34. For the best sixteen double gros polished metal buttons, with regard to quality and patterns 10
- For the second best sixteen double gros ditto 5

PATTERNS FOR DIAPER LINEN.

35. To the person who shall invent and draw on design paper, the best pattern on the breadth of 20 designs, he being at liberty to put as many of the 20 designs into the body or border work as he shall think proper, the border to join properly, so as to make a distinct pattern in imitation of damask 4
- For the second best of the same 2
36. To the person who shall invent and draw on design paper, the best two patterns for diaper table linen, the drawing of each not to exceed three designs, and to be of a proportionable length, both patterns to be upon one piece of paper 2
- For the second best two patterns 1

The competitors will observe that whether they are successful or not in obtaining premiums, their goods will be sold to those who incline purchasing them; and for this purpose are to lie a few days after the preferences are determined; after which Mr. Thompson will account for the piece which is sold, and will return the remainder to any person having the proprietor's written authority to receive the same.

No person or company will be allowed to gain more than two of those premiums, and those for different articles. Nor will any person acting as a

journeyman or servant, be allowed to compete, but every competitor must actually be and have been in business on his own account prior to the date of this advertisement.

Every person or company that has in former years gained three full premiums under any of the articles mentioned and described as above, excepting for the carpeting, damasks, diapers, and the drawing diaper patterns, is debarred from competing upon that particular article.

The public meeting held at Manchester, upon the subject of the tax upon cotton wool, has named delegates to go to London. The trade at Preston have also sent delegates, and delegates are immediately proceed for London from Lancashire, Derbyshire, Yorkshire, and Nottinghamshire, interested in the cotton trade.

We have been favoured with the following facts connected with the duty upon cotton wool and illustrative of some of its effects :

The duty on cotton from Spain amounts to about 15 per cent. and the quantity imported since the peace (the duty operated then under the name of convoy duty) has been 350 bags.

The importation of cotton from the Levant was,

In the year 1800	_____	_____	10,849 bags.
In 1801	_____	_____	2,175 do.
In 1802, or since the peace only	—	—	4,169 do.

while the average annual importation into France from the port of Salonichi alone, is not less than 22,000 bags, besides what she draws from the rest of Greece, Cyprus, and Smyrna. Thus we may see, that though the tax has been imposed only a few years, yet it has marked its operations by almost excluding from the British market, the low cottons of the Mediterranean, Portugal, and Spain, so important in our manufacture of coarse and low priced goods.

From the colonies ceded by the peace we drew,

In the year 1800,	_____	_____	32,029 bags
In 1802,	_____	_____	31,763 do.

which amounted to one ninth part of our whole importation.

From Portugal we imported

In the year 1801,	_____	_____	37,900 bags
In 1802,	_____	_____	72,660 do.

and large as this latter importation may appear, an equal quantity was exported from Lisbon to the other countries of Europe. France alone purchased a quantity equal to what Britain had imported from Portugal the year preceding.

Cotton is not allowed to be exported from France, and pays an impost of one-half per cent. at importation.

We have heard it advanced in argument, that setting aside the impolicy of taxing the raw material of any manufacture, the tax upon cotton wool amounting annually to 300,000*l.* is no object to a trade, the annual return of which is twenty millions. These Gentlemen, however, who argue in this manner, do not advert that this tax ought properly to be stated against the raw material, and not against the manufactured article, and that upon the prime cost of the raw material it averages nearly ten per cent. Its influence upon heavy goods in a manufactured state is very great. Suppose a piece of common printed goods, which is shipped here at about 18*d.* per yard, to be manufactured from New Orleans cotton, and calculating the duty upon the raw material in all its progressive advances, it will be found to amount to about six per cent. upon this very important article of export trade in its finished state.

The manufactures are enriched by an useful invention. A Paper-merchant of Burythan, near Nuremberg, named Loeschge, has, after many essays, succeeded in employing tan, that has been used, and a small quantity of common rags, in making very good wrapping-paper.

A method has been discovered, and practised with success, by Mr. Bertrand, at Metz, of extracting a spirit from potatoes. The process is as follows: take 6000lbs. of potatoes, and boil them in steam about three-quarters of an hour, till they will fall to pieces on being touched. The vessel in which they are boiled consists of a tub, somewhat inclined. In the lower part of it are two holes, one for the purpose of bringing in the steam produced in another vessel over a coal fire, and the other made to carry off occasionally the condensed water. After the potatoes are boiled, they are crushed and diluted with hot water, till they are of a liquid consistence; then add twenty-five pounds of ground malt, and two quarts of wort; the mixture is to be stirred, covered with a cloth, and kept to the temperature of 15° of Reaumur, or of 66° nearly of Fahrenheit. After fermentation, and the exhalation of the carbonic acid, the matter sinks down, and is fit for distillation. By means of two stills, this mass may be rectified in one day, and it will produce about forty-four quarts of spirit, worth a guinea and a half, while the whole cost, including coals and labour, is about twenty-three shillings and sixpence. The residuum is good food for hogs.

Letters from many of the manufacturing towns in England, state that the great exertions made by foreigners, to procure models of our machinery, and to entice our artisans to leave the kingdom, particularly those engaged in the cotton manufacture.

Every precaution has been taken at the ports to frustrate these measures; but we are assured very considerable progress has been made in France, and other parts of the Continent in the cotton manufacture; and that principally from the information and assistance derived from this country.

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

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 8	to 4 0	4 0	to 4 4	3 8	to 4 4	3 8	to 4 4	3 8	to 4 0
Middling — —	3 4	to 3 6	3 4	to 3 8	3 4	to 3 6	3 4	to 3 6	3 2	to 3 6
Ordinary — —	3 0	to 3 2	3 0	to 3 0	3 0	to 3 2	3 0	to 3 2	2 10	to 3 0
Market Calf — —	9 6		9 6		9 6		9 6		9 6	
Eng. Horse — —	15s	to 17s	14s	to 18s	15s	to 18s	15s	to 18s	15s	to 18s
Sheep Skins — —	5 6	to 9 0	4 6	to 9 0	4 0	to 9 0	4 0	to 8 6	4 0	to 8 6
Lamb Skins — —	0 0	to 0 0	0 0	to 0 0	0 0	to 0 0	0 0	to 0 0	0 0	to 0 0
<i>Prices of Hay and Straw.</i>										
	<i>l. s. d.</i>		<i>l. s. d.</i>		<i>l. s. d.</i>		<i>l. s. d.</i>		<i>l. s. d.</i>	
St. James's—Hay —	5 6 9		5 11 6		6 3 6		6 5 6		5 12 0	
Straw — —	2 8 0		2 11 0		2 6 6		2 8 0		2 13 9	
Whitech.—Hay —	5 15 0		5 18 6		6 1 6		5 15 0		6 7 6	
Clover — —	7 1 0		7 1 0		7 — 0		7 1 0		6 19 0	
Straw — —	2 — 0		2 2 0		2 3 0		2 7 0		2 9 0	
<i>Uxbridge.</i>										
New Wheat per load —	— 1	to — 1	— 1	to — 1	— 1	to — 1	— 1	to —	— 1	to — 3
Barley — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to —	— 8	to — 8
Oats — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	—	to —	— 8	to — 8
Beans — — —	— 3	to — 8	— 8	to — 8	— 8	to — 8	— 8	to —	— 8	to — 8
New ditto — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8
Peas — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to —	— 8	to — 8
<i>Newbury.</i>										
Wheat — — —	44s	to 60s	48s	to 62s	48s	to 62s	44s	to 66s	— 8	to — 8
New ditto — — —	— 40	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8
Barley — — —	19s	to 23s	29s	to 23s	19s	to 23s	19s	to 23s	— 8	to — 8
Beans — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8
Oats — — —	17s	to 20s	17s	to 20s	16s	to 20s	19s	to 21s	— 8	to — 8
Peas — — —	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8	— 8	to — 8

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

Price of Hops.	First Week		2d Week		3d Week		4th Week		5th Week	
	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Kent — —	—	—	110	to 168	180	to 205	180	to 200	168	to —
Suffex — —	—	—	110	to 160	180	to 200	180	to 195	160	to 190
Effex — —	—	—	—	to —	180	to 200	180	to 189	160	to 190
Pockets.										
Kent (new) — —	—	—	130	to 280	189	to 220	180	to 220	168	to 210
Suffex — —	—	—	120	to 260	189	to 215	175	to 215	168	to 200
Farnham — —	—	—	—	to —	240	to 300	240	to 280	231	to 280

Seeds.										
Canary Seed (per cwt.)	80	to 85	80	to 85	80	to 85	80	to 85	80	to 85
Red Clover ditto —	82	to 114	80	to 108	80	to 105	75	to 105	70	to 100
White Clover, ditto —	80	to 147	80	to 147	80	to 147	70	to 147	70	to 147
Trefoil, ditto —	35	to 75	30	to 80	40	to 84	40	to 84	25	to 70
Carraway ditto —	36	to 42	40	to 44	40	to 45	40	to 45	40	to 45
Coriander ditto —	28	to 30	28	to 30	28	to 30	28	to 30	28	to 30
Turnip, (per bushel) —	20	to 24	20	to 26	20	to 25	20	to 26	20	to 26
Rye Grass, (per quarter)	40	to 65	35	to 70	40	to 65	40	to 65	35	to 63
Cinque Foil, ditto —	—	to —	—	to —	—	to —	—	to —	—	to —
Rape Seed, (per last) —	341	to 381	341	to 381	341	to 381	341	to 381	321	to 351

Meat at Smithfield,												
To sink the offal, p. ft. 8lb.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.		
Beef — —	4	4	to 6	0	4	6	to 6	0	4	0	to 5	8
Mutton — —	5	4	to 6	0	5	4	to 6	4	5	0	to 6	0
Veal — —	6	0	to 7	4	6	0	to 8	0	5	0	to 7	4
Pork — —	4	8	to 5	8	4	8	to 6	0	4	8	to 5	8
Lamb — —	0	0	to 0	0	0	0	to 0	0	0	0	to 0	0
Head of Cattle—Beasts about	1,800				2,200				2,000			
— Sheep and Lambs	7,500				7,500				8,000			

Price of Leather.														
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.				
Butts, 50lb. to 56lb. each	19	$\frac{1}{2}$	to 21	20	to 21	19	$\frac{1}{2}$	to 20	$\frac{1}{2}$	19	$\frac{1}{2}$	to 23		
Ditto, 60lb. to 66lb. each	22	$\frac{1}{2}$	to 23	22	$\frac{1}{2}$	to 23	22	to 23	22	to 23	19	$\frac{1}{2}$	to 21	
Merchants Backs —	19	$\frac{1}{2}$	to 20	19	$\frac{1}{2}$	to 20	19	to 19	19	to 19	19	$\frac{1}{2}$	to 20	
Dressing Hides —	19	$\frac{1}{2}$	to 21	19	$\frac{1}{2}$	to 21	19	$\frac{1}{2}$	to 20	$\frac{1}{2}$	20	to 21	$\frac{1}{2}$	
Fine Coach Hides —	21	to 22	$\frac{1}{2}$	21	to 22	$\frac{1}{2}$	20	$\frac{1}{2}$	to 22	$\frac{1}{2}$	22	to 22	$\frac{1}{2}$	
Crop Hides for cutting	20	$\frac{1}{2}$	to 22	$\frac{1}{2}$	20	$\frac{1}{2}$	to 22	$\frac{1}{2}$	19	$\frac{1}{2}$	to 21	$\frac{1}{2}$	20	to 21
Flat Ordinary —	18	$\frac{1}{2}$	to 20	18	$\frac{1}{2}$	to 20	18	to 19	18	to 19	19	$\frac{1}{2}$	to 20	
Calf Skins, 40 to 50lb. p. doz.	26	to 32	26	to 32	26	to 33	26	to 33	26	to 33	26	to 33		
Ditto, 50lb. to 70lb. do.	27	to 32	27	to 32	27	to 32	28	to 32	28	to 32	28	to 32		
Ditto, 70lb. to 80lb. do.	26	to 28	26	to 28	26	to 28	26	to 28	26	to 28	26	to 28		
Sm. Seals (Greenland)	40	to 42	40	to 43	39	to 42	39	to 42	39	to 42	39	to 42		
Large do.	51	to 71	51	to 71	51	to 71	51	to 71	51	to 71	51	to 71		
Tanned Horse Hides	18s	to 3s	18s	to 3s	18s	to 3s	18s	to 3s	18s	to 3s	18s	to 3s		
Goat Skins per doz.	—	to —	—	to —	—	to —	—	to —	—	to —	—	to —		

Price of Tallow.										
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
St. James's Market —	4	3	$\frac{1}{2}$	4	2	$\frac{1}{2}$	4	5	4	5
Clare Market —	4	3	4	2	$\frac{1}{2}$	4	4	4	4	4
Whitechapel Market —	4	3	4	3	4	3	4	3	4	5
Per stone of 8lb. Average	4	3	4	2	$\frac{1}{2}$	4	4	4	4	5
Town Tallow — —	73	6	71	6	73	6	74	6	76	0
Russia ditto (Candles) —	74	0	74	0	75	0	75	0	75	0
Russia ditto (Soap) —	69	0	67	0	69	0	70	0	70	0
Melting Stuff — —	60	0	58	0	59	0	59	0	60	0
Ditto rough — —	42	0	40	0	42	0	42	0	42	0
Graves — —	16	0	16	0	16	0	16	0	16	0
Good Dregs — —	10	0	10	0	10	0	10	0	10	0
Yellow Soap — —	78	0	78	0	78	0	78	0	78	0
Mottled ditto — —	86	0	86	0	86	0	86	0	86	0
Curd ditto — —	90	0	90	0	90	0	90	0	90	0
Candles, per dozen, —	12	0	11	0	11	0	11	0	11	0
Moulds — —	13	0	12	0	12	0	12	0	12	0

LONDON PRICES OF GRAIN for Feb. & March, 1803.

MARK-LANE, Monday, February 28.

Our supply of Wheat this day being but moderate, and the buyers pretty numerous, that article maintained last week's prices. We have a large quantity of Barley, and which, with Malt, are both cheaper. We have likewise plenty of Oats, but rather a scarcity of fine samples; the sales are dull. There is a good supply of Flour in town, and which is rather cheaper.

Price of Grain, on board Ship, as under

Wheat	4s to 58s	Malt	40s to 44s od	Grey Peas	30s to 33s od
Fine	59s to 60s od	Oats	14s to 18s	Small Beans	31s to 35s 6d
Rye	32s to 35s	Polands	20s to 21s 6d	Ticks,	28s to 33s od
Barley	20s to 24s 6d	White Peas	33s to 39s		

Monday, March 7.—Owing to great arrivals, a general depression has taken place in the price of all Grain at this market. Wheat has fallen 2s. per quarter, the supply being so very considerable. Barley and Malt likewise are down, say about 1s. 6d. per quarter. English Oats, from an extraordinary abundance, are also lower. It is, however, to be remarked, that some few very prime samples of each sort of Grain, obtained good prices. Tick Beans are 3s. and 4s. per quarter cheaper. Small ditto not quite so much. White and Grey Peas partake of the general decline, and are 2s. per quarter lower.

Wheat	43s to 56s	Barley	20s to 25s od	White Peas	31s to 38s
Fine	57s to 58s od	Malt	40s to 44s od	Grey Peas	28s to 31s od
Rye	32s to 34s od	Oats	13 to 19s	Sm. Beans,	30s to 35s od
		Polands ditto	20s to 21s od	Ticks,	25s to 30s od

Monday, March 14.—In consequence of the sudden change in the aspect of public affairs, and the stagnation of water carriage, owing to the impress for seamen, our supply of Grain for this day's market was rather short. Hence Wheats have advanced from 4s. to 5s. per quarter since last Monday. Barley and Malt may likewise be stated at 2s. per quarter dearer. Oats are alike on the rise, and from 1s. to 2s. per quarter higher. Fine White Peas 4s. and 5s. dearer. Beans of both sorts also higher. Flour is getting up, say 2s. per sack.

Wheat	46s to 62s	Malt	43s to 48s od	White Peas	33s to 45s od
Fine	63s to 64s 6d	Oats	16s to 21s	Grey Peas	31s to 34s 6d
Rye	33s to 36s	Polands	22s to 23s 6d	Sm. Beans,	32s to 36s
Barley	24s to 28s 6d			Ticks	28s to 33s 6d

Monday, March 21.—Our supply of Wheat to-day, though not great, furnished no inducement to the Millers to become buyers, and prime samples sold at 2s. and 3s. per quarter lower than last Monday. Inferior sorts experienced a more material depression. Without an useless employment of words, ALL GRAIN WAS CHEAPER. Barley, say 1s. and 2s. Peas 3s. and 4s. per quarter, with Oats and Beans, which were likewise on the decline. Flour a heavy sale, at last week's prices.

Wheat	44s to 60s	Malt	40s to 45s 6d	Grey Peas	30s to 33s od
Fine	61s to 62s od	Oats	15s to 20s	Small Beans	32s to 36s od
Rye	32s to 3 sod	Polands ditto	21s to 22s od	Tick:	28s to 32s od
Barley	21s to 26s od	White Peas	42s to 48s od		

Monday, March 28.—Our supplies of Grain to-day have been very large, and Wheat has fallen full 3s. per quarter since last Monday. Barley and Malt are likewise cheaper, say 1s. and 1s. 6d. per quarter. Oats are a brisk sale, and have experienced but little reduction. Fine samples for seed are, as usual at this season, dearer in proportion than the ordinary sorts. Peas and Beans are lower, Flour is 2s. per sack cheaper.

Wheat	44s. to 59s.	Malt	41s. to 45s.	Grey Peas	30s. to 33s.
Fine	60s. to 62s.	Oats	13s. to 19s.	Small Beans	30s. to 34s
Rye	32s. to 35s.	Polands ditto	20s. to 21s. 6d.	Ticks	26s. to 30s.
Barley	21s. to 25s. 6d	White Peas	38s. to 46s. 6d.		

BANKRUPTCIES AND DIVIDENDS,

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

BANKRUPTCIES.

The Solicitors' Names are between Parentheses.

ARKINSTALL, Henry, and Samuel George, Burslem, potters. (Willington and Small, Temple)

Ayres, Nicholas, Liverpool, dealer. (Martin, Newcastle under Lyne)

Baylis, Joseph, late of Croome Dabiot, now of Upton upon Severn, builder and carpenter. (Watts, Symond's inn)

Barker, John, Fieldhead, Castle Sowerby, woodmonger. (Clennel, Staple's inn)

Ballanger, Thomas, Tiverton, innholder. (Batten and Anstice, Temple)

Bourne, Herbert, St. James's street, silk-mercer. (Sonier, Charles street, Covent Garden)

Bevan, Thomas, Haverfordwest, shopkeeper. (Gabel, Lincoln's inn)

Brown, Thomas, junior, Wigmore street, baker. (Mills, Ely place)

Bourdman, William, Liverpool, broker. (Blackflock, Temple)

Croftsley, William, Manchester, cotton manufacturer. (Milne and Parry, Temple)

Clement, Joseph, Plymouth Dock, vintner. (Mayow, Gray's inn)

Cooper, John, senior and junior, Sevenoaks, coopers, turners, &c. (Poole, Serjeant's inn, Chancery lane)

Clements, Robert, New Buckenham, shopkeeper. (Foster, son, Unthank, and Foster, Norwich)

Christopher, Ann, Blakedown, iron-manufacturer and plater. (Bigg, Hatton Garden)

Dow, James, Bull lane, merchant. (Adams, Old Jewry)

Drayton, John, Carlhalton, victualler. (Gregson, Angel court, Throgmorton street)

Edwards, Samuel, Manchester, cotton spinner. (Cheshyre, and Walker, Manchester)

Finegan, John, late of Half-moon street, Bishopsgate, now of Peckham Gap, calico and muslin dyer. (Langham, Bartlett's buildings)

Green, John, Reading, mealman. (Dyneley and Sons, Gray's inn)

Goring, John Florian, and Elizabeth Johnston, St. Mary Axe, merchants. (Oakley, New London street)

Gibbons, John, and William Sherwood (John Gibbons and Co.) Liverpool, merchants. (Leigh, Liverpool)

Hitchen, William, Liverpool, merchant. (Blackflock, Temple)

Harrison, Thomas, Bishopwearmouth, merchant. (Blackflock, Symond's inn)

Hurd, William, York, merchant and tailor. (Allen and Exley, Furnival's inn)

Harris, Timothy, Waltham Holy Cross, pin-maker. (Jefferson, Waltham Abbey)

Harker, Daniel, Winchcomb, soap-boiler. (Edmunds and Son, Exchequer Office, Lincoln's inn)

Hunt, Thomas, Leather lane, hardwareman. (Fitzgerald, Lemon-street)

James, Samuel, St. Philip and Jacob, Bristol, pawnbroker. (Lawrence, Bristol)

Inglis, James, late of Billiter square, London, but now of Jamaica, merchant. (Forbes, Ely place)

James, Robert, late of Size lane, London, now of Tobago, merchant. (Chippendale, Temple)

Joggett, William Peter, Bridgewater square, and Kemp's row, Chelsea, merchant. (Kernot, Carey street)

Jones, David, Hewodwryd, horse-dealer. (Edmunds and Son, Exchequer Office, Lincoln's inn)

Killhaw, John, Liverpool, merchant. (Blackflock, Temple)

Leith, Andrew, Shoe lane, smith. (Bolton, Savage, and spike, Temple)

Malone, Patrick, Manchester, shoemaker. (Foulkes, Bury place, Bloomsbury)

Macaulay, John, Liverpool, merchant. (Blackflock, Temple)

Martin, George, Suffolk street, Charing Cross, watchmaker. (Jones and Green, Salisbury square)

Morpheew, William, Rotherfield, dealer in corn. (Wilfon, and Broad, Union street, Southwark)

Nicol, James Gavern, Goldsmith row, Hackney road, bricklayer. (Allfield, High street, Shadwell)

Peacock, Joseph Allen, Broad street, Ratcliffe, cheesemonger. (Burt, Gould square, Crutched Friars)

Pardoe, William, Clement's lane, St. Clement's Danes, ivory-turner. (Poole, Serjeant's inn, Chancery lane)

Parker, John, Soobury, mercer and draper. (Clarke and Pardoe, Bewdly)

Reddith, John, Sutton, near Frodsham, cornfactor. (Leeke, Chester)

Read, Edmund, Newcastle, miller, (Atkinson, Chancery lane)

Richardson, John, Pocklington, sheep jobber. (Lambert, Hatton Garden)

Ruffellheim, Sander, Goulstone square, merchant. (Howard, Jewry street)

Stowe, Thomas, Broadway, Worcester, butcher. (Smart, Staple's inn)

Shallcross, Stephen, and Robert Barnes, Manchester, cotton-manufacturers. (Edge, Manchester)

Sale, James, Liverpool, broker. (Blackflock, Temple)

Spalding, Henry, Metheld, grocer. (Lyon and Collyer, Bedford row)

Simpson, William, Clement's lane, merchant and insurance broker. (Wadefon, Barlow, and Grovender, Aulfin Friars)

Shepard, Joseph, Bristol, hosier. (Blandford and Sweet, Temple)

Tench, John, jun. Tokenhouse yard, merchant. (Lany, Great Frisco street)

Vickers, Robert, Liverpool, merchant, surviving partner of Nicholas Vickers. (Watt and Forreth, Liverpool)

Wigfield, James, jun. Northallerton, mercer and grocer. (Evans, Furnival's inn)

Wood, William, Charlton street, Fitzroy square, cordwainer. (Davison, Clement's inn)

Wright, John, Lamb street, Spitalfields, cheesemonger. (Redd, Cooke's court, Carey street)

Whitby, Robert, Manchester, cotton-spinner. (Edge, Temple)

White, Thomas, junior, Stroud, Kent, coal merchant. (Townshend and Ruffell, High street, Southwark)

Witke, Christian John Adam (Witke and Co.) Coleman street, (Livington, Feuchurch buildings)

Wiuter, Thomas, Brewer street, optician. (Sparks and Wiuter, Temple)

DIVIDENDS ANNOUNCED.

Bradbury, Samuel, Basughall street, broker, March 25

Bolton, A. J. St. Martin's lane, upholster, April 19

Browne, R. Adam's court, Broad street, merchant, April 13

Barnley, John, and Joseph Smith, St. John in Bedwardine Morocco shoe manufacturer, April 7

Bottomley, Thomas, Liverpool, haberdasher, April 7

Bedion, George, Manchester, Russian manufacturer, April 12

Carter, Robert, William, linen draper, April 2

Collifshaw, Charles, Ashborne, grocer, April 26

Clayfield, Edward, Grafton street, Soho, woollen-draper, April 23

Dowley, Thomas, Sunderland, ship-owner, March 19

Elliot, George, and George Pickard, Wood street, velvet-ribbon-manufacturers, &c. May 7

Grainge, Joseph, Uxbridge, broker, April 5

Gamble, Thomas, jun. Leicester, woolcomber, March 21

Gilmour, Robert, Lyon's inn, insurer, March 19

Hill, John, Maidstone, glass-seller, March 29 and April 5

Hopwood, David, Union street, Mary-le-bonne, grocer, March 15

Haworth, Edmund, Millhill, John Haworth, Hampstead, and Jonathan Haworth, Ardwick, calico-printers, &c. April 11

James, ——— Manchester, muslin manufacturer, March 10

King, James and Joseph, Newcastle, potters, separate estate of James, March 21

Kindon, John, Bristol, cabinet-maker, April 9

Lack, John, South Creak, shopkeeper, April 5

Leach, James Aikew, Jewry street, wine merchant, April 12

Liniker, John, Liverpool, woollen-draper, April 29

Manson, Thomas, Tokenhouse yard, merchant, March 19

Munibe, Charles, Exeter, tallow-chandler, &c. March 24

Malcom, Samuel, Old Broad street, broker, April 23

M'Henry, B. Stratford on Avon, mercer, April 9

Mitchell, Thomas, Hatton court, merchant, April 19

Neave, Thomas and Moses, Bickton, millers, &c. April 13

Potter, William, Bath, upholder, March 15

Pain, Edward, Piccadilly, wax chandler, April 25

Rowlands, Edward, Colebrookdale, barge owner, April 25

Rocheiter, Thomas, Canterbury row, coal merchant, April 16

Streator, W. Billingham, miller, April 4

Sadler, John, Birmingham, grocer, April 9

Underwood, John, Great Marlborough street, apothecary, April 23

Wolfenholme, Dean, junior, Waltham Cross, inn-holder, March 12

Weller, William Waterly, Deptford, miller, March 12

Whately, John, Bankside, colour-manufacturer, April 26

Wild, James, Hulme place, brewer, April 13

Watson, William Hill, Whitechurch, scrivener, April 26

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

From the Returns received in the Week, ended MARCH 19, 1803.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Middlesex	60	5	38	3	25	9	23	6	32	3	38	7		
Surrey	61	0	32	0	25	3	2	11	34	0	37	6		
Hertford	54	4	35	6	25	0	20	10	36	0	38	6		
Bedford	52	1	31	7	23	1	19	9	28	1	41	2		
Huntingdon	49	0			21	8	16	4	24	10	35	1		
Northampton	52	10	29	0	22	10	17	8	27	6	30	0		
Rutland	54	6			22	0	18	0	28	0			57	3
Leicester	55	1			22	4	17	6	29	2	30	2	33	9
Nottingham	61	8	35	0	26	4	20	0	31	0				
Derby	62	5			27	4	20	6	37	8	34	9	19	1
Stafford	60	3			25	8	20	3	35	4			28	2
Salop	56	5	38	8	24	6	19	11	40	10	38	10	31	9
Hereford	51	8	32	0	23	7	21	1	35	8	33	7	60	11
Worcester	53	4	29	0	24	1	23	1	33	9	39	6		
Warwick	58	11			24	8	20	2	35	1	41	0	38	2
Wilts	56	6			23	0	19	8	37	0	36	0		
Berks	58	7			23	3	21	10	32	6	35	9		
Oxford	55	7			20	7	19	3	30	10	34	1		
Bucks	53	3			22	3	20	6	30	6	38	0		
Brecon	53	10	32	0	25	4	16	0			28	0	32	2
Montgomery	54	4			22	5	16	0			32	10	38	2
Radnor	51	4			23	7	18	10			31	1	50	6

Maritime Counties.

Essex	57	2	33	0	25	3	24	8	31	1	28	9		
Kent	57	10			25	6	22	0	31	1	34	0		
Suffex	52	0			25	0	21	4	32	0				
Suffolk	54	2			22	0	19	1	26	10	33	9	47	11
Cambridge	47	10	33	6	20	9	13	11	25	3	32	2		
Norfolk	53	3	37	3	21	2	17	3	27	3	31	7		
Lincoln	53	5	35	6	23	2	15	10	29	0	34	6		
York	54	4	39	4	24	7	16	8	30	5	58	8	35	7
Durham	56	3	30	8	27	4	19	8						
Northumberland	51	0	40	0	20	10	17	10	36	0			13	4
Cumberland	63	4	52	0	28	2	22	1					17	6
Westmorland	70	1	51	2	29	6	22	9					18	0
Lancaster	63	2			26	8	21	11	38	9	50	0	17	6
Chelster	55	4			25	3	18	7	43	4	54	0	16	11
Flint	63	1			30	7	16	0						
Denbigh	59	5			28	5	17	7	41	8	41	8	33	1
Anglesea					20	0	14	0						
Carnarvon	61	4	42	0	26	0	15	0					32	6
Merioneth	65	9	48	0	27	4	19	4			40	0	33	10
Cardigan	61	2			21	1	12	0						
Pembroke	48	7			22	0	12	8						
Carmarthen	55	8			21	0	13	0						
Glamorgan	55	2			21	4	15	10						
Gloucester	56	7			22	4	18	0	31	4	32	0		
Somerset	54	6			22	9	18	2	30	2	34	8		
Monmouth	56	12			23	8	18	8						
Devon	59	3			21	7	15	11						
Cornwall	59	0			21	9	16	2						
Dorset	56	7			21	8	20	0	40	0				
Hants	53	11			22	2	22	0	34	3				

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

Days	Bank Stock.	3 per Ct. Red.	3 per Ct. Confols.	4 per Ct. Confols.	5 per Ct. Navy.	5 per Ct. Loyalty.	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Anno.	India Stock.	Omnium.	Excheq. Bills.	Confols for Act.	Tickets.
Feb. 28	189	71½	71	88½	101½	104½	20 11-16	4 9-16	70	11 5/8	215½	4 dif.	1 2 dif.	72½	17 17
March 1	189½	71½	71	88½	101½	104½	20 3/4	4 9-16	70½	11 5/8	216½	3 3/4	par 1 dif.	72½	17 17
2	190	Shut	71	88½	101½	104½	20 13-16	4 9-16	70½	11 5/8	221½	3 3/4	1 dif.	72½	17 17
3	193		71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
4			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
5			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
7			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
8			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
9			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
10			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
11			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
12			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
14			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
15			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
16			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
17			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
18			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
19			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
21			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
22			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
23			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
24			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17
26			71	88½	101½	104½		4 9-16	70½	11 5/8	221½	3 3/4		72½	17 17

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

TO OUR READERS AND CORRESPONDENTS.

THE Drawing and Description of the Hand Drill, by our obliging Correspondent Agricola Norfolciensis, will, we doubt not, prove highly acceptable to that part of the Agricultural World, to whose use it is particularly adapted, if we may be allowed to suggest an improvement, we would advise the pulley C to be fixed on the axis of the cast iron wheel; the pulley E to be cylindrical, and another pulley of exactly the same dimensions, turning on the axis of the pulley E; now if a slight lever be contrived so as to throw the leather strap from E to the pulley, freely turning on the same axis; it is evident the cylinder with the seed cups would cease to turn, and that the additional pulley would turn round on the axis of the seed cups till the strap move by the lever again thrown upon the pulley E. This idea of stopping a rotative motion is not new, we therefore claim no merit for mentioning it, as it is adopted by all manufacturers, whose lathes are turned by steam engines. We think this would simplify the mechanism of the Drill, and should be glad to hear the opinion of Agricola Norfolciensis on the subject.

We were apprehensive we might have unintentionally offended Castor. His kind communication has, however, relieved us from that apprehension, and we again beg to repeat, that we shall ever esteem ourselves happy in his highly valued correspondence.

The Norfolk Farmer's future communications will ever readily find a place in this Magazine, and we shall at the same time think ourselves highly obliged to him for the favor.

A Farmer's Observation on the Row-Culture, will, we doubt not, meet with attention from Agricola Norfolciensis. The Farmer is a strenuous advocate for the particular system, which he seems to have pursued with success, and we therefore presume all his conclusions are drawn from actual practice.

The observations of Juvenis, on South Down Sheep, are such as merit the attention of our Readers. If we may be allowed to give our opinions on the subject of Dr. Wilkinson's Letter, we should (from the Doctor's well known agricultural abilities) imagine he whole to be a mere error in writing.

We are sorry that through the inattention of our Engraver, the plate of Darwyn's Drill Plough was not finished in time for our last Number, we have taken every care to have it done as completely as possible, assuring our Readers, that it will be our future study to avoid a similar omission.