Mr. Ilberts Expanding Horse Hoe.

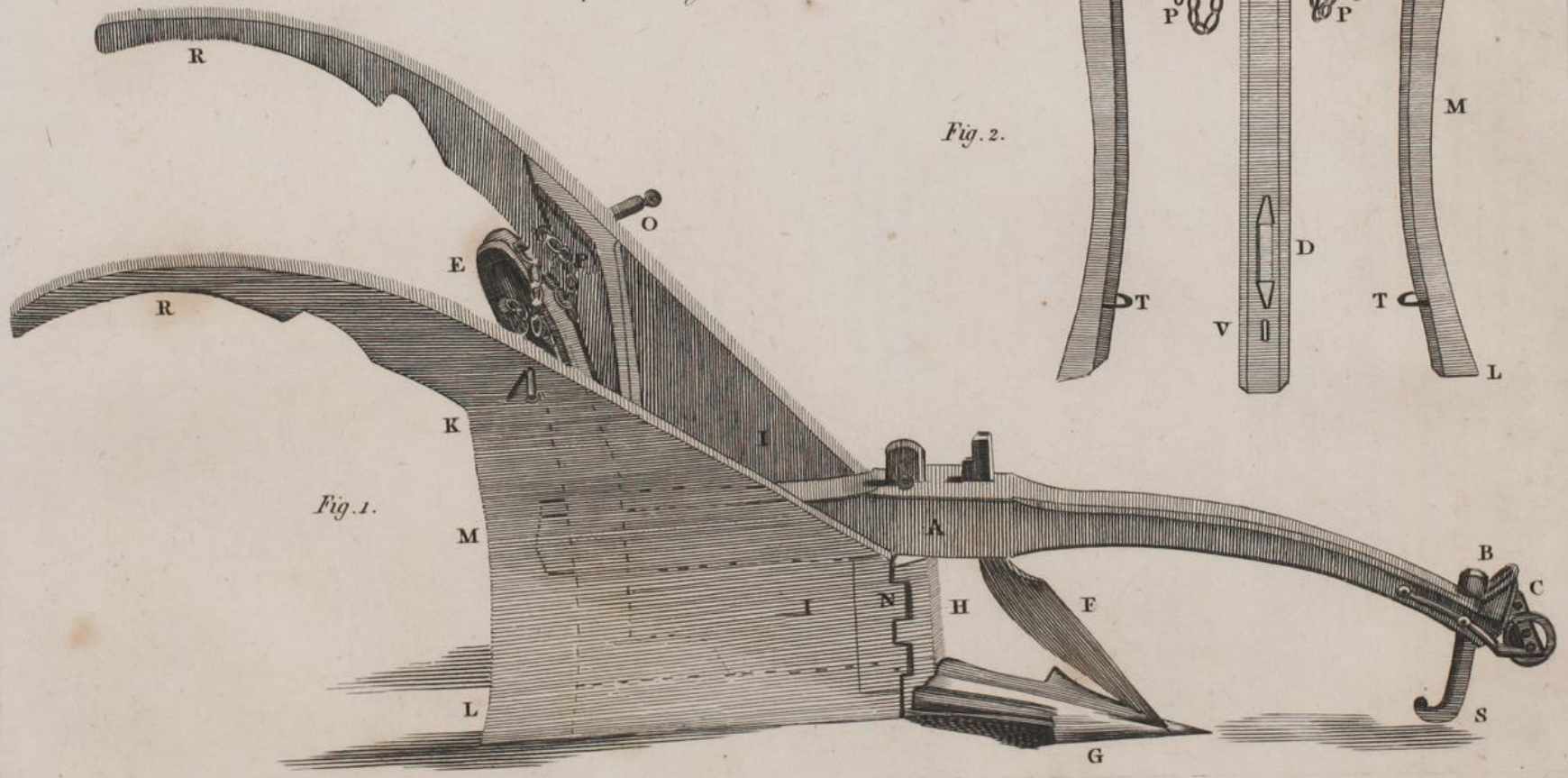

Fig. 1.

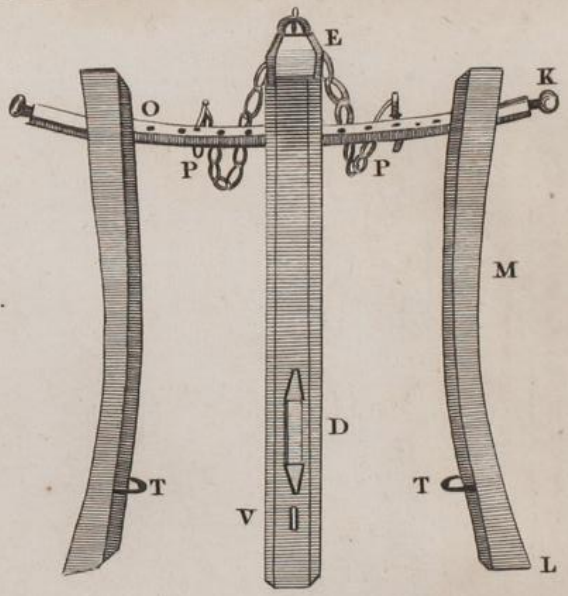

Fig. 2.

Neele sc. Strand.

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MR. ILLBERT'S EXPANDING HORSE HOE AND PLOUGH, WITH A PLATE.

To the Editor of the Agricultural Magazine.

Sir, *London, Feb.* 17, 1805.

THE Machine, of which I now send you a drawing, was presented by Mr. Illbert, many years ago, to that useful body, the Society instituted at London for the Encouragement of Arts, Manufactures, and Commerce, and is certainly a valuable implement in husbandry, answering both the purposes of a horse hoe and plough.

As I do not recollect that any engraving or description of it has been given, either by that society, or in any publication, I am of opinion you will render essential service to your correspondents by inserting an engraving of it in your useful Magazine.

The length of the beam is six feet three inches, its breadth four and an half inches by three inches, the handles with the mold boards are five feet six inches long, the bottom-piece three feet long, and in thickness four and a half inches by three inches, and the back-piece, or centre upright betwixt the two mold boards, is two feet five inches high by four and a half inches square. The proportions of the other parts may be ascertained by an inspection of the drawing.

This machine is applicable to the hoeing of potatoes, turnips, and such an infinite variety of other agricultural purposes, as I am certain will, upon trial, render it a beneficial instrument to the farmer.

I am, Sir, &c.

S. ROLYAT.

DESCRIPTION OF MR. ILLBERT'S HORSE HOE AND PLOUGH.

Fig. 1. Gives a perspective view of the machine, where A is the beam, B the end to which the horse is fastened by the ring in the bridle or muzzle, C to which the swingle tree is to be fixed. The other end of the beam is morticed at D into the upright piece, as is more fully shewn in figure 2, where the same letters describe the corresponding parts.

F The coulter placed in the beam.

G The share, which is sharp pointed, and widening from the point in a triangular form, something like the head of an antient arrow.

H The upright piece into which the share is fixed.

I I Two moveable mold boards which flaunch outwards at the tops K, and bottoms L, and sink inwards in the parts M. These mold boards are moveable by a hinge at the top part N, so as to allow them to be contracted or expanded to any width desired.

O A round piece or rod of iron fixed in its centre to the upright piece E, and bent in such a circular form as to allow the mold boards I I to slide thereon backwards and forwards.

P P Are two iron pins which are made to go through holes made at different distances in the iron rod O, and are intended to keep the mold boards at the particular width required.

R R The two handles by which the machine is guided.

S A bent iron, or bent piece of wood shod with iron, to direct the depth which the share should penetrate into the earth.

The dotted lines are intended to show the interior construction of the machine, and the manner in which the several parts are connected with each other.

Fig. 2. Is an end view of the back part of the said machine, explaining by the same letters the different parts above described.

T T Are two small staples fixed in the sides of the sliding mold boards, with intent to hold them at their utmost expansion steady, by means of a small iron bar to be placed on the hook V, the ends of which bar go into the staples T T.

ON THE BREED AND SIZE OF CATTLE, AND ON COMPARATIVE EXPERIMENTS IN AGRICULTURE.

To the Editor of the Agricultural Magazine.

Jan. 28, 1805.

SIR,

PERHAPS your correspondent, *A Novice*, may think that (in my letter in your last number) I have not been sufficiently explicit with regard to those situations where large should be preferred to small sized cattle; I shall, therefore, offer a few explanatory remarks.

I have already stated my opinion with respect to the distinguishing marks of quick feeders, which are *generally* well formed, small boned, and thin skinned, and *always* covered by a hide which feels soft and silky, or "mellow;" and to these criteria I think great attention should be paid, whether the cattle be large or small, especially to the "feel or touch of the skin."

This being laid down as a *principle*, the quantity and quality of the food, and the species of beef consumed in the district, seem to be considerations which next demand the attention of breeders and graziers.

In this district, for example, where there is a very great and constant demand for large cattle to supply a vast number of ships at Shields, Sunderland, and Newcastle, because experience has proved, that the beef of such cattle is the most proper and profitable for salting; I would, upon very productive, rich, and forcing pastures, more especially if an adequate supply of turnips could be raised upon the farm, give the preference to cattle of this description. But, if I were placed in the interior, or southern parts of Yorkshire, where the demand is principally for the consumption of large towns,—Manchester, Birmingham, Sheffield, Leeds, York, Halifax, Bradford, Huddersfield, &c.—I would, even upon productive lands, prefer those of smaller size; for, in such markets, their beef is generally sold at one halfpenny per pound higher than that of large beasts.

I will not, however, concede to the advocates for small sized cattle, that this increase of price arises wholly from the superior quality of the beef, though, perhaps, it would be proper to except that of Kyloes, which, we are told by those persons of taste who attend particularly to the pleasures of the table, has a flavour superior to any other. This, however, I conceive, is not owing to breed or smallness of size, but to the nature of the herbage upon which they are reared.

It has been advanced in favour of small sized cattle, that the superiority of their beef arises from the smallness of the grain or muscular fibre; and, undoubtedly, if the beef of those which have been bred with judgment and attention, be exhibited against that of large cattle, of the old, coarse, large boned, kind, a difference in favour of the smaller animals will be very evident. This, however, is so very small, *(when the cattle of each species are equally well bred)* that, probably, the greatest adept in good eating could not, by *mere taste*, distinguish any at all. It appears then, that the increased price which is obtained in certain markets for small beef, arises from the size of the "joints." which, in the language of the butchers, "brings a greater number of buyers."

In the northern parts of Yorkshire, and in the counties of Durham and Northumberland, the cattle of the large Dutch, or short horned, breed, have been so much improved, by many enlightened and spirited breeders, that they now produce as delicate and finely "marbled" beef, as any other breed whatever. They are, besides, remarkable for gaining fat on the rumps, sirloins, and other favourite points, as well as for fattening completely in a small space of time; and I am inclined to believe that, where their beef can be sold as high as that of small cattle, they will pay as much in proportion to the food they consume, as any breed in the kingdom.

The late Duke of Bedford certainly tried many cattle of different sizes and different breeds; yet a challenge which was

given some years ago by a gentleman in the county of Durham, (who was far from the oldest breeder in this district) to show the produce of five of his short horned cows, against those of any other five cows in any persons hand in the kingdom, for five hundred guineas, was not accepted, though it was published in the newspapers, and attracted the attention of his grace and many other eminent breeders.

It was proposed, by the challenger, that a few breeders should be chosen on each side, to fix what should be considered as the criterion of superiority, and likewise the manner of proceeding in order to discover them with precision; and, if I am rightly informed, size was not to be deemed the most material proof of merit, though the cattle were to be of an equal age, form, beauty, smallness of bone, fineness of skin, quantity of fat, and the quality of the beef, were to be viewed as proofs of excellence; but the greatest weight in proportion to the size, and the most flesh in proportion to the bone, were points which, I understood, the Durham breeder contended should be considered of leading importance. And, as it is pretty well ascertained, that cattle of precisely equal outward dimensions, and alike in outside fat, produced very different quantities of beef, probably he was right. It is this difference, which, I presume, has led to the toast so frequently given at the meetings of our most distinguished breeders and graziers, viz. "*Great in weight and small in size.*"

Many eminent graziers and butchers have asserted, that the famous ox which was bred and fed by Mr. Colling, of Ketton, in the county of Durham, and which has been shown within the last two years in most parts of the kingdom, is the fattest, and heaviest in proportion to its size, ever produced in the world. He is certainly a well formed, small boned, thin skinned animal; and, if his beef reaches the enormous weight of one hundred and eighty stones, (of fourteen pounds each) which many good judges have declared it will weigh, he will probably exceed all others in the quantity of butchers meat in preportion to *superfices*. This fine animal is of the large improved breed of this district.

The facts which have been adduced relative to the difference in the weight of cattle, *of equal outward fatness and size*, clearly shew that that rule is not correct, which teaches the grazier to estimate the quantity of beef his cattle will produce, from the girt and length; and even if he could ascertain the exact size of that part of the animal which contains the lungs, stomach, &c. I think the mathematician would dispute the method of calculation which is often practised; for though I have long ceased to study Euclid's Elements, aud the doctrine of fluxions, yet I will venture to say, that it will not stand the test of mathematical principles. I mention these particulars, because *A*

Novice, and other inexperienced graziers, may often be misled by some copious tables, &c. which have been published on this subject.

Though the long agitated question, whether large or small cattle consume the most food in proportion to their size? has not been satisfactorily decided; it is probable, that in both kinds, those breeds are the most profitable which fatten quickly, and produce the most beef in proportion to their size or outward dimensions; for besides the advantages of early maturity, it seems reasonable to conclude, that those which produce the most meat in proportion to their superfices, approach nearer *solidity*; and consequently, that their stomachs and other intestines, *and the quantity of food consumed*, will be proportionably small.

I am aware, that in opposition to this argument, some will advance the powers of the organs of digestion, and contend, that the quantity of food digested, is not in proportion to the size of the stomach and other internal parts, &c. &c. *Proofs*, however, are wanting; and, in the present state of our knowledge, we must continue to defend our favourite hypothesis, without the aid of a sufficient number of facts. If our discussions excite some *great* breeders, who have sufficient leisure and ability, to decide our disputes by a series of *very accurate* experiments, they will prove highly beneficial to the country.

But though the above important question has not yet been decided, most graziers seem to agree in this, that while small sized cattle will fatten completely (within four or six months) on inferior pastures, those of a very large size will not in the same time and on similar lands, attain maturity; and as it is often attended with great disadvantages to the grazier, to be *obliged* to sell cattle which are not fat, it is deemed the most judicious practice to stock such lands with beasts of a middling or small size, more especially where turnips cannot be profitably cultivated.

After all, there is so much judgment required in cattle markets, which can only be gained by experience; and so great a difficulty in estimating the increase of weight which cattle of various descriptions will gain within a given time; that, I think, all inexperienced persons would be perfectly right in pursuing the prudent course your correspondent R. W. (of Norfolk) has recommended to *A Novice*, in the last number of your Magazine.

Perhaps it may also be necessary to make some remarks explanatory of what I stated in your last number, on the subject of comparative experiments in agriculture. When I said, that the quantity of seed should be precisely equal in each mode of culture, I alluded to experiments made with a view of discovering the most beneficial rotation of crops, the most fertilizing manures, the best modes of applying them, &c. &c. and not to

those, the object of which is to ascertain whether the drill or broadcast mode of cultivating corn is most advantageous.

In conducting experiments of the latter description, it would certainly be proper to begin on a very small scale, with equal quantities of seed, and afterwards to vary the quantities 'till the proportion which could be beneficially saved by drilling, was discovered.

Some warm advocates for drilling have asserted, that one to one and a half bushels of wheat per acre, is a sufficient quantity of seed in that husbandry, and that the quantity generally sown in the broadcast mode, is about three bushels an acre. It may be very proper to vary the quantity of seed according to the breadth of the intervals and the quality and condition of the land; from all the remarks I have made, however, I am of opinion, that one to one and an half bushels of wheat per acre, would, in almost every instance, be too small a quantity for the climate and lands of the northern counties, even in the drill husbandry.

The general practice in this part of the kingdom is, (under similar circumstances with regard to soil, manure, &c. &c.) to sow about two bushels in the drill, when two and an half are sown broadcast; and nearly two and an half bushels in the former, when about three are sown in the latter mode. In some cases it may be adviseable to sow about one-third less seed in the drill than in the broadcast culture; but a greater proportion I cannot advise your correspondent to withhold. In this quarter we generally sow from one and an half to two pounds of turnip seed per acre, both in the drill and broadcast method.

In Scotland and the northern counties of England, I have not seen a farm upon which housing is preferred to stacking of corn; though, I believe, there are some instances of housing in Yorkshire. In the southern counties I understand it is the general practice, and that where it is not pursued, a most expensive mode of thatching is still very common. From the observations I have made on the latter, it seems better calculated to please the eye and lighten the purse, than our northern mode; which, however, answers the purpose of the farmer, *at about one-half or one-third of the expence, if his intention is to save his corn from damage, and not to exercise his labourers in useless parade.* But your southern cerrespondent may, perhaps, see advantages in the practices of housing, and expensively thatching corn, with which I am unacquainted, and I should be glad if they would point them out. Perhaps I should afterwards be more particular as to the practice of the north, and *A Novice* (who has requested information on this subject) would thus be enabled to appreciate the merits of each mode.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

ON THE CULTURE OF TURNIPS, AND THE BEST MODE OF PRESERVING THEM FROM THE ROT.

To the Editor of the Agricultural Magazine.

SIR, *Jan.* 30th, 1805.

I Acknowledge my obligations to your Norfolk correspondent R. W. for his communication on preserving turnips from damage by severe frosts.—I can readily conceive, that the mode he mentions will keep the turnips in a more succulent state than that of housing or stacking; and that, in some seasons, it will be considerably advantageous by comparison with the common practice. But, I conceive that after making such *deep* furrows as appear to me to be necessary to contain the turnips in the manner described by R. W. it would be difficult to reduce the land to an even surface; and if this could not be effected, it is almost unnecessary to say, that the succeeding crops would be much injured on retentive soils.

I should be glad to know on what kinds of land the Rev. Mr. Munning's mode has been *practised*; to what extent, and particularly whether the extra expence, &c. has been much overbalanced by the saving of turnips.

In some situations perhaps it may be judicious management to carry the turnips into another field as R. W. recommends; but where the soil is sufficiently dry for folding sheep upon them, I am convinced, from experience, that this mode of consumption greatly enriches the land, improves its texture, and renders the succeeding crops much more productive than that of carrying off the turnips, especially on very light, porous, friable soils.—On such grounds I have often observed these advantageous effects from folding, even when the turnips had grown till they flowered.

I observe, with much pleasure, that some husbandmen in Norfolk are now satisfied, from actual experience, of the superiority of the Northumberland mode of cultivating turnips.—The difference of weight in its favour is there stated at about two ton per acre; I must remark, however, either that the crops have been very light, or that the experiments have not been properly conducted; for, by a series of *accurate* trials which (for reasons not material to your readers) I do not at present consider myself at liberty to detail, the produce in this district has been generally in the ratio of 4 to 3, and, in some cases, as 3 to 2; and I have not the smallest doubt but that where 18 tons an acre can be raised in the broad cast * 24 tons

* A considerable part of my drilled turnips, upon middling land, were this season from 30 to 35 ton, (after about 16 cart load dung) per acre.

will be obtained in our drill method, *when the experiments are made with the necessary accuracy.*

When we add to this increase of produce, the saving of expence in culture, *including hoeing*, and the augmentation of produce in the succeeding crops; (which arises from the more fortifying mode of cultivation and the additional manure gained in consuming the turnips) and when we advert to the increase of dung under proper management, we will readily perceive how greatly our husbandry will improve a district where the soil is adapted to the culture of that valuable root.—To it we owe, in a great measure, the fertile state of the lands in the counties of Northumberland, Roxburgh, &c. where most of the soil is far from the first quality.

But though by this superior mode of culture, and judicious cropping, (which always keeps the land fresh) we possess the means of raising vast quantities of dung, and certainly do raise great quantities of that valuable article; yet, I am sorry to say, that in many farms, we do not avail ourselves, to the utmost of our advantages.—We are *generally* in the habit of leaving too much straw in the fields at harvest, and in neglecting to collect many other vegetable substances, &c. which would greatly encrease our stock of dung, and consequently the fertility of our lands.---In these respects, I think we are excelled by our brethren, in several parts of the south.

Drill machines, of various descriptions, are used for sowing turnips in this district. Your Magazine for January, 1803, contains a front and side view, and description, of one, (by Agricola Norfolciensis) which, with a cylindric,* instead of a barrel-like seed box, is nearly similiar to that in general use.--- Those first used in this quarter, had but one wheel, which was moved along the tops of one-bout ridges; the coulter made a small rut, in which the seed was deposited from a spout into which it fell from a tin vessel of the form of two frustums of a cone, or of a barrel.---This vessel, (which was about ten inches long and seven in diameter) contained, in the broadest part, six or eight small holes a few inches from each other, and was moved round by a jack chain passing from the axle of the wheel to a circular piece of wood (with a proper groove) fastened to the end of the seed box.

Some disadvantages attendant on the single wheel, led to the construction of two-wheeled drills; from most of which the seed dropt in consequence of the sideways shaking, or sieve-like motion, mentioned by Agricola Norfolciensis.—The preference given to these drills was principally owing to their sowing more regularly, and straighter, than those from which the dropping of the seed was occasioned by a circular motion,

* Most of the seed boxes of this form, have two small holes for the seed to pass into the tin receiver, from which it falls into the rut made by the coulter.

But, in fact, their superiority arose from the additional power given to the holder by the *two* wheels; and *that number* is now used with the circular motion, by many good husbandmen.—Upon this principle a machine has been lately constructed, to sow two drills at once; and where the one-bout ridges can be so exactly made as to be parellel to each other, in every part, it answers well.—This drill has no wheels, its roller giving a circular motion, by means of a belt, to the axle upon which the two seed boxes are fixt. It it drawn by one horse, and as two machines of the other forms, can easily be moved by the the same power, it saves nothing but the expence of a man, which, on some lands, is much overbalanced by imperfect sowing.

But the most simple and cheap, and, I think, the most useful turnip drill in Northumberland, was invented a few years ago, by a most intelligent agriculturist, Mr. Bailey, of Chillingham, a gentleman who is also distinguished as an able mechanic.—This instrument has two wheels of about 26 inches in diameter, with an iron axle (of about the same length) to which they are *fastened*. On the middle of this axle, is firmly fixed a small cylinder about one inch long, and two inches in diameter, on the surface of which are cut from ten to sixteen cavities, of a semi-oval form, large enough to contain four or five seeds each. Upon the axle is placed a wood hopper, or seed box, which will hold about two quarts. This cylinder moves within a hollowed piece of brass fixt in the bottom of the hopper, into which hollowed part the seeds sink, and as it has an aperture at one end, three tenths of an inch long, and one tenth wide, it passes from thence into the spout, or coulter, as the semi-ovals (above mentioned) are brought, by the circular motion of the axle of the wheels, below this aperture.—And as it has a slip of iron sunk into a groove in the back board of the hopper, which is screwed down upon, or raised from this aperture, the holder may augment or diminish the quantity of seed, per acre, with great facility; the *minimum* quantity being sown when the iron is screwed to the notch in the brass.—In general the plants after this machine do not grow so close and clustered as after most of those of a different construction, which expedites the hoeing.—With all of them the holder should be particularly attentive in keeping the seed dry, and in separating all stones, lumps, &c. from it, by a proper sieve.

The cost of the single drills is from 1*l.* 6*s.* 0*d.* to 3*l.* 0*s.* 0*d.*; and that of the double machine from 4*l.* 10*s.* 0*d.* to 5*l.* 5*s.* 0*d.* I am sorry I cannot, at present, send you drawings of them.

With respect to the commerce in corn, I have already stated my opinion, that, under the peculiar circumstances of

this country, an unrestrained trade would be highly injurious to her best interests, that under the late regulations, the importation of foreign grain was permitted before our own reached adequate prices, and that the limits fixt by the present corn bill would encourage our own husbandmen, (by securing to them more steady and adequate prices) to extend aration and improvement to such a degree, as to render us independent of foreign nations, for the first article of human subsistance; and I ardently hope, that our legislators will not be misled by the arguments of the advocates for the commercial system and a free trade.

Your correspondent, R. W. agrees with me, that the profit on commercial, is greater than that on agricultural capital; and as he maintained that those employments of capital which yield the greatest profit, are most conducive to national power and prosperity, I thought, and still think, the position, *that it would be more advantageous for us to depend on foreign, than on British corn*, was deducible from his principle. It struck me, therefore, that the story of the Phrygian king was aptly introduced (by Agricola Septentrionalis) to remind him of the possibility of our suffering, *by such dependance*, the miseries of famine, even if our gainful commerce caused all the gold and silver produced by the mines of America, to flow into this country.

If we should cease to cultivate corn because agriculture is less profitable than commerce, and because our demand for foreign grain would enable the inhabitants of Prussia, Russia, and the north of Germany, to purchase greater quantities of our manufactures and colonial produce; and if, either from their own necessities, or political motives, (and the influence of our inveterate enemies over that country which export more corn than all the rest of Europe, is well known) the governments of these countries should prohibit the exportation of corn, how could your friend R. W. with a "guinea," or all the gold of opher, obtain "a guinea's worth?"

The desire of gain may, as he says, "be universal," but what effects could that desire produce in countries where the will of one man is law? I readily grant that such prohibition would be injurious to both parties; but it is obvious that the party possessing abundance of gold, silver and articles of trade, but no corn, would suffer in the greatest degree; and it is well known, that, to distress an enemy is deemed an important political point, arbitrary princes do not regard the immediate interests of their subjects.

But besides the dangerous dearths and famines to which we should be exposed by a disgraceful dependance on other countries for the whole, or part, of our daily bread; there are many other reasons for encouraging British and Irish agriculture,

and the improvement of our waste lands, by every means in our power; one, which is very important, is this, that as the increase of people keeps pace with the cultivation of the ground, the proper extention of our agriculture would much increase our population; and as the security and strength of a country depends much more on its population and produce than on its extent, it will not be denied that such an increase of inhabitants would greatly augment our zeal, power, and prosperity.

It is not difficult to prove, that if the lands in great Britain and Ireland were well cultivated to the extent of which they are capable, they would produce food for an increase of between eight and ten millions of inhabitants.---Perhaps they would maintain considerably more, but by this addition, we would gain more strength by the plough, than our enemies have done by the sword, and without the disadvantages of a more extensive frontier, and when a view is taken of the increased misery of our fellow creatures on the continent, within the last fourteen years, and when the happiness of the inhabitants of this country is contrasted with the enslaved state of mankind in most other parts of Europe, is there a man with a British heart in his bosom that does not feel much anxiety for the adoption of such measures as will render the blessings we enjoy still more secure, and more likely to be transmitted unimpaired to posterity!!

The late alteration of our corn laws has been called a sacrifice to the landed interests.---I view it, however, as a proof that our legislators are at length convinced, from experience, that the arguments so long advanced by the commercial interest are fallacious, that agriculture is the most important of all employments, and that British agriculture would lauguish, if the importation of foreign grain (which can often be purchased at less than one half of what it costs the farmers of this country) were permitted, before the prices of our own were sufficiently high to encourage tillage to such an extent as to ensure an adequate supply of British corn. That alteration should not, therefore, be considered as a sacrifice to the land owners, (who, by the bye, have certainly been loaded beyond the due proportion) but as a measure well calculated to promote the improvement of our lands, and the power and happiness of the community at large.

The greatest advocate for a free trade (Dr. Smith) did not deny that it would reduce the prices of grain, and rents of land, in this country; and from what R. W. has stated relative to the increase of rent, while the profit of the farmer would remain the same as at present, he seems to be of the same opinion. He should, however, consider, that before a free trade could operate so as to confirm his statement as to the profits of

farmers, most of those who possess their farms by lease would be ruined, which, *to say nothing of the injustice of the measure*, would cause a great reduction in what is already too small--the agricultural capital of the country; yet a free trade is proposed as best calculated to extend agriculture and promote the interests of the kingdom! Even if it were admitted, that under the present regulations, the agricultural capital of this country will not increase,* still their inutility would not be apparent from R. W's. arguments, for he has allowed, that they are advantageous to the landlord, and has not entered upon their probable effects in the improvement of wastes, &c. Why does he contend against a measure that is so likely to ameliorate the state of the country, and increase the rents of land, merely because he thinks the profits of farmers will not be augmented? He has, I think, taken too *narrow* a view of the subject.

R. W. says, "That it is a fact, that the expences of farming have kept pace with the prices of corn, I think few will deny, more particularly if they have read the two letters of A. N. on that subject." In these letters, sir, I endeavoured to show, that corn was higher in the 17th, than in the last century, that the expences of farming had greatly encreased, and that the price of labour, within no great space of time, had encreased 100 per cent. or more, in several parts of the kingdom. My intention was to prove, that the prices of corn had *not* kept pace with the necessary expences of farmers, and if, instead of proving this, I have proved what R. W. has stated, namely, that the expences of farming have only kept pace with the prices of corn, I have been very unfortunate.

I agree with R. W. that merchants are often under the necessity of paying a more flattering attention to old wives, and other purchasers of their goods, than farmers pay to corn merchants; though in dull times, the latter gentlemen receive many compliments and troublesome visits from the occupiers of small farms, *a little before the rent days*. But in estimating the independence of farmers, he has forgotten the disagreeable circumstances in which many of them are placed from the want of leases, restrictive covenants, clauses against subsetting, &c. &c. Instead of being independant, they are, by such circumstances, but little removed from a state of vassalage, and frequently obliged to cringe to an ignorant land agent, who tyranizes over the poor tenantry like a Turkish bashaw. The merchant has the administration of his own property; farmers have not; they must submit to be dictated to by stewards, who, in many cases, possess but a very small share of agricultural knowledge. And if tenants at will should be so imprudent as to engage in substantial and expensive improvements, they are often obliged to quit their farms, or

* Or that the profits of farmers would not be greater than under a free trade.

pay a second time, by an advance of rent, for their own ameliorations. Nay, in some cases, a landland can oblige the heirs of a tenant, either to surrender a valuable lease, quit more profitable and congenial employments, and commence farming, or submit to the management of an overseer, at a distance of two or three hundred, or, perhaps, as many thousand miles. And indeed, in many cases, the smallest breach of covenants, a breach not at all injurious to the landlord, subjects to his power much of the tenant's property. Such regulations are highly injurious to landholders, and the community, by preventing the investiture of a greater capital in agriculture.

Having said so much as to the superior importance of agriculture, I must now declare, that I am far from being hostile to manufactures and commerce. All I contend for, is the propriety of placing these employments on the broad and permanent basis of a more extensive and able agriculture.

It is certainly true, that most of the recruits for our regular army are raised in manufacturing and commercial districts; it is equaly true, however, that countrymen, in general, are the most steady, temperate, hardy, and patriotic soldiers!

When R. W. asserted, that "the most commercial nations have always been the most powerful," I presume he suffered himself to be a little misled, by the laudable exultation, in viewing the vast power and commanding attitude of his own country. A comparison between this country, however, and any other upon the face of the globe, will not determine the the matter. We should recollect that great Britain and Ireland is an agricultural and commercial nation, that her constitution of government far surpasses any other, and that, by her insular situation, the very superior population of her enemies cannot act against her in so effectual a manner, as if she had been placed upon the continent of Europe.

Although history proves, that the riches and enervated state of many commercial countries, where agriculture was either despised or neglected, have tempted their poorer neighbours, whose employments where chiefly of a rural nature, to attack and conquer them; I shall, at present, adduce the case of Carthage only. This extensive, rich, and very powerful, commercial republic, (which was situated in Africa, upon the southern shores of the Mediterranean) colonized abroad, and paid less attention to agriculture and the extension and improvement of her territories at home, than her rival republic—ancient Rome.—Her troops were partly foreign mercenaries, but mostly her own citizens raised in commercial places. Her fleets, for a great length of time, commanded the seas; long did she withstand the attacks of her less commercial enemies, the Romans. Sometimes her victorious armies overran the greatest part of Italy, and appeared

almost at the gates of Rome.—At length, however, the *native* and *hardy* forces of the latter state prevailed; the territories of Carthage were conquered, and her magnificient cities reduced to heapsof smoking ruins.

It would, however, be unjust to assert, that the circumstances of this country are, throughout, similar to those of ancient Carthage; the difference is very great in our favor. Our vast power has enabled us to defy the utmost efforts of, even our combined enemies; and it is highly gratifying to reflect, that we possess substantial means of augmenting that power, by the extension of agriculture and improvement of our waste lands; and that these means will be brought forth, in a considerable degree, by the regulations of last year respecting the importation and exportation of corn.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

P. S. An acquaintance of mine, whose practice in the agriculture of this county and knowledge in accounts, surveying, &c. render him particularly fit for the management of a large estate, as land steward, is, at present, desirous of such employment, in Great Britain or Ireland, if it can be obtained with a salary sufficiently liberal. Another, who was, a few years ago, in the service of the first Agriculturists in the county, and who I think, would well discharge the duties of Farm Steward or Bailiff, on a farm of from 500 to 1000 acres, or more, is now desirous of employment in some of the Southern counties. He is not married.

If any applications be made to you, for further particulars respecting the above husbandmen, I shall be obliged if you will have the goodness to inform me; after which, probably the parties themselves would open a direct correspondence.

A. N.

ON THE COURSE OF CROPS, IN ANSWER TO A YOUNG FARMER.

To the Editor of the Agricultural Magazine.

SIR, *Fakenham, Feb.* 7, 1805.

IT is too frequently omitted by many of your correspondents, who write for information on various subjects connected with agriculture, to mention the kind of soil on which they wish to introduce the practice after which they enquire. Such, unfortunately, I observe to have been the case, in your last number, with the gentleman who signs himself "A Young Farmer." He solicits the attention of your Norfolk friends to his enquiries after the culture of barley succeeding a crop of turnips; but neglects to say, whether he is, himself, a cultivator of a soil

similar, in its nature, to that of Norfolk. Now it is obvious, to the most cursory observer, that turnips either fed upon, or drawn off light or strong land, must leave the field in a very different state from the other, and that the one will attain to as high a state of *tilth*, or pulverization, from one ploughing only, as the other will receive from repeated operations. Leaving, therefore, to the experienced cultivators of the latter, the task of offering their sentiments to your friend the young Farmer, upon the important subject of sowing barley in such soil; I beg his acceptance of the following report of the mode usually pursued, in this county, where the soil is (with very few exceptions) universally what may be termed "light land," descending through all the intervening gradations and shades, from a deep rich loam, to sheer gravel, or blowing sand. On each, and all of these, our farmers find their account in a frequent repetition of the barley crop; and the same preparation for it is usually made upon them all.

It is not uncommon, in this neighbourhood, to venture a barley course *after a crop of wheat*; but it is not considered as good husbandry, nor in fact does it constitute any considerable part of the *general* practice of the county; a good crop of turnips being justly esteemed the best and surest pledge for an abundant produce of barley the following year.

The earlier the turnips are off the land, the less, assuredly, is the virtue of it exhausted; sheep are, therefore, put to them as early as the latter end of September, and if the field should not happen to be in very high condition, they are permitted to feed the *whole* off; but if the occupier has any doubts of his succeeding crop being lodged from excess of luxuriance, he prudently carts off the bigger sort, for the use of his bullocks or dairy, into another enclosure, or his yard.

We will suppose the greater part of the crop is consumed by the latter end of February; (the two following months, of March and April, demand, however, nearly half the whole crop, unless some part of the stock is by this time gone to market) a slight ploughing is now given to bury the *tethe*, and break the hard trodden surface of the earth; a second ploughing may be had (at the full depth) in time to receive the benefit of a March frost, which wonderfully aids the plough in accomplishing the purpose of pulverization. On a *third* earth, the grain is more frequently sown by hand and ploughed under by a light one-horse-plough, or drilled at a moderate depth with Cooke's machine. This process, however, is not always pursued; for where good tilth is obtained by one or two *earths* (this is our common term for ploughing) a third is esteemed unnecessary. I have seen an excellent crop produced, where only one ploughing could be had, it being late in the season; it was drilled at six inches. In short, I believe the husbandman's

rule should be, to sow his barley whenever his land rises in a fine pulverized state, regardles of the *number* of earths, attending only to this very important consideration, that the season is sufficiently advanced, to warrant a fair conclusion, that frosty mornings are not likely to return to injure the tender plant. It is impossible to fix on any particular day of the month whereon to commence barley-sowing, so much do the seasons vary; the best crop I ever reaped, was sown so early as the *third of March*, 1799, but the soil was, then, on a warm gravel, and the season remarkably forward and kind. I have attended to the foliation of trees, and vegetation of plants, and consider them as no bad directors of the husbandman's labors. I observe the foliation and flowing of the sap, in the oak tree, usually takes place in that season which seems most congenial to the growth of barley. I should recommend, therefore, that this grain be fairly out of the ground, ready to take advantage of the warm weathet, *just at the time*, when *oaks* are usually felled. If the foregoing hints are of the least utility to your correspondent, they are very much at his service; and I beg leave to add, that if he shall consider this letter not sufficiently explicit, or omitting any information of consequence, I shall be happy to attend to him, again on some future occasion.

I am, Sir, &c.

AGRICOLA NORFOLCIENSIS.

P. S. What can "A Friend, to Agriculture," mean by his letter, dated, Jan. 11th, at page 31, of your last number, on the *low* price of barley at that time. Can he really mean to say, that forty to fifty shillings per quarter is a *runious* price to the farmers?

COPY OF A LETTER, FROM J. C. CURWEN, ESQ. TO CHARLES TAYLOR ESQ. ON AGRICULTURAL IMPROVEMENT; AND A NEW METHOD OF PROCURING ABUNDANCE OF MILK IN WINTER.

To the Editor of the Agricultural Magizine.

SIR,

THE inclosed letter, which I have lately received from John Christian Curwen, esq. M. P. for Carlisle, contains so much useful information that I have requested and obtained permission, from him, to give it to the public through the medium of your magazine. Mr. Curwen's public spirit, his zeal for general improvements, and the extensive experiments he has of late years completed, in planting and agriculture, will I hope prove a stimulus to other gentlemen of fortune. Several of the observations made by Mr. Curwen in his present letter, have, to my own knowledge, been confirmed by practice on the continent.

John Street Adelphi, *Feb.* 20th, 1805.

I am, Sir, your obedient servant,

CHARLES TAYLOR.

DEAR SIR, *Workington Hall, Feb. 10th*, 1805.

FROM the experience and knowledge I have of your zeal in promoting and aiding every thing which proposes agricultural improvement, I am induced, without apology, to submit to you a plan I am going to adopt at this place and Belle Isle, in hopes it may in time create a spirit of emulation and exertion. At present our farming system in many parts of the north of England is very defective. I need not observe to you the time it requires to induce persons, who are little skilled in agriculture, to adopt any thing different from their old methods, or to believe, even though they have the appearance of success, that the expence of other modes is not greater than the gain. If by honorary rewards they can be induced to become competitors with each other, I do not think it unreasonable to hope they may be tempted to try experiments, and bestow a degree of labor and attention in cleaning their grounds, which might otherwise long be practiced before them, without a single imitator. To further improvements, I have agreed to give annually to my farmers, at Workington, three silver cups, viz. for the best crop of cabbages, not less than an acre, for the best crop of turnips, and for the best crop of clover, not less than four acres each. For the cultivation of potatoes no inducement appears now wanting at Belle Isle. Having but little in cultivation upon the borders of Windermere, I give four silver cups without limitation but of district, to the best long horned cattle, and to the best crosses of the south-down tup and country sheep, by which I flatter myself a great improvement will be made both in size and wool of our mountain sheep.

Will you permit me to add an account of my proceedings this winter, in my farm? Having had occasion to remark the great want the lower orders of people find, from the scanty supply of milk during the winter months, I have made a trial, whether, with a fair prospect of reasonable profit, it might not be procured by a different mode of feeding. I am inclined to believe, that when hay, alone, is given, a cow consumes two stones weight of 14lb. each in twenty-four hours; this, near large towns, cannot be estimated at less than one shilling; and so to feed a large winter dairy, would require a quantity of ground not easily obtained in the situation where it would be mostly required. The expence and the ground, are both obstacles to this method of feeding. But by applying the ground to green crops, it seems not unreasonable to hope it may answer. An acre of cabbages, reckoning one to every square yard, would produce 4840; these, at seven pounds each, would be 2420 stone; allowing four stone per day, they would feed one beast for 600 days. On reckoning 200 stone of hay to an acre, six acres of land would be required to produce hay for the same period.

Impressed with this opinion, and having six acres of cabbages, twelve of turnips, and some cole-seed, besides one of cole-rabi, I purchased thirty heifers, and began to feed them in October, allowing to each head four stone of green food, being at one penny per stone, four pence, (which pays 10*l.* 1*s.* 8*d.* per acre) four pounds of oil-cake, at one penny per pound, costs four pence; and from six to eight pounds of straw, costing one penny; the expense of the whole food, per day, was nine-pence. I found I had nearly six quarts of milk from each cow, in the two meals; it sold at two-pence per quart. The profit will be handsome if I am no considerable looser, by the sale of the heifers in April. Their condition is at present extremely good, contrary to general expectation, which I attribute to the oil-cake, which is also highly advantageous to their milking. I have sold, and continue selling, from 120 to 140 quarts, daily; and have the satisfaction of believing it has proved very beneficial to the poor, as I have been much petitioned to continue it. I am sensible, neither this, or any other experiment, will become of general utility, till it can be proved by time to answer. By making one acre produce equal to six, or even allowing a third for the aftergrass, say four, it enables the farmer to keep a greater stock than he could have conceived possible; it will reduce the expense attending the milk, and produce a quantity of manure, so as to enable him to bring into advantageous tillage a greater proportion of his farm. If he proceeds upon the same system in summer, and supplies himself with a sufficient quantity of green crop, his cattle will not suffer so much from heat and flies in the day, and he will not have occasion for more pasture than is sufficient to turn out his stock at night, for the benefit of their health. I suppose, the product of green crops, in summer, to be more than as four to one, when compared to pasture. Sanguine in this opinion, I am using every exertion to get a sufficient quantity of lucerne to feed all my stock in summer. My young cattle I send to a distance, where the rents are not a third of my own ground.

It has long been my opinion, that grazing near to towns, where manure can be purchased, is a great loss, both to the proprietor and farmer, as by a different method they might be enabled to maintain four times the stock. Though the expenses are considerably increased, the great saving in rent, with the additional profits, will abundantly repay them.

Under this mode of management, a winter dairy may, I think, be kept near to great towns with advantage; the milk would be of infinite service to the poor, and nourishment to children, and would meet with a certain and ready sale at much higher prices than I have quoted.

I remain, dear Sir, your obedient servant,

To Charles Taylor, Esq. Adelphi, London. J. C. CURWEN.

ON PRESERVING TURNIPS IN WINTER.

Extracted from the 22nd Volume of the Transactions of the Society of Arts, &c. just printed.

THE gold medal, or thirty guineas, at the option of the candidate, was, this session, adjudged to Mr. John Sherriff, of Captain Head, near Haddington, in North Britain, for preserving turnips in winter.

The following accounts and certificates were received from him, and the pecuniary reward paid to him at his desire.

SIR,

OBSERVING that the Society for the Encouragement of the Arts, &c. offer a reward for preserving turnips, and having been in the use of drawing and stacking the whole, or the greater part of my turnip crop, for several years past, in autumn, for comsumption during the following winter and spring; and having found the practice attended with much convenience, economy, and emolument, I have taken the liberty to submit my simple mode of executing this operation in husbandry, with requisite certificates, and an account of expenses, in competition for the Society's honorary reward.

Captain Head, near I am, Sir, Your obedient servant,
Haddington, Oct. 27, 1803. JOHN SHERRIFF.

Charles Taylor Esq.

Rapa solo molli et aere humidulo lætantur.

SATISFIED from observation and experience, that turnips are the foundation of the best husbandry, on almost all soils and situations in the arable districts of Great Britain; and that this crop should always be drawn, except from blowing sands, or light moorish soil; on both of which it should always be, in part, consumed on the ground with sheep; convinced, also, that turnips, if possible, should be off all soils, and the land ploughed up before the middle of December, at the latest, to secure the succeeding corn crop, and grasses, or clovers; with either of which, every field that carried a turnip crop the preceding season should, in almost every case, be sown down; and impressed with the many high advantages attending this practice, as soon as my pea and bean stubbles are ploughed up and sown with wheat, my turnips are begun to be drawn and stacked up for use, during the following winter and spring. If the distance of the turnip field from the homestead, does not exceed a quarter of a mile, two double-horse carts only are employed; and more in proportion to the distance of the turnip-field, or number of hands you may be able to command, to carry on the work. One clever driver is sufficient for two carts, and two for three carts, &c.; one cart being always in the field, loading or loaded. On being brought home, the turnips are instantly tumbled out at the stack, which is done with great facility from the construction of the carts in this district, which, to conveni-

ence and strength, likewise add lightness, to enable horses to move at a smart pace with them when empty. The turnips, tumbled out of the cart, are trimmed of their leaves, and cleared of any earth that may adhere to them, by women, &c. before being put into the stack. Old table-knives do very well for the purpose, and the leaves should be cut off close to the root; the back of the knife being used for removing any pieces of soil that may stick on the turnip.

Women, &c. trim the turnips, and put them into strong coarse wicker baskets, to be carried forward by a man, who hands them to another, who lays them into, or on the stack. The ground on which the turnips are placed, ought to be dry-bottommed. If that is not the sort of soil, where you find it most convenient to make your stack, a quantity of boulders may be put on, regularly spread over the space, the thickness of at least eighteen inches. My corn-rick yard being dry ground, has been used as the place for keeping my turnips in. The stacks have been made about ten feet wide, by driving a row of stakes into the ground, parallel to the wall of the yard, which serves instead of another row. The wall is only about five feet and a half high; and the stakes are driven to the same height. The inside of the wall and stakes are lined with compact bunches, or sheaves of wheat-straw, about ten inches in diameter, placed horizontally on the ground or boulders, and introduced as wanted, during the operation of stacking. A tier of the largest turnips are placed one above another, on the inside of the bundles of straw, more particularly on the side guarded by the stakes, till the pile reaches the height of five feet, from the ground, or from the boulders, if it has been found necessary to spread any over the ground. The inner part of the stack is at the same time gradually made up with turnips put in promiscuously; along which, a plank is laid, and occasionally shifted as the pile rises, for the man who builds the stack to stand on, without bruising the turnips with his shoes. When the pile of turnips is reared in the manner described, to the height of about five feet, it is gradually contracted inwards on both sides, at an angle of about forty degrees, like the roof of a barn; the largest turnips being still piled on the outside, till the roof is so far completed. The stack is every day so far finished in height as it is extended in length, and is covered with wheat-straw thatch, roped down with twisted bands of oat-straw, before evening, to secure the stacked turnips from rain, that may fall during the night. The thatch is laid on a foot thick, and secured in the same simple, effectual manner that corn-ricks are covered in Northumberland, Berwickshire, and the Lothians; with this difference only, that the straw is four times as thick laid on the turnip, as on the corn, to exclude cold as well as wet; and that there is a rail of wood stretched, hanging horizontally at the

tops of the wall and stakes, to fix the straw ropes to, that secure the thatch on the stack. The end of the stack is every night covered with bundles of wheat-straw, which are removed next day, or when building recommences.

Three men are employed in the field, to load and dispatch the carts, occasionally assisting four women, who draw the turnips, striking off the tap root with a strong heavy knife, leaving the turnips on the tops of the drills, as drawn and chopped, with the leaves all in one direction, to be readily laid hold of by the men who lift them up to the cart. The horses pass along, in the space between the two rows, or drills, of the turnips, which may be drawn; and being at thirty inches apart, and the extremities of the wheels about five feet from each other, it is evident, a wheel runs in the middle of each space, between the contiguous drills, without injuring the turnip, whether drawn or not. When the cart is about to turn, after being loaded, the men move the turnips, to make room for the horses, putting them into the cart as part of the load.

Expenses of drawing, carting, trimming, stacking, covering, &c. a statute acre of good turnips; at the distance of not more than a quarter of a mile from the stack.

	£.	s.	d.
Two double-horse carts, and one man	0	16	0
Five men, loading, drawing, building, &c	0	8	0
Seven women, drawing and trimming	0	4	1
Two girls, trimming	0	1	0
Four ditto, and boys, ditto	0	1	8
Twisting ropes, drawing thatch, thatching, waste of thatch, stakes, &c	0	3	6
	1	14	7

The above is a fair average of the expense of securing somewhat more than twelve and a quarter statute acres, last season, which was all I drew; and one field of two acres, one rood, thirty-three perches, was so far distant as to require three carts and two drivers. That field, however, was first drawn, and the weather being fine and moderate, more work was done in proportion to the length of the day, which was also longer. Women and children cannot, indeed, exert themselves with spirit, in raw, cold, weather. October is, perhaps, the best month to draw in. It is a question with me, whether the average of the acres that are under turnip in the island, if the weight exceeds 24 tons, does not cost more, merely for drawing and carting only, when it is considered that this operation is performed often in cold, frosty, and stormy weather, and that frequently, much snow may be to be removed before the turnip can be seen. If no snow has fallen before the frost sets in,

the turnips must be hoed up with instruments for the purpose. Many are cut, and much left in the ground, of the lower part of the root. After all this labor, what is obtained is frequently no better than a lump of ice, environed with earth; frozen so firmly to its surface, that nothing but thawing, in cold water, can ever render it fit to be touched by the mouth of any animal whatever.

Admitting, however, the expense of drawing and carting to be the same, all that can be stated as extraordinary expense, is the cost of trimming and stacking, which amounts to eleven shillings and three pence an acre. On the other hand, we have the advantage of having fine, fresh, clean, turnips, always secure, and at command, to carry on feeding and breeding stock; at the same time, that all loss by rotting in the spring months is prevented, which is frequently thirty, and even fifty per cent. on all the crop that remains in the field, after the first of February. Above all, the practice of drawing and stacking before winter, by admitting of early ploughing to mellow the soil, secures a valuable corn and succeeding clover crops. When all these circumstances are maturely weighed, the expence of eleven shillings and three-pence will, to every enlightened agriculturalist, appear but trifling, to obtain such very valuable advantages. The writer of this little essay has had the satisfaction of having excellent crops after his turnips this season, while almost every other crop in the neighbourhood was indifferent; and some on rich, dry loams high-rented, by being sown in the months of April and May, on the spring ploughing, after turnips, eaten off with sheep, were so miserable, as evidently to pay nothing after expences of labour, seed, and reaping. The young clover, too, sown with these crops, has almost entirely perished from want of moisture. The loss of the crop of clover seed is not all; the system suffers a derangement, the consequences of which none but practical men can calculate.

One thing remains to be noticed, which is, that twenty-six young cattle, cows, and yearling calves were kept near three weeks on the turnip trimmings with oat-straw along with them, to their improvement; and that many more might have been kept, had they been provided in time. A quantity of good manure was made; and estimating all advantages arising from the consumption of the leaves in this way, at no more than three-pence a head, per night, for the keep of each beast, the amount will exceed the expense of trimming and stacking the whole crop of turnips on twelve acres and a quarter. The leaves that remain on turnips, after christmas, are either unfit to be eaten, or wasted by the frosts.

I. SHERRIFF.

Certificates of the truth of the above particulars were received from John Hepburn, of Bearford; David Skirving, of Garleton;

and John Donaldson, of Haddington; stating, that the quantity of land in common turnips was nearly ten acres, and the average weight on sixteen perches was two tons, eight hundred and thirty-six pounds avoirdupoise: that on another field of two acres, one rod, and thirty-three perches, Mr. Sheriff had an excellent crop of roota baga, or Sweedish turnip, superior to the average of the field abovementioned; that the whole of Mr. Sheriff's turnips were drawn and stored before the 26th of November, and the land on which they grew ploughed before the first of December; that the turnips were consumed during the months of December, January, February, March, April, and May last, by cattle and sheep, and the roota baga by horses, milch cows, and pigs; that what remained of the turnips in the first and second weeks of May were in excellent condition; that the field on which the turnips grew was sown with wheat, about the 8th of March, last; and that on which the bagas grew about the 10th of the same month with barley; that both the crops were good, and superior to any they had seen, after turnips the last crop; that they consider the wheat crop equal to thirty-two, and the barley crop equal to fifty-two, Winchester bushels, on the English statute acre; that both fields are sown down with clover, which have succeeded well also; and that they attribute the success of the clovers, as well as corn crops, to the early removal of the turnip, and the land being ploughed up to be mellowed by the winter's frost, which made the soil retain the proper moisture.

By a second letter from Mr. Sherriff to the Secretary, dated May 17, 1804, he states, that he has the satisfaction to say, that to ascertain the real value of the clover grasses, he let them to public venders, for pasture this season, from the 1st of March, last, to Christmas next, for six pounds, sixteen shillings sterling, the Scots; or five pounds eighteen shillings and nine-pence the English statute acre.

IMPROVEMENT OF WASTE LAND.

EXTRACTED FROM THE TWENTY-SECOND VOLUME OF THE TRANSACTIONS OF THE SOCIETY OF ARTS, JUST PUBLISHED.

THE silver medal and fifteen guineas were this session voted to William Pearce, of Turf-House, in the parish of Landewednack, near Helston, in Cornwall, for his unremitted industry in improving a quantity of land lying waste, from whom the following communication and certificates were received.

This letter was accompanied with a plan which may be seen by application at the Society's Rooms.

SIR,

To apologize when pleading in the cause of humanity and industry would be an insult to the members of a liberal institution; I shall, therefore, only beg excuse for the style of my narration.

I yesterday took a walk of about two miles from this station, to satisfy myself respecting a remarkable instance of persevering and indefatigable industry, which I had heard of, and found as follows: Twelve acres of barren downs had been taken from the common, seven or eight of which were in a high state of cultivation, and the remainder in a very forward state of improvement. In order to vary as needful the different kinds of produce, this space was divided into eight different fields, which required seventeen fences, the greater part of which were made with stone and put together in a masterly manner. But a great part of this industry is hid, for most of the downs, being swampy ground, and some very shallow, in order to remove the first inconvenience, the different fields are obliged to be intersected with various drains, which empty themselves into the ditches that have been obliged to be dug round the margin of each field both for this purpose: and, in order to give greater height to the fences, on each side of every bank pitches are dug, and in the gateways bridges are made, able to support a loaded cart, that the water may freely run off. The land produced, in 1803, ten cornish bushels of barley, nine trusses of hay, two hogsheads of oats, and ten bushels of wheat, besides pasture for cattle. This has been the work of eighteen years time, by one indefatigable man, who began it in the fiftieth year of his age. I have to add, that his dwelling-house and outbuildings, including the turf-walls, of which they are composed, the laying of the rafters, and the thatching, are all executed by himself, though he was only bred to husbandry.

His industry is surprising, as, independent of his great labour in procuring manure from a distance, which has required his travelling 200 miles, he brings coals for different persons, of which I am one; the distance from me is eleven miles; he has brought coals so far on my account eight times since last July, which add 176 miles more.

The ground he is improving is the property of sir Christopher Hawkins; and though labouring under a natural infirmity in his hand, which obliges him to conduct the plough with one hand only yet he continues indefatigable in his exertions.

Lizard Signal Station, near Helston, in Cornwall. I am, Sir, your most obedient servant,

THOMAS HUMPHRIS,
Lieut. Royal Navy.

Feb. 22, 1804.

To Charles Taylor, esq.

Sir,

I Beg leave to lay before the society for the encouragement of arts, &c. the following narration, hoping, that though the extent of my improvements are not great, yet they will not be considered undeserving their notice, as it has been to me a most arduous undertaking, and has required my unceasing and indefatigable labour, and which it still requires. For a part of my manure only, which consists of sea sand, I have to go two miles for; and my average annual quantity being fifty load, for this one article, I must of course travel two hundred miles, independent of my labour in loading and procuring it. What other labour is unavoidably necessary, in order to carry on the series of husbandry, needs no comment from me to your society. I chiefly rest on my labour, for now upwards of eighteen years in this particular branch of agriculture, to recommend me to your society, and as having added my mite towards the improvement of waste grounds, the manner of my proceeding I shall endeavour to make as plain as possible, for the information of others. I was induced to this undertaking from a great love of husbandry, a wish to serve my family, and a desire to employ myself in that part of agriculture, which I thought the most useful to my country, and beneficial to mankind.

I still find the same strong propensity in my mind, but my corporeal abilities fail me, being in my 68th year. If I could have kept a man all this time, I suppose I should have been able to have made four times the improvement I have, as the odds of an additional hand to *one*, need not be mentioned to your society; but on the contrary, when I begun, and for some years after, this to me arduous undertaking, I was obliged to work for others five days out of the week, to obtain food for myself, a wife, and seven children, viz. six sons and one daughter, the former of which, as soon as able, went into the service of their country, in which two are now employed, and two lost their lives last war.

As to property, when I first began this undertaking, I had none, except one mare, and the shilling per day I earned by my labour, at which I used to work hard, in order to finish it as soon as possible; not to leave off work, but to go to still harder, that of my own undertaking in improvement.

The manner I proceeded in clearing the land, which was chiefly swamp, and produced what in general grows on these kind of commons was as follows: The surface for the most part was less than six inches, under which was a bed of loose stones, of various sizes, from half a pound to three hundred or thereabouts; but the latter generally appeared above the surface. To clear away these was certainly a work of great

trouble; but still it assisted me in another respect, and on this account, it was so far an advantage; for, on removing these stones from the natural bed, they were carried to places, in which they might be handy to face my banks, the extent and labour of which will be seen by the imperfect though nearly correct plan which accompanies this narrative, as I thought it might tend to throw more light on the subject, than my still more imperfect narrative. My method was, first to inclose, in part; to do which I was obliged to collect materials, that is, turfs and stones, as I could procure them, which cost me great labour; after which, when I came to clear away to improve the grounds, the stones, as before mentioned, did, by being used as I have said, separate my *extreme* inclosures and divide the grounds into different departments, and assisted me in the two grand objects of clearing the ground, and making the banks. As the plan is too small to give it in scale, it may be necessary here to mention, that the banks are between five and six feet high, four feet broad, as I built them to be durable, and though not exactly so, still very nearly in as straight lines as drawn in the plan, having made them so, because, for a variety of reasons, they are more convenient.

In the spring, as the land became dry, I began to cut up the surface of the ground, exactly the same as turfs for fuel, which, being placed upright with their upper ends touching, were left in this manner to dry. A soon as this was accomplished, they were placed in piles loosely together, and burnt. I then proceeded to clear under the surface the loose stones as mentioned; which, on being removed as before stated, I came to a strata of rather light, loose clay (there are some exceptions to this of not so good a bottom) among which at times stones were likewise found. For this reason it became necessary, first to break all this ground up by hand, not being able to use the plough; which, when done to a convenient depth to answer the purposes of tillage, was manured with the before mentioned burnt materials, to which at times something more was added. The corn was then sowed, and turned in with the plough, wheat, oats, and barley in succession, with the latter of which grass seed was sown. It was then suffered to lay fallow for three or four years, at the end of which time I used the common methods of ploughing, harrowing, and manuring. This latter requires great labour for the reasons above mentioned, before it is brought into a proper state for tillage. After this, a regular succession of different kinds of grain, fit to keep the ground in the best state for cultivation is carried on. After having improved as much as required my more immediate attendance, and the produce of which tended greatly towards the support of my family, I began to erect a dwelling on the spot, the walls of which are composed of turfs, the roof rafted and

thatched by myself; to which has been added, as I was able, barn, stable, cart-house, and other convenient out houses for my cattle, &c. &c. which at present consists of three horses and one cow rising five years, two heifers rising three and four years, two steers rising two years, and one yearling. To which may be added, as another part of my small stock, a few bushels of different kind of grain, and a small quantity of hay, plough, harrow, cart, slide wheelbarrows, &c. &c. &c. of tools necessary for husbandry.

For the more particularly understanding the extent and nature of my inclosures, with the various kind of tillage they are applied to at present, I hope the plan I have sent, though imperfect, will be found sufficient. I have effected the whole improvement by my industry, as, when I began it, I was worth no more than the mare before mentioned, and the shilling I had earned on the first day of my operations. I have a large swelling on my hand, which I was born with, and which extends from the middle joints of the fingers on the left hand to nearly the elbow. Though this has not rendered my hand quite useless, yet it is so in a great degree, as I cannot use my fingers to take off my cloaths, but am obliged to be assisted; and within these last few years it gets worse, but still, thank God, it is of use to me in my more laborious calling.

I am, Sir, your obedient servant,

Charles Taylor, esq. WILLIAM PEARCE.

These are to certify that we verily believe the above to be a true statement, most of it coming under our own knowledge.

JAMES KEMPTHORNE. R. N.

Landewednack, THOMAS HUMPHRIS.

March 13, 1804. *Lieut. Royal Navy.*

ON SPRING WHEAT.

To the Editor of the Agricultural Magazine.

Sir,

THE board of agriculture having most judiciously, at this very critical season of high price, offered premiuns for the growth of spring wheat, I shall trouble you with a few remarks on the best mode to be adopted for its culture. It has been, I believe, generally observed, that light loams, or at least dry, healthy soils are most proper for spring wheat, and that the success with it has been very indifferent upon clays, or cold, wet, and baking soils. Of course, the best of the turnips and barley soils will be chosen, as most fitted to the purpose. Indeed such will probably be the only vacant soils, and as the barley crops have been abundant for two seasons, a substitutionary wheat will be advantageous. I hope every farmer, on soils of this description, so well fitted for the drill,

will adopt that mode, or at least set the wheat by the dibble, not only as giving the crop the best chance to succeed in so short a time, from the air afforded by the spaces, but on account of the vast saving in the seed, in the present high price and scarcity of wheat, a matter of much consequence both to the farmer and the public. The cultivatiors of their own property, who may have lands lying in fallar, will do well to break a rule on this occasion, and put in spring wheat immediately, which, being set, will leave spaces for the hoe, that they may continue throughout the spring cleaning their lands. Tenants, indeed, tied up by covenants, cannot do this, without permission from their landlord. I have never tried seeds with spring wheat, so cannot answer whether it would be worth while to broad-cast the wheat on that account; but I have in many instances seen the success of sowing the seeds in autumn, after harvesting the corn-crop, the bulk of clover being far greater the following year, than any which had been sown with corn. The Siberian wheat, or the produce of such, is doubtless the most proper spring seed; next, the white, or egg-shell wheat, and the cone, or bearded wheat, will answer the end. Some, I am aware, has been sown which never came to any thing, even in the grass, but the defect I believe was occasioned by the dampness and coldness of the soil Should this happen, or should the seed be purchased at a high price, my argument is good for drilling or dibbling, in which mode a bushel per acre will generally suffice. The gain upon a crop of spring wheat will, in all probability, be considerable, since our consumption must infallibly touch so nearly, after a harvest like the last, the utmost quantity we shall be able to procure.

I am, Sir, your constant reader and very humble servant,

Sussex, Feb. 18, CLERICUS ET COLONUS.

ON SHEEP OF THE SPANISH CROSS.

To the Editor of the Agricultural Magazine.

SIR,

YOUR correspondent, Pastorius, has fallen into a very usual error; he has been writing copiously on a subject, only one side of which seems to have come within his own observation; and to that side, a common consequence, he manifests a strong prejudice. I have hitherto kept partly new Leicesters, and partly South Downs, upon a light stony, turnip soil, but, of considerable fertility; the improvement in wool and general enhancement of the price, have led me to suppose I can better myself; from which motive, I have engaged a Spanish tup for the season. It is the property of an improver, of the highest respectability, and from a ram and ewe both bred in Spain. The following experiment in this line, proposed by Mr. Lawrence, in his late

publication, I think not only curious, but one of that description, which would, on repetition, put an end to all uncertainty in the business. With your leave, Mr. Editor, I will make an extract from it, which may induce some of your friends to put it in practice.

" On what foundation does the opinion rest (demands Mr. L.) that rich soils and marshes cannot be advantageously sheep-stocked but with the large and long-tailed wooled breed? On that of practice, or custom, which may be either right or wrong, for any thing hitherto proved to the contrary by fair experiment. I must acknowledge I have ever been a partaker of the prejudice in favor of large stock, but I have exceptions in my mind, and should be glad to be informed of the result of some such experiment as the following. Twenty Cartwolds, Warwick or New Lincoln (byDishley tups) two year old wedders, of the average size, against the same store weight of Spanish South Downs (first cross) of like age; each lot to be wintered together, in the usual way, and in the spring to be turned into the richest marsh-keep, and slaughtered at the end of five months.

" In an experiment like this, no mode can be fairer, or more likely to demonstrate to us the desired results, than to place on measured portions of grass, equal in goodness, either the same living weight of sheep, in each lot, or even the same store-weight determined by capable judges. To make up the store-weight of 20 large sheep, would be required, we will suppose, 30 of the small; and we may again suppose, within the line of probability, that the average weight of the large, when fat, would be 11 stone or 220 stone the 20 sheep; the average of the small, when fat, 7 stone 4lb. or 225 stone the 30 sheep. The small mutton would be sold at market, for full four-pence, per stone more than the large. The wool of the 20 large sheep at 9lb. the fleece, or 180lb. at 1s. 6d. per lb. would amount to 13l. 10s. The wool of 30 small sheep, 4lb. the fleece, or 120lb. at 3s. 6d. per lb. would amount to 21l. Should thirty small sheep consume more grass than the twenty large, in course the surplus would be charged to their account; on the contrary, some assert, that as it is possible that thirty-two small sheep would be required, in this experiment, to make up the store weight of the twenty large, even in that case the former would not require more food than the latter. Experiment would clearly decide this important point. Again, in great probability, the small sheep might make an average eight stone of mutton. If, of the larger species, still larger individuals should be chosen; as for example, a score which would average at 15 stone of mutton, a greater number in proportion of the small stock, would be required to complete the store weight. For curiosity sake let us speculate on the result of a similar experiment; the small sheep being pure Spanish, more than 35 of these would be required to make the store

weight, but say 35, which being fat, would at 6 stone 4lb. each, make a total weight of 227½ stone; worth more per lb. in the market, than any mutton we have in this country. The wool at the present price, might fairly be reckoned to fetch near, or altogether, 35l. These *paper* results are extraordinary; but the sequel is still more so: even handed, twenty against twenty, the Spaniards, at six stone four pounds of wool, at the present rate, will equal within a few odd pounds, the value of the large sheep at eleven stone each. By improving the pure Spaniards, *secundum artem*, we shall obtain a heavier carcase and more wool, from the same quantity of food."

Pastoricus appears to have been led into a variety of errors. No favourers of Spanish sheep ever pretended to the idea of their superseding long-woolled sheep; and he has not fairly stated the case of weight in wool The Leicester fleeces, at nine-pence per pound, (an average, which, by the way, is seldom attained, at least in my neighbourhood, where seven pounds is the more usual average) is wool simply washed; the average of fine wool; as by him given, I presume, is clean scoured.----Now, in scouring, one half is lost: in simply washing fine wool on the sheeps back, only one ninth.

I am, Sir, Your obedient servant,

P. S. Beg that we may have the Magazine in good time, as through the negligence of some persons concerned in the delivery, they were later than usual, last month.

ON BLIGHT AND SMUT IN WHEAT.

To the Editor of the Agricultural Magazine.

Sir,

THE methods taken with this interesting and much agitated subject seem, by no means, likely to bring it to a satisfactory decision. Mr. Lawrence's ridicule, in the New Farmers' Calender, of preventing *blight or mildew*, by preparation of the seed, seems to have been generally successful; but, in respect to his opinion, that *smut* originates in the same cause, and is equally incurable, he is still in a minority; and I must for once acknowledge, that I wish he had been more explicit on that topic, and on the curl in potatoes; since, although he appears to have taken the pains thoroughly to convince himself, he ought not to expect the conviction of his readers, without a thorough and minute explanation. With the view of throwing as much light as possible upon the matter, if not with the hope of bringing it to a speedy issue, I beg leave to propose the following explanatory queries to any, or all of your farm-

ing correspondents; reminding them, at the same time, that the greater variety of answers, the more it must necessarily turn out to the information and instruction of all, since knowledge is divided into infinite portions, and no man can know them all, and there is room even for each man's observation to take a different turn.

1st. What is the difference or distinction, between blight and mildew; and what are their separate characters? or if one and the same thing, what are its phenomena, or appearances? Describe, particularly, the marks of this disease, as they appear to the eye.

2nd. At what stage of the wheat's growth doth the disease first appear? Does it always continue perceptible, until harvest? or is the corn freed from it occasionally, and if so, by what agent?

3d. On what ground is the cause of *smut* said to be different from that of *blight* or *mildew*? At what period does smut first attack wheat, and what are its characteristic marks? Is it ever removed during the growth, and what is its appearance in the ripe ear?

4th. It is said, that the vesicles, or bladders, or smut-balls, as they are commonly called, discolour the wheat only by being broken by the flail; and that, were it possible to pluck them all out, the wheat would remain of its natural hue; such being the case, is wheat, the kernals being black-ended, or tipped with that colour, before threshing, denominated *smutty*, or not?

JAMES BRIGHTLEY.

Heddon Place, Feb. 10.

P. S. Your old correspondent, Agricola Northumbriensis, was, I conceive, rather off his guard, in penning such a sentence as the following: "The grand desideratum upon many "farms, is not to be furnished with the means of tracing the "smut to *its cause*, but with the most cheap, convenient, and "effectual mode of prevention." I must own I should have no great faith in a doctor's prescription, who was in the dark as to the nature and cause of the disease. Can we have a better illustration, than the old burning and liming, to prevent *blight*, before the *cause* of blight was explained?

The following Letters are received from two valuable Correspondents, justly expresing their indignation at the illiberal Criticism contained in our last Number on the Farmers of the North.

The Conductor having for some time been very much indisposed, was obliged to avail himself of the assistance of a person, to whom the article alluded to is solely imputable. At the time of its publication the Conductor was deprived of his eye-sight; but when he was enabled to read it, it was to him a subject of much regret, that any thing should have appeared detrimental to the character of a class of men, whom he has ever held in the highest estimation; considering any communication from the Farmers of the North, as a valuable acquisition to his work, and beneficial to the interests of agriculture.

To the Editor of the Agricultural Magazine.

Feb. 15, 1805.

SIR,

YOUR Magazine for last month has reached me sooner than usual; yet as you request your correspondents to forward their letters so as to reach you, at latest, on the 18th day of each month; and as the post will, within an hour, leave this part of the country, I can make but a few remarks for your next number; though I am much inclined to condemn, at considerable length, the observation of your reviewer, at pages 57 and 58, of your last Critical Catalogue. Mr. Forsyth's work I have not seen, and therefore cannot give an opinion as to its merits; but from what he has said as to the farmers of Scotland, and the abilities they have displayed in another work, I must tell him, in plain terms, that I suspect he is as ignorant as he has represented Mr. Forsyth: at least if he understands the "theory," I think he knows but little of the practice of husbandry, or he would not, in so gross and illeberal a manner, have misrepresented the conduct of Scottish farmers. That slovenly and indifferent cultivators may be found in Scotland as well as in England, I do not dispute; but that Scotch farmers, in general, will be disgraced by comparison with those of England, is what I cannot allow; and when this critic shall descend from generals to particulars, I will endeavour to maintain my opinion by *facts* and arguments. If he does not support his censure by something of a more convincing nature than illeberal assertions, the opinion I have given of his agricultural knowledge will rest on a secure foundation. His sentiments and manner appear to me so different from those in almost every other part of the critical catalogue of your volumes, that I think, he has but seldom offered his opinion through the medium of your work; and I hope he will not, again, "defile" your valuable paper.

That there are "paper defilers" in Edinburgh as well as

in London, is perhaps very true; and the reviewers of Mr. Forsyth's books on agriculture, seem so much out of humour with the copious productions of the Scotch press, that I am really inclined to believe he knows much more of "book making" in London, than of practical agriculture; and that he has, of late, experienced a diminution of profit, from the superiority of Scotish authors on a variety of subjects not at all allied to husbandry. Yours, &c.

PASTORIUS.

To the Editor of the Agricultural Magazine.

SIR, *Feb.* 14, 1805.

I READ with astonishment, in your last Number, the review of Mr. Forsyth's agricultural work, which was lately published by Messrs. Constable and Co. of Edinborough. It is so very different from the other critical parts of your Numbers, that I imputed its insertion to some mistake, or inadvertence on your part; and the letter I have this day received, stating that you have been confined to bed by severe indisposition (from which I am sincerely glad to observe you are now recovering) confirms my idea.

I certainly do entertain a high opinion of the discernment and abilities of Scotish farmers in general, and having, in various instances, stated the resemblance which the management of farms in the best cultivated districts of Scotland bears to the rural economy of this country, I feel it a duty incumbent upon me to express my disapprobation of the indiscriminate and illiberal censures passed upon the cultivation of the north, by the critic in question. For I have warmly defended, and held up as worthy of imitation, in several of your numbers for the past year, the management which has been so successfully practised in Northumberland; and from the late acknowledgments of your candid and intelligent correspondent in Norfolk, a country which has been long celebrated for enlightened farmers and an able agriculture---it is highly gratifying to me to reflect, that I have not wrote in vain.

These considerations, sir, are to me so many powerful reasons for standing forward, upon the present occasion, in defence of the cultivation of Northumberland and the southern counties of Scotland, the farmers particularly pointed at in the review of Mr. Forsyth's agriculture. And I now call upon its author to defend his statement respecting them, by *facts*; if he cannot satisfactorily do this, it is, no doubt, that your readers will consider it as a base and contemptible calumny. On the other hand a plausible defence would, perhaps, lead to important discussions.

As I have not read Mr. Forsyth's agriculture, the damnatory

sentence which your correspondent has passed upon it, may, for any thing I can state to the contrary, be very just. I must, however, remark that while he had it in contemplation to condemn the severe criticisms—"the alacrity at sinking," of Messrs. Jeffrey and Brougham, it was a little inconsistent to be so *extremely severe* upon Mr. Forsyth, without advancing either arguments or facts in its justificaton.

I have read several numbers of the Edinburgh Review. I have not observed a *great* severity on the part of Messrs. Jeffrey and Brougham, who have endeavoured to maintain their positions by reasoning (often) founded on facts, and generally able and ingenious.

I am not, however, qualified to dispute with your correspondent as to books in general; or the comparative merits of the English and Scotch modes of "book-making." I wish to confine the dispute with him to the subject of agriculture; some, however, would perhaps state, that he seems a little *envious*, and because the increasing population and opulence of our northern metropolis, the enterprize of some of her inhabitants, and the distinguished ability of Scottish writers, have greatly augmented the printing business in the north.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

ON THE COMPARATIVE CULTURE OF TURNIPS.

We are induced to make one extract more from the 22nd Vol. of the Transactions of the Society of Arts, by way of shewing to our readers the correct view which our correspondents, Agricola Northumbriensis, Agricola Norfolciensis, and P. J. have taken of that important branch of husbandry, and of communicating information supported by accurate experiments.— EDITORS.

THE Silver Medal of the Society was this session Voted To Mr. William Watson, of North Middleton, near Belford, in Northumberland, for the Comparative Culture of Turnips, from whom the following communication, and certificates were received.

HAVING been long, and pretty extensively employed in agriculture, in a district where the turnip husbandry is much practised, and being satisfied that when the soil is proper, and the management judicious, great crops of that invaluable root are the most profitable means of obtaining luxuriant and productve crops of corn, &c. and of laying a solid foundation for future abundance in the increasing quantity of manure, I have paid particular attention to the different modes pursued in its cultivation. It is with great pleasure, therefore, that in the list of premiums offered by the Society for the Encouragement of Arts, &c.—a society whose patriotic and laudable exertions deserve the most warm and grateful thanks of every real friend to the British empire,—I observe one for the best set of experiments made with a view of ascertaining the most advantageous of these modes; and, having made a comparative trial with great accuracy, I beg leave to request

that you will do me the honour of laying this paper, which contains an account of it, before the society. That there are situations in this kingdom in which eight acres of land may be found of an *uniform* quality, I do not doubt. I must, however, remark, that I never found that number of acres contiguous to each other, or properly situated, for an accurate comparative experiment, in the fallow land of any farm in which I have been concerned, *so precisely similar in soil and condition*, as to induce me to think that I could have exhibited the result of so extensive an experiment as irrefragable evidence of the superiority of any particular mode of culture. Besides, I could not have attended to the minute mixing of the necessary quantity of dung for eight acres of ground, *so as to have rendered it of an uniform quality*, nor to the weighing of *all* the turnips upon that quantity of land, without which, (when I adverted to the difference of weight occasioned even by a scarcely perceptible difference in the diameters of similar solids, I could not have totally divested myself of some doubts as to the accuracy of the result.

For these reasons, I could not *satisfactorily* conduct the experiment on so large a scale as that proposed by the society; and though I am thereby prevented from becoming a candidate for the medal,—a reward by which I should have considered myself highly honoured,—yet I hope this communication will not be deemed unimportant; and that it will, in some degree, forward the views of so distinguished a body.

Every part of the ground upon which this experiment was made, had been managed for a series of years, in exactly the same manner. After being three years in grass, it produced a crop of oats in 1802; in the autumn of which year it was once ploughed. In May and June following, it received three furrows in the in the common way, and was completely pulverized and cleaned; after which it was divided into four flat ridges, about eight yards broad, each ridge containing precisely 4719 square feet. The soil is a dry, sandy loam, mixed with small hard stones, incumbent on a thick substratum of gravel; and the four ridges were so much alike in soil and condition, that I think I may assert, that the most accurate chemical operator could not have proved the smallest difference in these respects. On the 22d of June last, the ridge, No. 1 was manured with dung; immediately after which, the manure was spread regularly over it, and ploughed in. The whole ridge then received a single working, with a light short tired harrow; and *while the moisture was fresh*, the turnip seed was sown with a machine, in rows, upon a flat surface with thirteen inch intervals. About the same hour, the ridge, No. 2, was prepared and formed into small ridges, or drills, upon which the turnip-seed was deposited in rows, with a machine twenty-six inches from each other. *The dung in about*

one third of the raised drills on this ridge was partly left without being completely covered in.

Early the next morning, the ridge, No. 3, was formed into small ridges, or drills, with intervals of twenty-six inches. On the tops of these ridges, a proper machine quickly deposited the turnip-seed in single rows, precisely in the same mode as that pursued in No. 2. On this ridge, however, No. 3, *every atom* of the dung was carefully covered with the plough. Immediately after No. 3 was finished, No. 4 was dunged and sown with turnip-seed, in the usual manner, in the broad-cast method.—Every part of the four ridges was manured with dung of the same quality. It was not *thoroughly* rotten, but had arrived at a more advanced stage of putrefaction than that used by farmers in general; and, in order that its quality might be uniform, it was carefully taken from *one* part of the fold-yard, and well turned over, and mixed in the field.* An equal quantity was applied to each ridge, at the rate of fifteen two-horse cart-loads† per acre. The turnip-seed was likewise of the same quality and kind, and was sown on each ridge at the rate of about one pound and a half per acre. The succeeding weather was remarkably dry, and unfavorable for the growth of the turnips, only one light shower having fallen, from the time the seed was committed to the ground, to the 16th of September following.—Notwithstanding this, however, the whole of the four ridges planted exceedingly well, though not so early as I could have wished; and their progress into the rough leaf, as well as their appearance for some time afterwards, was propitious. From the extreme severity of the drought, however, and the natural dryness of the land, many of the plants in every ridge were killed. No. 1 lost the greatest quantity; No. 2 the next, *especially on those drills where the dung was not completely all covered in;* and No. 4 scarcely so many as No. 3.—Throughout the whole crop, vegetation seemed extremely languid, and the turnips were generally of a small size; the largest were produced on Nos. 2 and 3, *in the drills with intervals of 26 inches.* These intervals were twice horse-hoed, and their adjoining rows of plants were as often cleaned with the hand-hoe. In these rows the plants were left about eleven inches asunder. Numbers 1 and 4, in which the plants were set out at about twelve inches from each other, were thrice hand-hoed with great accuracy. The several operations of ploughing, sowing, and hoeing, were performed in the same kind of weather on each ridge. I attended the whole of them myself, and can safely say, that the utmost precision and impartiality were observed. The four ridges were carefully surrounded with proper rails to prevent

*Dung was the only manure applied.

† The cart was five feet three inches long, three feet three inches broad, and one foot six inches high, in the inside.

damage, and no depredations of any kind were committed.* On the first of this month, *all* the turnips which produced on these ridges were drawn up and carefully and exactly weighed, after their tops and tap, or fibrous roots, had been cut off. The produce of each ridge was as under :----

	stones.	*lbs.*	*lbs.*
No. 1, drilled on a flat surface, with intervals of 13 inches	144	10	14 to the stone.
No. 2, drilled on small ridges, with intervals of 26 inches, and with a part of the dung not perfectly covered in	193	5	---ditto.
No. 3, drilled on small ridges, with intervals of 26 inches, and all the dung well covered in - - - - - - - - - -	211	4	---ditto.
No. 4. broad cast - - - -	168	12	---ditto.

Remarks on the different Modes of Culture.

No. 1.—In this method of management the dung is applied in a manner exactly similar to that practised in the broad-cast husbandry; and experienced agticulturalists well know, that *even after it has been thoroughly putrified*, it cannot be *wholly* covered by the earth in the mode of ploughing, pursued under that system of cultivation. In almost all cases, the harrows are used to produce an even surface after the last ploughing, and immediately before the seed is committed to the ground. By this operation, more of the dung is left upon the surface; and when it is considered that much of it is applied in a long or half-rotten state, it will readily be conceived, that a still greater quantity will be left exposed on the surface of the ground; in which situation it can conduce but little, if any thing, to increase its fertility.

Under this mode of management, the plants may be left at more regular distances in hoeing than in the broad-cast method; but I am *now* inclined to dispute, that that operation can be performed at an expense materially, if at all, less than among those obtained in the latter way. The plants are generally left in the rows at about twelve inches apart, so that an acre will produce about 40,200 turnips, when the crop is a full one.

Nos. 2 and 3.—Some practical agriculturalists, as well as chemical philosophers, have contended, that dung should be *thoroughly* putrefied before it be applied to the soil; and others maintain, that it is more beneficial to apply it in a half-rotten state. Into this dispute, I am not, at present, inclined to enter.

* Except that a mole destroyed a few plants on three drills on No. I.

Let it suffice to say, that a great majority, probably upwards of three-fourth of the farmers, in almost all the extensive turnip districts in the kingdom, apply it either in the latter state, or before it has arrived at a much more forward stage of putrefaction; and if rotten dung (thoroughly putrefied) cannot be *wholly* covered in this common mode of ploughing, it is obvious, as I have before remarked, that, in the other state, a still greater part must be rendered nearly useless by exposure to the solar rays, &c. In the management now under consideration, however, every atom of it may be buried, if the spreaders and ploughmen are attentive. That management is as follows; As soon as the land has been properly pulverized and cleaned, a double-mould board plough, drawn by two horses, is used to raise small ridges at intervals of twenty-six inches, and the tops of about an inch or two broad. All the drills should be equal in size. The height is generally from about 12 to 15 inches; this, however, should in some measure be regulated by the quantity and state of the dung. Immediately after the small ridges or drills are formed, a man with a cart, drawn by one or two horses, lays a sufficient quantity of dung for three or five drills, (in small heaps) while the wheels of the cart run in the adjoining spaces. In this manner all the other intervals are manured. As soon as the dung is carefully spread in the bottoms of the intervals, another double-mould board plough (also drawn by two horses moving in the intervals) splits the ridges along the lines. This operation completely covers the *whole* of the dung, and reverses the tops and intervals. A roller, about ten inches diameter, and four feet in length, drawn by one horse, is now moved along the ridges. It covers two at a time.

The tops are generally about ten or twelve inches broad, in the middle of which the turnip-seed is deposited, in a rut made by the coulter of the sowing machine, which is fastened to the hinder part of the above roller by a cord about nine feet long; the distance between each row of turnip-seed, being twenty-six inches. Thus the agriculturalist is not subject to the waste of any part of his manure, and reaps the superior benefit of having the turnip-seed regularly sown, in a rut of a proper depth, penetrating nearly to the dung in the middle of the small ridges;---a method which seems better calculated to give to the cultivator of the field advantages similar to the rapid and vigorous vegetation promoted by the *hot-bed* of the garden, than perhaps any other mode of culture. The importance of having *all* the dung perfectly covered, is evinced by the result of the above experiment; for, with the exception of a small part of it in a few drills on No. 2, not being perfectly covered with the soil, there was no difference *whatever* between the management of that ridge, and the mode pursued on No. 3. In dry weather, the roller is moved twice along each ridge, first to com-

press the soil, and next to close the rut made by the coulter of the sowing machine, to secure the turnip seed from depradation and drought: but if the soil be so moist as to stick to the roller, it is moved only once along each drill; and some able husbandmen are of opinion, that this is the most advantageous mode *in any state of the soil*; that without the second rolling, the turnip-seed will vegetate regularly; and that, while young and tender, the plants will be beneficially sheltered by the rut of the sowing-machine in adverse weather. Some cultivators form the drills, or small ridges, with a common single plough; and in many situations they are made more straight and neat than with the double plough. With the latter, however, they may, in most situations, be sufficiently well formed, at about half of the expense incurred by using the single plough, *which does not cover the dung better than the other.*--- The skuffler, an implement with three or five hoes, is sometimes used to clean the intervals. Some, however, prefer using two small ploughs of the common form, four or five inches broad at the bottom, and fastened together by screws, which increase or diminish their distance from each other, according to the breadth of the intervals. This implement is drawn by one horse; and by being moved *once* along each interval, cuts a proper quantity of earth from each side of the row of plants; and by proceeding in this manner, a ridge of earth is laid up in the middle of each interval. This mode is the best in situations where the drills are not perfectly straight. Where they are *quite* straight, an implement is used, which, instead of moving the earth from each side of one drill, cuts it off the inner sides of two drills; and in either method the hoeing of the intervals may be performed with equal expedition. A few weeks after these small ridges are formed in the middle of the intervals, they are generally split by a double plough drawn by one horse, the earth being laid close against the turnips on each side. These operations not only destroy the weeds in the intervals, but give to that part of the land the advantages of a bare fallowing, and, besides being greatly cheaper, are much more fertilizing than hand-hoeing. In this mode of cultivation the turnips attain a greater size than under the broad-cast method, or that with narrow intervals; and though the plants are generally left at about eleven inches apart in the rows, which reduces the number on an acre, when the crop is a full one, to about 21,900, the result of the above experiment will not be surprising, when it is considered, that from the properties of similar solids, the weight of well-formed (spherical) turnips are in the ratio of the cubes of their diameters, and consequently that one of eight inches and a half diameter will weigh nearly as much as three of six inches diameter each.--- Nearly all the farmers in this district use their utmost endeavours to obtain turnips of a large size, which, together with the

other important advantages derived from it has long induced them to prefer drilling on small ridges, with broad intervals, to any other mode of culture; and within the last twenty years, it has become the almost universal practice in the counties of Northumberland, Roxburgh, Berwick, and East Lothian,---an extensive and extremely well-managed district; in which, I believe, the rents of land are considerably higher than in any other in this kingdom. In several, the drills are not drawn at right angles to the ridges (I mean the common ridges of the field) but in a diagonal direction; it having been found, that the seed-furrow in the succeeding spring, together with the effects of common harrowing, not only reduces the land to an *even* surface, but that after such management, the crops of corn are *uniformly* luxuriant and productive, the manured parts being, in these operations, well mixed with the soil in the intervals.

I am satisfied, from my own practice, and pretty accurate observation on that of others, that with *considerably less* manure, as weighty a crop of turnips may be obtained by this method of cultivation, as by that with narrow intervals, or in the broad-cast husbandry; and as it is generally difficult to raise as much dung as will manure the whole of the fallow land, at the rate of fourteen to sixteen loads an acre, this, *in promoting the growth of more extensively luxuriant crops, and increasing the quantity of manure for those which succeed*, is an invaluable advantage. Besides, in unpropitious seasons, when, under the broad-cast and narrow drill system, a judicious agriculturist would not cultivate turnips on land he has not been enabled *thoroughly* to pulverize and clean, he would venture to raise them where the spaces between the rows are sufficiently broad for the admission of the horse and plough, under an idea that before their tops covered the intervals, (which they generally do about the beginning of October) his ground could be brought into a proper state.—You will no doubt remark, that the crop I obtained even on No. 3, was but scanty; and conceive, however, notwithstanding that circumstance, that the experiment satisfactorily shows the superiority of the mode of management pursued on that ridge.—By the same mode, I obtained a crop on the land surrounding that on which the experiment was made, which, considering the extreme dryness of the summer, and that it was sown at the same late period of the season as that upon the experiment ground, may be reckoned a very productive one; and, as the soil was not superior in quality, it may be of some consequence to endeavour to account for this difference. The land marked out for the experiment, contained some couch and other weeds, which I wished to eradicate; it therefore received a common ploughing *only a few days previous to the seed being committed to the ground.* The surrounding land had lain for a much longer time between

the last ploughing and the seed-furrow, and contained more moisture at the time of sowing them than the other; and though this, in a humid season, would not have caused a material difference in the crops; yet, in a summer so extremely dry as the last, it was attended with important advantages. To these I may add others: for dung having last year been unusually plentiful, it was manured with about *twenty* loads an acre, and with dung in a very *moist* state; whereas, that applied to the land on which the experiment was made, lost a considerable portion of its moisture by evaporation, during the time of mixing *well*, for the purpose of rendering *all* parts of it equal in quality.—Perhaps it may not be deemed unimportant to state, that the prevailing opinion is, that *very dry seasons are more unfavourable to the turnips raised on the small ridges (drills) than to those produced on land with a flat surface.*

No. 4. The same objections which have been urged against the manner of applying on No. 1. may be advanced against the mode of cultivation pursued on this ridge, under which the plants cannot be left with such precision and regularity as in the drill husbandry.

Expence of each mode of Culture.

THE management pursued on Nos. 1 and 4, is less expensive *up to the time the plants become fit for hoeing*, than that pursued on Nos. 2 and 3 This saving of expence, however, is overbalanced by the cheapness of hoeing under the latter mode, and by the advantages derived from that operation being performed before the plants become too large. The general expence of hoeing broard-cast turnips, in this quarter, is about seven to ten shillings per acre, of 4840 square yards. Those in drills, with narrow intervals, will cost as much; and when it is considered, that an acre of these contains twice as many rows as the same quantity of ground under the broad intervals, and that these intervals are quickly and efficaciously hoed with the horse and plough, it will be readily conceived that the latter mode is the least expensive *upon the whole*. As the turnips under this experiment did not grow uniformly, some parts were much sooner fit for hoeing than others. The person that hoed them was sometimes not employed among them above an hour in the day; which prevents my furnishiug an accurate account of the expense of hoeing each ridge.

So easy is the operation of hand-hoeing the small ridges or drills with broad intervals, that, in this quarter, it is nearly all performed by women, boys, and girls. If we depended on men, as the farmers do in some other districts, we could not *perfectly* hoe much more than one third of our turnip crops.

I am, Sir, Your most obedient Servant,

A. WATSON.

CRITICAL CATALOGUE.

Transactions of the Society instituted at London, for the Encouragement of Arts, Manufactures, and Commerce; with the premiums offered in the Year 1804.

IT is with peculiar pleasure that we always recur to the very respectable annals of this most important and indefatigable association for the encouragement of the arts, whether useful or ornamental. The present volume appears not to detract from those which have gone before it; on the contrary, there are some communications which claim the approbation of peculiar excellence. The typographical uniformity may be considered, by the amateur, as unfavorably affected by the introduction of a smaller type, for the compression of the less prominent matter, but this can be of little consequence compared with the advantages which it is stated to produce.

As we find so much to commend, and so little to censure, we shall proceed to the more acceptable office of particularising the contents of this instructive and amusing work, in analysing which, we shall avail ourselves of the intelligent preface furnished by the erudite Secretary to the Society, Mr. Taylor, the greater part of which we cannot do better then present in the simple, yet expressive language of the writer.

"As a just and honorable mark of attention to James Barry, Esq. who planned and completed those excellent and extensive paintings which decorate the great room of the society, it was voted by them, in April last, 'That his portrait should be prefixed as a frontispiece 'to the 22d volume of their transactions, to be engraved in the line 'manner, and by such artist as he might recommend. That Mr. 'Barry should be applied to, to know whether he would chuse that 'the engraving should be made from his portrait in the Society's pos-'session, or whether a new one should be taken of him for that pur-'pose, or from a model.' In consequence of these resolutions, Mr. Barry attended a committee of the society, appointed for the purpose, and on his opinion being requested, he stated, 'that having in 'his possession the original painting from which his portrait exhibited 'in the character of Timanthes, in the paintings of the Victors at 'Olympia, in the great room, was made, he wished the engraving of 'his portrait to be made therefrom, because it would mark his age, 'and the æra of the painting, and express the character and energy of 'the artist, at the time the performance was undertaken.' The society, in compliance with Mr. Barry's intimation agreed thereto and at his request, the present engraving has been executed by Mr. Heath, under Mr. Barry's direction, and an inscription added, suggested by himself.

"The engraving represents Mr. Barry in the character of Timanthes, (an excellent painter recorded by Pliny) sitting on the base of the

statue of Hercules, holding in his hand the famous picture of the Cyclops and Satyrs. What we are informed by the ancients, of the force and expression of the paintings of Timanthes, perfectly accords with the spirited performances of Mr. Barry.

"The foot of Hercules treading upon the serpent, strongly marks that energy of mind with which Mr. Barry boldly crushes every attempt of malevolence exerted against him, and braves intrepidly the frowns of fortune.

"The limits of our preface will not allow us to pursue the spirit and feeling of this great artist, a reference to his works will appreciate his merits better than our words.

"In examining the articles which form the subject of the present volume, it will be found that additional premiums have been offered in different classes, viz. In the Polite Art class, 32; for Designs and Engravings, executed by the same artist, with the intent that the engraving may be executed with the spirit which actuated the original designers. In the Mechanics, class, 161, for an improved walking Crane, to facilitate the loading or unloading of goods; class 163, for a substitute for elm pipes, now used for conveying water in order to prevent the great consumption of wood employed for this purpose; class 163, for a more effectual method of providing supplies of water, in cases of fires, owing to the mischief which frequently occurs from a want of water at their commencement; class 169, for improving turnpike and other roads, by a judicious application of natural or artificial compositions for that purpose; class 174, for raising the bodies of persons who have sunk under water, an object which has been strongly recommended by the Humane Society, and which was readily adopted to further the views of that laudable institution, the means at present used being frequently insufficient for the purpose. Modifications have also been made in other of the premiums offered, in order to make them more competent for the end designed, as the society are ever desirous to encourage useful objects, or adopt alterations more conducive to their effect.

"In the compilation of the present volume, the public will observe, that the society have been anxious to give useful information, rather than an extent of paper or words, and that with this view, the list of premiums, and various other parts of the volume, are printed with a smaller type, the letters set closer together, and useless certificates abridged.

"To encourage artists in different lines, some engravings are furnished from wood, and others from copper, and the society have endeavoured to explain, by the letter-press and engravings, every improvement, so as to render it intelligent to any person who is interested in the subject.

"Under the head of *Agriculture* it will be found, that John Christian Curwen, Esq. has set a meritorious example to the public, by his judicious and extensive plantations, by very useful remarks on the subject of draining, to prevent the world being misled by popular opinions, and by the introduction of a machine, easily worked, which answers the double purpose of preparing food for cattle from potatoes, and of washing family linen with less damage, and more facility than other machines which have heretofore been employed for that purpose.

" The active duty of a magistrate, in which Mr. Borron is engaged, in a populous county, has not prevented his attention to other useful objects; his paper on plantations of osiers contains concise, but judicious information, on their cultivation to advantage.

" Mr. Plowman's sheep-fold, bids fair to be a valuable acquisition to the public, being much more easily moveable than those in common use, and requires much less frequently to be repaired; it also effectually secures both sheep and hogs from committing depredations.

In Mr. Hutton's plantations of forest trees, amongst other useful observations, *one* cannot be too much enforced, viz. That in exposed situations it is adviseable to plant with considerably smaller trees, and at narrower intervals than in places screened from the winds. Many plantations have been destroyed for want of attention to this necessary point.

The plain and simple narrative of William Pearce, speaks with greater energy to the heart, than the most studied and eloquent oration; it is not a repetition of thoughts and opinions, but a clear detail of well authenticated facts; it tacitly reflects upon those persons who lead a life of indolence, by contrasting it with the great powers implanted in man, by the all-wise Creator, and the general advantage arising to individuals and the public, by the proper use of such powers. The society have brought this man from obscurity to public view, as an example of what can be done under material personal disadvantages, and it would afford an interesting employment for the mind, to calculate in how short a period the waste lands of this united empire, might acquire a complete state of culture, if men equally capable would be equally industrious.

The construction of Mr. Waistell's field gate unites strength, elegance, and lightness; it does not require so much timber as the common gates, and shorter wood will answer to make it. It reflects great credit on Mr. Waistell, for his minute and clear detail upon the subject, and for having pointed out the means of saving an immense quantity of valuable timber, annually employed for this purpose.

" Although the experiments made by Mr. Watson, on the comparative culture of Turnips, drilled and broadcast, were not carried on upon the extensive scale required by the society in the list of premiums offered, yet this communication will found to contain many important observations, and the method of sowing the Turnip Seed in drills, and well covering the manure in the manner he has clearly explained, demands particular attention.

Mr. Shirreff's method of housing Turnips, contains a full account of the mode he has successfully practised to preserve them during the winter months: the principle is not perfectly new, but we do not recollect any publication where it is related with such accuracy, or the advantage of the subsequent crops so well explained.

The preservation of that excellent root, the potatoe, for a length of time in a state fit for vegetation, is certainly a desirable object; the information furnished by Mr. J. De Lancey, towards the attainment thereof, indicates that it may be accomplished, and it is hoped will conduce to prevent the great waste of this vegetable, too frequently made for want of care and attention.

Under the article *Chemistry*, the invention of a madder lake, or a

red precipitate from madder, by Sir H. Englefield, Bart. offers, agreeably to the suffrages of many artists of great repute, an estimable and permanent colour, whether mixed with oil or water. Those persons who have noticed the faded tints in the works of that great artist, Sir Joshua Reynolds, will lament that this madder lake was not known at an earlier period.

The account of a discovery of a Mine of Manganese, in Scotland, for which the public are indebted to Dr. Dyce, is accompanied with some excellent observations by him upon the subject, and an ingenious process of separating the pure from the base metals, by means of manganese. It may be necessary to add, that immense quantities of manganese are employed in the preparation of the oxygenated muriatic acid, for the purpose of bleaching linen and cotton.

Mr. Matthew Gregson, of Liverpool, has been indefatigable in attempting to alleviate pecuniary losses occasioned by fire, for which purpose he has applied the burnt residuum after fires, of sugars, grain, and other articles, to various uses, such as paints, glutens, or varnishes, with great success, and with a disinterested spirit, which does him great honor. An impression in the volume, from an engraving on wood, cut at his own expence, and printed with black, produced from burnt corn, will show that this article will form a useful printing ink.

The present scarcity of oak bark, and the too frequent mischief arising to oak timber, from its destruction for the bark induced the society a few years past to offer a premium for a substitute to answer the same purpose, in tanning leather. The communication of Dr. Howison, and the preparations he has made from foreign barks to answer equally well in tanning, have opened a valuable source of emolument from our foreign colonies. To the same gentleman the public are indebted for his discovery of a process for printing a permanent topical black on cotton, without a mixture of iron in the composition.

Mr. Machlachlan, of Calcutta, has, by his communication of two processes, for producing the beautiful and permanent red colours, dyed on the coast of Coromandel, afforded hints for improving our manufactures, and has shewn that large quantities of Tale may be procured from India, at a moderate expence; an article which we know may be used with great profit and advantage in England.

Under the head of *polite arts* an ingenious mode will be found communicated by Mr. Churchman, of improving the engravings of maps or plans, pointing out, on a simple inspection, the altitudes of mountains, or depths of waters, and the particular parts where the rises or falls are most steep, or most easy to be passed.

The rewards lately bestowed to young persons in the class of polite arts, are particularly enumerated, in page 424 of the present volume; we shall therefore only remark, that to generous and feeling minds, words would add feeble testimonies of the gratification they would experience by attending the annual distribution of the premiums of the society, of viewing the merits of the young candidates of both sexes, and observing the smiles of pleasure which animate the countenances of their friends, on witnessing the rewards conferred on rising genius.

Under the Class of Manufactures will be found accounts of two improved Looms, for weaving similar articles, the one a swivel loom,

by Mr. James Birch, the other an engine loom, by Mr. Thomas Pickard; it is impossible to describe, by words only, the particular constructions of either of them; the society have therefore preserved complete models of each in their repository, and on proper applications, will refer such persons as they recommend, to see the original looms actually at work.

The Class of Mechanics contains a great variety of information in different branches of that department.

"The Dam executed by the Rev. Daniel Pape, points out a means by a speedy and well-concerted plan, and at an easy expence, not only to turn the channel of a river into a new course, but in cases of breaches in sea banks, by an early application of articles easily procured, to prevent the dangers which frequently happen from delay.

Captain Brodie, of the royal navy, has shown an activi and intelligent mind, in pointing out a mode by which Light Houses may be constructed firmly, on sunken rocks at present dangerous to navigators, and invented a plan by which many of our harbours may be rendered much more secure; he has also suggested several other hints, useful in naval concerns.

"The baneful effects which the workmen experience who are employed in grinding painters' colours, have engaged the attentions of many celebrated physicians, and any means that would tend to lessen the evil has been considered as a desideratum; a trial, for a length of time, by Mr. Rawlinson, of his mill for grinding painters' colours, and respectable references to the society of its merits, evince that it will contribute to prevent the mischief.

"The society regard with peculiar satisfaction, every invention which gives a facility to our naval exertions, and we have no doubt that the method proposed by Mr. Seppings, of obviating the necessity of lifting ships, and which has been lately successfully introduced into most of his majesty's dock-yards, will prove also very serviceable in the private dock-yards of the united empire.

From the general use of fire-arms, and the accidents which frequently occur, from faults in their construction, the society have been induced to reward Mr. Dodd, for a lock of his invention, which not only possesses the strength and simplicity of those commonly known, but is infinitely more secure upon the half cock.

Workmen employed in the shoemaking branch have ever been subject to very painful internal diseases, from being obliged in the common way, to do their whole work in a bent posture, an invention by Mr. Thomas Holden, which enables the shoemakers to execute a great part of the work in a standing position, has obviated the inconveniences complained of, and restored several invalids in that business to perfect health.

"The accuracy of time keepers has long been looked upon as a very necessary object to navigators, by enabling them to calculate the ship's way with greater accuracy, and to avoid the dangers which occur in a voyage, the simplicity and advantage of Mr. Wm. Hardy's invention of banking the balance of a time-keeper, will be seen by inspection.

"Probably no business has contributed so much to the general advantage of the extensive manufactures of this country, as that of watch making, by furnishing hints which have been applied to use in our

cotton factorys, steam engines, &c. The make and sale of watches alone, is carried to an extent which will scarcely admit of calculation, and every improvement in their construction, assists greatly in promoting their demand for exportation. Mr. Elliot's improved repeating watch, whether considered as an article for home use or for exportation, will be found to possess great merit, and to save a considerable annual sum to the purchaser.

" Repeated accidents have occurred to the boilers of steam engines, owing to the safety valves being frequently improperly constructed, or that two were necessary to be employed in the same boiler. The improved double valve, invented by the Chevalier Edelcrantz, appears at once to be simple and effectual in its use.

" Mr. Walby's Forge Hammer, worked by the muscular power of the hands and feet, assisted by the weight of the body, shows a very ingenious and powerful mode of human exertion; its action is quick, accurate, and capable of any modification, it bids fair to be a very valuable instrument to those workers in iron who have not money sufficient to purchase, or ample employment for a steam engine, and it may be worked by one, two, three, or four men, as the nature of the work may require. From its quick dispatch, the metal it works will not have occasion to be so often heated, and therefore preserves a better temper. Such persons as will examine it at Mr. Walby's house, when actually at work, will be highly gratified by the inspection.

Under the class of colonies and trade it will give great pleasure to the well wishers of the united empire, to see the endeavours of the society succeed in an object of so much importance as the establishment of the culture of hemp in our colonies.

" Every man is sensible of the necessity of providing supplies of this article for our ships, our navy being the bulwark of this kingdom, and the terror of its enemies.

" The society have endeavoured to draw into one point of view, the articles which serve for the purpose of cordage in every part of the world, and have not formed their opinion on theory, but on actual experiments, many of which are found detailed in the present volume.

" In our last preface, we expressed a wish that government would well consult the propriety of encouraging the culture of hemp in Canada, and its purchase from thence, on fair terms, with ready-money, and by proper agents; the society have proved it may be done, and shown by what means success may be ensured. We cannot too much enforce, to public consideration, this importaat object, as we understand that no means have yet been adopted by government to purchase what has been already grown in Canada, and it is well known that the growers of hemp there have not capitals to give credit upon, nor are the cultivators merchants.

Isaac Winslow Clarke, Esq. of Montreal, has exported from thence to London, upwards of two thousand five hundred pounds weight of hemp. The experiments of Messrs. Rich show that its strength is even more than what is required by government for making ropes; and the experiments of Messrs. Fowlers, show that if properly prepared, they have no doubt it will be equal if not superior to the best assortments of Russia hemp, for twines, &c. Messrs. Schneider and

Mosher have given ample accounts of the expences attending the cultivation of hemp in Canada. Mr. Allan's letter observes, that there is every probability that the culture of hemp for exportation from Canada, will, eventually, have the desired effect: and the more support it receives in its infancy, the sooner will this be accomplished.

"The experiments made by Dr. Roxburgh, of Calcutta, to ascertain the comparative strength of hemp and other vegetable fibres, the growth of the East Indies, do great credit to the genius of this excellent naturalist, to whom the public are so much indebted for many other valuable communication from India; we hope his exertions will be continued in this useful branch of knowledge.

Dr. Anderson's communication relative to the Botanic Garden of St. Vincent, confirms the information noticed in our 21st volume, of additions having been made to the Royal Botanical Garden there, of some valuable land, and the advantages likely to result from it.

"From the public spirit shown by Mr. Baine, in the British Herring Fishery, there appears great reason to suppose that very considerable improvements are making by him in this valuable branch of commerce; the society, anxious to open to the public this source of wealth, have not only continued their bounty, but added to the volume some valuable information, likely to contribute to this purpose, by communicating the best processes employed by the Hollanders in the preparation of the fish when caught.

"The rewards conferred by the society this session, will be found particularly detailed under that head, at page 419, and the presents which have been received from public bodies and individuals, are fully noticed at page 430. During the late recess of the society, additional room has been made in the library, and whilst the society express their thanks for the presents of books, received during the last year, they look forward with hope to a further increase, in a line of knowledge so consistent with their views.

"*The society desire it to be clearly understood, that as a body they are not responsible for any opinion or representation of the facts contained in the following pages. They have allowed the communications to pass in the language and manner of the several persons mentioned, without attempting to make embellishments in the style, to the prejudice of the subject matter.*

The present session commenced in October lost, and will continue till the first Wednesday in June, 1805; the distribution of the rewards of the society will take place on Tuesday the 28th of May. The anniversary dinner of the society is usually at the latter end of March, or beginning of April; previous notice will be given thereof in the public papers.

"The funds of the society are in a very flourishing state, and although it might be supposed that the troubles of war would damp the ardour of private persons in encouraging public establishments, yet with pleasure we announce that upwards of one hundred members were added, the last session, to the list of the society; it should, however, be generally understood, that the views of the society are extensive and important, and whatever sums arise, above the common incidental expences of the establishment, revert, without deduction,

to the public, therefore afford, proportionally, a much more extensive promotion of the arts and commerce of this empire.

"The number of rewards given during the last session, exceed those of any preceding year, and show the extensive influence of the society.

"To every branch of arts, manufactures, and commerce, by which the happiness of mankind can be promoted, the society afford encouragement, and they invite the communications of men of abilities, on the subjects conducive to such purposes.

"The public may be assured that any useful information, addressed to Mr. Charles Taylor, the Secretary of the Society, will be immediately laid before them and considered; a reference to the rewards annally given by the society, will show that the bounty of the society is not confined within the lists of the premiums they offer, they are ever anxious to discover and reward real genius.

An æra of fifty years has been now completed since the institution of this society; as far as human judgment can foretel future events, there is every reason to expect, that the society established for the encouragement of arts, manufactures, and commerce, will remain great and flourishing to many succeeding ages, will reflect an honor upon the merit and judgment of its founders, will preserve its reputation unsullied, and its character highly respected throughout every part of the known world."

We have thus been enabled, from its own source, to give an ample account of the contents of this pleasing volume, so consolatory to the reflecting mind, amidst the variety of uncongenial objects that distract the public attention. And we shall only add our best wishes that the work may long continue in such hands, an able monument of the taste, the talents, and the virtue of our times.

HISTORY.

TRANSACTIONS OF AGRICULTURAL SOCIETIES.

Board of Agriculture.

SPRING WHEAT.---The Board of Agriculture having received information, from various districts, of the benefits arising from the Cultivation of Spring Wheat; and it appearing to the Board that, at the present period, it may be particularly useful to promote that object, have resolved to offer the following Premiums :---

To the person who shall, in the spring of 1805, cultivate the greatest number of acres of Spring Wheat, not less than twenty, Fifty Guineas, or a piece of plate of that value.

Accounts, verified by certificates, to be produced on or before the first Tuesday in February, 1806. It is required that the soil, quantity of seed, sort of wheat, time of sowing, produce, and value of the crop, and the effects of any distemper which may attack the plants, be reported.

For the next greatest quantity, Thirty Guineas, or a piece of plate of that value.

For the next greatest quantity, Twenty Guineas, or a piece of plate of that value.

The Board has been informed, that the true Spring Wheat may be sown successfully so late as the end of April. Several Correspondents on the subject of the last harvest observed, that the Spring Wheat had escaped the mildew in parts of the country where the Autumnal had not, and yielded better.

To the person who shall report to the board the result of the most satisfactory experiments on Spring Wheat, which shall ascertain the soil, the sort of wheat, the time of sowing, the produce, and value; the comparative advantages of this, and common wheat, and any other circumstances useful to be known, a piece of plate of the value of Twenty Pounds.

To be produced on or before the first Tuesday in April, 1807.

The Spring Cattle Shew will be held at the Repository, (late Langhorn's) in Barbican, on Monday and Tuesday, the 4th and 5th of March instant.

Farming Society of Ireland.

The shew of Fat Cattle, Sheep, and Swine, and the exhibition of Seed, Barley, and Oats, will be held at the Repository, 115, Stepten's Green, Dublin, on Tuesday the 5th of March instant.

Each Candidate, or the person appearing for him, must enter his Stock and Corn, with the Secretary, on Monday the 4th, before Six o'clock in the afternoon, and produce them, at the place of shew, before Ten o'clock that night. None will be received before that time. The cattle must be rendered tractable, and led by a strong rope or chain, to prevent accident. No beast will be admitted unless this regulation be strictly complied with.

The Plowing Match will be held at the Lawn, at Huntstown, one mile north of Finglass, on Friday the 8th of March. The Ploughs must be in the field at Nine o'clock in the morning.

By Order, JOHN HAMILTON, Secretary,

Dublin, Feb. 19, 1805.

Lists of the premiums are to be had, by applying at the Board Room, 34, New Sackville-street.

On the 18th of February, a ploughing match took place on a field at Pollock, belonging to Sir John Maxwell, Bart. Twenty-nine ploughs appeared, and half an acre of ground being marked out to each, the work was performed in the presence of the judges, in six hours; two horses to each plough and one driver; the first premium was given to Andrew Findlay, tenant in Mains of Cruickston; the 2d, to John Lockhead, in Leggatston; 3d to James Faules, in Nether-Aud-house; 4th, James Dow, servant to William Boyle, in Old Paper Mill. The judges expressed themselves well-pleased with the whole work, and at the ease with which it was in general performed. One of the ploughmen having deviated from the rules of the match, was not admitted to the competition, although his work was good.

Last week a Turnip was drawn in a field of the Hon. Robert Dundas, of Melville-Castle, which weighed 23lbs. 16ozs. to the lb. no leaves included in the weight, and the turnip perfectly sound.

The Public Shews of Cattle, at Wareham, in Hampshire, are on the following days:---Saturday, March 2---Saturday, March 23---April 17. Wareham Fair, Saturday, May 4.

AGRICULTURAL IMPLEMENTS.

The Editor having frequent applications made to him, from different parts of the country, for recommendations to Manufacturers of Agricultural Implements, conceives that the following particulars will prove useful to his readers.

The following are made by JAMES M'DOUGALE, Agricultural Implement Maker, 422, Oxford-street, London.

A machine for Drilling 5, 4, or 3 rows of all kinds of Grain and Seeds	12	12	0
Ditto, with two sets of hoes	15	15	0
Ditto, for drilling two rows	6	16	6
Ditto, for one row, worked by hand	2	12	0
A single Drill for Turnips and pulverized Manures	4	4	0
The Northumberland Turnip Drill	3	3	0
The Roller complete for ditto	5	5	0
An expanding Horse Hoe, from 1 to 2 feet wide	4	14	6
Ditto from 8 to 18 inches wide	3	10	0
An expanding ditto, worked by men or boys	2	2	0
Lord Somerville's Patent two furrough swing plough	8	8	0
Ditto ditto single swing plough	4	14	6
Ditto ditto with chain draught	5	0	0
Small's improved Swing Plough	4	4	0
Ditto, with Chain Draught	4	10	0
The Duke of Bridgewater's Draining Plough	7	7	0
The Mole Plough for draining	3	13	6

Ditto with a spare Iron and the Miner fitted	5	15	6
Hayward's Extirpator with eleven Irons	8	8	0
Ditto with nine Irons	7	12	0
Ditto with seven Irons	6	16	6
The Scarificator for Grass Land	6	6	0
The Cultivator with seven Irons	7	7	0
The Flexible Tube to relieve Cattle	1	1	0
Ditto for Sheep	0	10	6
Skim Coulter	1	2	0
Turnip Slicer	4	4	0
Bruising Machine for all kinds of Corn, Malt, and Pulse	8	8	0
Straw Cutter, with three knives, to work by Horse Mill	15	15	0
Ditto to work by hand	11	11	0
Ditto with two knives	10	10	0
Winnowing Machine	11	11	0
Pendulum Churn to make Butter in a given time in all seasons	5	5	0
An Index Gauge to ascertain the draught of Horses in Ploughs	5	5	0
Boring Rods for 20 feet deep	5	5	0

Also a Threshing Machine to work by two or more horses.

THRESHING MACHINES.

Wm. Harwood, Millwright, &c. Ballingdon, near Sudbury, advertises that he has lately constructed a Threshing Machine, on a small scale, the principal part of which is on an entirely new and improved plan. It threshes clean and expeditiously, and all the machine and apparatus may be portable, if required. It may be seen at work, any day, by applying as above, where further particulars of price, &c. may be had.

Mr. Ball advertises his Patent Thrashing Machines, which may be had of Mr. George King, Norwich; Mr. William Dixon, Ipswich; Mr. Richard Janitt, Leiston; Mr. Richard Drew, Bungay; Mr. John Chamberlain, Trowse, near Norwich.

The following Testimony is signed by a number of respectable gentlemen of Norfolk: Feb. 2d, 1805.

We, the undersigned, having witnessed the operation of Mr. Ball's Patent Threshing Machines, do strongly recommend the use of them to Farmers in general, as we consider the said Machines to have the following advantages over all others that we have hitherto seen, viz.

1st. That they will thresh all kinds of grain clean.

2dly. That they will thresh a much greater quantity in any given time.

3dly. That they do very little injury to the straw.

4thly. That they are much easier fed, not requiring that exact regularity in feeding, which is peculiar to all others.

5thly. That they cannot be materially injured by stones or other hard substances passing through them.

Lastly. That, as they are more simple in their construction, they are not so liable to be out of repair, nor so difficult to be repaired.

John Howlett, Hethersett
M. Rackham, Intwood
Francis Browne, Langley
M. Beverley, Tibenham
T. Utting, Ashwelthorpe
John Sewell, Bracon Ash
Thomas Jecks, Eaton
T. Denny, Swainsthorpe
G. Barnard, Bracon Ash
Francis Church, Flordon
William Toll, Keswick
Rice Wickes, Eaton
William Howlett, Weston
S. Mann, Honingham

W. Clarke, Ketteringham
Wm. Jary, jun. Burlingham
Charles Waites, Witton
Edward Waites, Upton
P. Bullock, Plunistead
John Lowden, Heigham
Edward Heath, Melton
T. Mildred, Earsham Park
William Hart, Gissing
J. Holmes, sen. Tivetshall
J. Holmes, jun. ditto.
Charles Holmes, ditto
Benjamin Gee, Eaton.

MISCELLANIES.

A meeting of the gentlemen of the Loddon and Clavering Hundreds, was held at the Falcon, in Ditchingham, on Tuesday the 12th of February, to take into consideration the vexatious surcharges made by the surveyor of that district, on carts, horses, &c. which caused many farmers to neglect their business by attendiug appeals against such surcharges. The sections on which the surveyor thought proper to surcharge, were the 23d and 72d section of the act of parliament, relating to the different duties.

A Calf, of the Suffolk breed, 26 weeks old, fatted by Mr. Grice, of Dengie, in Essex, was killed on the 6th of February, by Richard Maskell, of Madwell, which weighed 47 stone, 5lb. the loose fat 29lb. and the caul fat, 29lb. It is supposed to have been the most extraordinary animal ever seen, the flesh being of a superior whiteness and flavour.

PRICE OF CORN AT LIVERPOOL MARKET, Jan. 30, 1805.

Wheat,	Old English,	14s. 6d. to 16s.	per 70lbs.
	New Ditto,	13s. to 14s. 6d.	
	Old Dantzic,	15s. to 16s. 6d.	
	Irish,	12s. 6d. to 14s.	
Barley,	English,	6s. to 6s. 6d.	per 60lbs.
	Foreign,	6s. 6d. to 7s.	
Malt,		11s. 6d. to 13s.	per 9 gallons.
Oats,	British,	4s. 3d. to 4s. 8d.	per 45lbs.
	Irish	4s. to 4s. 6d.	
Beans,		50s. to 53s.	per quarter.
Boiling Peas		60s. to 64s.	
Rye,		68s. to 70s.	
Flour,	Fine,	70s. to 74s.	per 280lbs.
	Seconds,	65s. to 66s.	
Oatmeal,	English,	40s. to 42s.	per 240lbs.
	Scotch,	37s. to 39s.	
	Irish,	36s. to 37s.	

PRICES OF LEATER AT LIVERPOOL MARKET, Jan. 30, 1805.

Foreign Hides, 18d. to 22d. per lb.---Heavy Bull, ditto 23d. to 24d.

---Middling ditto, 23d. to 23½d.---Common ditto, 22d. to 22½d.---Dressing Hides, 23d. to 24d.---Horse ditto, 20d. to 24d.---English Skins, 31d. to 33d.---Irish ditto, 24d. to 26d.

FAIRS.---At St. Neots, on Saturday, Jan. 30; Potton, on Tuesday, Jan. 29; and Higham Ferrers, Jan. 26, the shews of horses were very small; as there were many ready to purchase, they sold in general very dear.

At Morpeth, on Wednesday Jan. 30, there were a great many cattle, and a full market of sheep. Beef, 6s. 9d. to 7s. 6d. Mutton, 6s. to 7s. per stone, sinking offals. Wheat, 68s. to 80s. per quarter. Rye, 64s. Barley, 42s. 8d. Oats, 20s. to 25s. 4d. Beans, 48s.

FACT—Mr. Burfield, bailiff to the earl of Chichester, last year sowed on two acres of land, on which he also grew lucern, only two bushels of oats, the crop from which, on being lately thrashed, produced him the amasing quantity of *ninety quarters and two bushels.* The ordinary quantity of oats sown on an acre is from six to eight bushels.

The following simple experiment for the protection of fruit trees from the caterpillar, is said to have been attended with complete success. Let a clod of earth be moulded round the trunk of the tree, and this is the whole process The tree will then be wholly freed from insects, which will begin to fall from every part.

A method of cleansing linen by steam has been discovered in France, which saves nearly all the labour, and nineteen-twentieths of the fuel, soap, &c. ordinarily used in washing. The process is as follows: the linen is steeped in water (even hard water will do) and then drained; it is then sprinkled with cold lie made of salt of kelp, and a small quantity of soap, and when the linen has imbibed this, it is put into a bucking tub; as much fire is then lighted as will keep a few pints of water, and the lie which has drained through, in a constant state of ebullition, in a large boiler, and the steam thus arising finishes the operation in two or three hours. The linen is then taken out and rinced in spring or river water, and should there be any spots which have escaped the action of the lie, soap must be used to them. The colour of the linen is much improved by this process, which does not wear it out so much as washing in the ordinary way, or injure it in any manner whatever. The heaviest washing may by this discovery, be completed in a few hours.

DETAIL OF OBSERVATIONS AND EXPERIMENTS IN CURING THE SMUT IN WHEAT. BY THE REV. J. TYSON, VICAR OF ADLINGFLEET.

"IN the year 1798, being about to commence farming, and, in this instance, indulging a spirit of speculation too far, I formed an idea, that the smut in wheat could not be a matter of that high importance which my neighbours represented it to be; and in this I was partly confirmed by recollecting that none of the other kinds of grain were subject to the same kind of deterioration or degeneracy.—Accordingly I adopted, as my guide on this occasion, the idea of well dressing my seed corn, and sowing it in its dry natural state. This plan I pursued two years, without observing a single smut; in the third year, however, to my sorrow and my loss, the smuts appeared so numerous, that, at least, one ear in four or five was as black as soot! This was a serious matter to me, and forthwith I began my experi-

ments. It must be observed all along, that from first to last I never changed my seed-wheat, bad as it was now become; my principal aim was, how to cure it. To make myself acquainted, however, if possible, to what degree of degeneracy wheat in this state might arrive, I sowed, next year, a small quantity (a rood) of my smutty corn in its dry state; the result was, three-fourths of the crop was smutty: the next year I sowed another small quantity (in the same state) of the preceding year's produce, when, observing all the ears, or most of them, to be perfectly yellow, which indicates, that, when come to maturity, they will be smutty, and the straw a dark bottle-green, I ordered the corn to be mown green for horses. From this it would appear, that wheat would, in time, so far degenerate, as not even to yield a single acre of sound corn! What is the reason, I shall not pretend to say."

"The following is the result of my endeavours for the cure or remedy to the smutty corn which I had the third crop, from the year 1798, or the first year of the smut's appearing. My first plan was, to dress well, with a strong blast, then to wash off the whole in water, wherein was as much common salt as would serve an egg: after the liquor was run clear of, I mixed among the wheat as much quick lime as made it tolerably dry, and proper for sowing. This, on being sown, produced a good crop; there were, however, a few straggling smuts, but none to hinder the sale of it in the least. Another year commencing, I took some of this last-mentioned wheat, (that contained a few straggling ears of smut) and having it well dressed, I poured upon a quantity thereof as much old mine, or chamber-lye, as I supposed it would imbibe, and, letting it remain about half an hour, I drained it, and mixed it with as much quick lime (newly staked) as would make it nearly dry, and fit for sowing; I then committed it to the ground, and in the harvest I perceived no smuts—having completely effected a cure* on my smutty wheat."

At Glasgow, the 17th of January, 1805.

The Lord Provost, Magistrates, and Common Council of the City of Glasgow, being in council assembled, and having taken into consideration the present state of the Corn Laws, and particularly the recent Corn Statute, the operation of which has now for some time been perceived and felt, unanimously adopted the following Resolutions:---

1 That the average prices of grain for the 15th district in which this City is situated, and for the whole of Scotland from the month of May, 1793, to the month August 1804 inclusive, have been examined —and it has been found, that at the rates fixed by the recent statute, the ports during the above period would have been almost uniformly shut, with the exception of the years of scarcity approaching to famine.

2 That the prices at which according to the late act, the different kinds of grain, especially oats and oatmeal, may be imported on payment of the low duties, are much higher than the existing circumstances require; are by far too high for the comfortable subsistence of the inhabitants, or the prosperity of the manufacturers of this part of the Country, and ought to be reduced.

* I had twelve acres of wheat this year.

3 That, on inquiry, it will be found, that, at times, under the operation of the present statute, particular kinds of grain cannot be transported from England to Scotland or from Scotland to England—nay even, that grain may he imported from foreign Countries into the one part of the kingdom, when it can be exported from the other. Such a state of CORN LAWS unquestionably requires amendment. And, it is to be wished, that instead of the average price of England and of Scotland taken separately, the average price of the whole maritime districts of Great Britain, should regulate the importation and exportation throughout the whole island, provided the free transmition of grain be allowed, from any one part of the kingdom to another.

4 That the benefit which, it was supposed, this part of the country would derive from the importation of grain from Ireland, is by no means of the magnitude or extent expected. Even in the most plentiful years, this part of the country must have recourse to importation. And the grain dealers, both in Great Britain and Ireland, knowing that grain must be had for the consumption of the inhabitants of this district, have it in their power to take advantage of the high price to which, according to the present act, grain must rise, before importation from foreign countries is allowed, and can, without risk, retain the grain which is the produce of Ireland, until the prices in this country arrive nearly at the prices at which grain may be produced from foreign ports.

5 That to render the permission to import grain from the Britsh Colonies in America, at lower prices than from other foreign countries, of any advantage to the inhabitants of Great Britain, it is absolutely necessary, that the ports be allowed to continue open for six months at a time, in order that the grain dealer may not incur the risk of the ports being shut, before the cargo he has commissioned can arrive.

6 That a humble petition be presented without delay to parliament, stating the above mentioned facts, and praying the legislature to reduce the prices at which grain is allowed to be imported from foreign countries, on payment of the low duties; to regulate those prices according to the average of the whole maritime districts of Great Britain; to allow the free transmission of every kind of grain, at all times, from any one part of the kingdom to another; and to enact, that when importation from the British Colonies in America is permitted, the ports shall continue open for six month at a time.

7 That Boyd Alexander, Esq. of Southbar, representative in Parliament for this district of Burghs, be requested to present the petition from the City; and that the right honourable lord Archibald Hamilton, representative in parliament for the county of Lanark, and William M'Dowall, Esq. of Garthland, representative for the county of Renfrew, be requested to support the petition, and to concur with such other members of parliament, as have the same object in view.

8 That these resolutions be published in the Glasgow, Edinburgh, London, Manchester, and Liverpool, newspapers.

JOHN HAMILTON, Provost.

Glasgow, 22nd January, 1805.

At a Meeting of the Directors of the Chamber of Commerce and Manufactures, established by Royal Charter, in the City of Glasgow,

JOHN GORDON, Esq. in the Chair.

The meeting having taken into consideration the law passed last session of parliament for regulating the exportation and importation of Corn, and having found, from an examination of the prices of Grain, as stated in the gazette, during the existence of the former law, that, if the rates under which importation was prohibited at the low duties, had then been fixed the same as they are now by the present law, either the prices of all kinds of Grain must have risen very considerably in this country, or that the ports of Scotland must have been shut for importation from foreign parts during the whole of that period, except in those years of scarcity, when from an unusual failure of the crops, the prices rose to an height hitherto unknown in this kingdom:--And having also considered that this part of the country, even in the most plentiful seasons, cannot produce as much Corn as is in any degree sufficient for the subsistence of its numerous inhabitants,

They were of opinion,

That, in a country which cannot supply its own consumption, all bounties granted on the exportation, or restrictions on the importation of grain, must raise the price to the consumer much more than it can be of advantage to the grower.

That the prices under which importation is prevented by the late law, are higher than any alterrtion of circumstances required, or than is necessary to secure an adequate return to the farmer, and higher than is consistent with the comfort of the labouring people of this part of the country, or with the prosperity of its manufactures.

That, if the prices at which importation is allowed, were reduced so as to be rendered equitable for all parties, it would greatly simplify the operation of the law, if these prices were regulated by the average of the whole kingdom, instead of taking one average for England and another for Scotland; and a free transmission of grain allowed at all times from one part of the country to another, as thereby the prices would be rendered more steady, the farmers would be enabled to avail themselves of every market in the kingdom, and the manufacturers to draw their supplies from those parts in which there was the greatest plenty, besides affording a great encouragement to the coasting trade, an object of much importance to this nation.

That, in opening the ports for the admission of grain from his majesty's dominions in America, they should continue so for six months instead of three, in order to allow time for the merchants to transmit their orders for the grain wanted, and to receive their cargoes before the ports may be again shut.

That a humble petition be presented to parliament, praying them to reduce the prices now fixed under which grain cannot be imported into this country, to regulate the importation thereof in the same manner through the whole kingdom, and to allow a free transmission of grain at all times from one part to another; and that, when the ports are opened for the importation of grain from his majesty's colonies in America, they may continue for six months at a time.

That these resolutions be published in the Glasgow, Edinburgh, London, Manchester, and Liverpool newspapers.

JOHN GORDON, Chairman.
GILBT. HAMILTON, Secretary.

At a Meeting of the principal Graziers and Farmers, in and near the parish of Westerham, in the county of Kent, on Friday the 25th day of January, 1805;

JOHN WARDE, Esq. Lord of the Manor, in the Chair.

H. Streatfield, Esq. Chiddingstone,	Mr. W. Shorey, Delaware
J. H. Barrow, Esq. Hill Park	W. Stringer, Cudham Lodge
Mr. R. Sandeland, Trevereux	Wearing, New House
E. Whittaker, Mariner	Ounsted, Mace
J. Browne, Court Lodge	Matson, Wettwood
W. Saunders, Westerham	W. Hope, Charmonds
E. Worger, Spout	W. Green, Dairy
W. Smith, Gaisham	W. Stevens, Force Green
J. Jewel, Gabriels	T. Clarke, Grants
C. Shewbridge, Skinners	T. Humphrey, Hever Castle
G. Holmden, Broxham	M. Love, Scaynes, and
T. Holmden, Edenbridge	T. Shearman, Hexted

Resolved—That it appears to this meeting, that Westerham has a right and privilege to a monthly market, by a charter granted in the reign of her majesty Queen Anne, for fat cattle of all kinds, and store cattle also. But the time the contagious distemper, amongst the horned cattle, raged so violently in this country, it was entirely neglected.

That we find by experience, that sending of fat cattle from this neighbourhood to distant markets to sale, is attended with disadvantage, detriment, and damage, to the seller, buyer, and consumer; that the renewing of Westerham Monthly Market would tend to remove those unfavorable disadvantages.

Resolved—That we will, therefore, on Wednesday, the 15th day of March next, supply the market, in Westerham, with fat cattle for sale, to be in the market by eight o'clock in the morning, and to continue supplying the same on the second Wednesday of every succeeding calendar month.

That a subscription be immediately opened for defraying the expences of circulating this information, and promoting the object of this Meeting, as expeditiously and useful as possible.

That a Committee be formed, consisting of

John Warde, Esq	Mr. W. Smith
Mr. R. Sandeland	J. Jewel
E. Whittacre	C. Shewbridge
J. Browne	G. Holmden
W. Saunders	T. Holmden
E. Worger	W. Shorey;

Three of whom are empowered to act, make and receive, all necessary communications; and any hints for the furtherance of the object of this meeting, are requested to be addressed to the Committee of Graziers, at the George Inn, Westerham.

That these Resolutions be published in the County Chronicle, Maidstone Journal, and Lewes Journal, and also to be circulated by hand bills, and posted in such towns as the Committee shall judge proper.

That Mr. T. George, of Westerham, be appointed Treasurer, to

whom all subscriptions are to be paid, and on whom the Committee shall draw for all necessary expences.

(Signed) JOHN WARDE, Chairman.

That the Thanks of this Meeting be given to John Warde, Esq. for his willingness in taking the chair, and his candid and impartial conduct therein.

AN ACCOUNT OF THE HOUSES OF INDUSTRY IN FLANDERS.

At Strasburgh, and in most of the great towns throughout Flanders, houses of industry are established, with a view to extirpate idleness, beggary, and vagabonds. These workhouses are, in every respect, master-pieces of moral and political economy.

In one of the largest of the suppressed convents, they have fixed in the kitchen a kiln to prepare cheap soups. In the rooms of the ground-floor are set up looms for weaving. In the galleries and sleeping rooms are placed wheels and machines for spinning, and, where the size will admit it, they form eating rooms, and reserve a part for chambers, in which some slight works, such as plaiting of straw, and making hats, may be performed; or for correction.

At eight in the morning the gates are opened, and there enter men and women of every age, who have no work in the town; mothers with their families; servants out of place; labourers who have no master; and children, whose fathers and mothers, because of the labours necessary for their subsistence, cannot have an eye over them. After this voluntary entrance, the police officers traverse the town, and send every beggar and idle person they meet with to the house of industry.

As they pass over the threshold of the door, an account is taken of them for a share in the distribution of the soup, bread, and water. There is no need of strength or talent to give a right to this barely necessary refreshment, but afterwards every person who is able is put to work, and receives wages and an augmentation of food. His pay is proportioned to his capacity; but nevertheless, it is fixed below what is given in private manufactories, that the bait of a little higher wages may rouse the workman, and engage him, by removing to a manufactory, to leave his place vacant in the workhouse. The workmen are ranged in two rows; an inspector oversees every room. The following arrangement is what I have seen in many of these houses of industry.

A woman enters with four or five children: the eldest sits down at the wheel and spins; the second, at some steps distance, picks wool or cotton; the third, whose arms cannot reach to turn the wheel, with one hand, and to stretch out the other to carry the thread round the bobbin, moves the wheel, while a little comrade carries the wool or cotton to the other end of the beam; the fourth child, scarcely two years old, is in a cradle, which the mother rocks with her foot; the fifth hangs at the breast, and she supports it with her left hand, while with her right she turns a spindle. In some houses of industry, that the children might not disturb the workmen, they are put altogether, in the winter, into a chamber, and, in the summer, into a garden, where their laughs and cries drown one another's noise. In

the intervals between the hours of labour, the mother visits them, and those who are nurses, at the proper time, give the little ones suck.

So the day runs out. At eight in the evening, the doors are opened, and all withdraw. They come again the succeeding days, having acquired more aptitude for work; or, the manufactories wanting more hands, the workmen quit the school of industry, to attach themselves to a manufacturer. In the mean time, the habit of begging is lost, and a habit of labour is formed; and so he who was a degraded being, a burden to himself, and injurious to society, becomes a man useful to himself and others.

The old, who are utterly incapable of labour, are taken into a house, which is called the depot of mendicity. Soup, bread, and water, are given them. They wear on the arm a red strip, to shew that they were mendicants. They never stir out. I have seen in this house sixty persons, men and women. The men in their amended state have no resemblance to the former mendicants. The marks of wretchedness are more strongly impressed on the persons of the women. There is a design to establish another depot, where the accommodations will be worse, and in which shall be shut up, those who having persisted in begging, notwithstanding all the measures adopted to afford them assistance, shall be condemned to be detained by the tribunal of correction.

The following Correspondence on the important subject of TITHES, *appeared in the Bury Post.*

To the Editor, &c. &c.

Sir,

I HAVE lately come into possession of a living, and wishing to compound for my tithes on fair and liberal terms, and the methods usually resorted to by my brethren not being deemed by the farmers calculated to secure those objects, I was anxious to adopt, if possible, an unexceptionable plan. That which occurred to me as such, was by the arbitration of two indifferent persons of character and ability; one to be chosen by my parishioners, and one by myself; this I proposed to them, and they objected to it,—observing, they thought themselves competent to *set their own tithes*;— an observation, I presume, unworthy any comment, when it is observed that *by requiring any sum* either *upon my* own *judgment*, or *on the authority of a valuer*, is deemed by them arbitrary, oppressive, &c. I beg, now, you will permit me through your magazine, to ask any farmer what other step then that which I have taken can in justice be expected from me? The clergyman who declines compounding is said by the farmers to avail himself of a law which they deem oppressive,— the clergyman who fixes his own tithes is deemed arbitrary,—and it is said he may want *judgment*; or, having it, may be biassed by self-interest. The clergyman who employs a valuer, and demands a tithe according to *his* opinion, is deemed also, though in a less degree, arbitrary; he sanctions himself under the opinion of his valuer; a man, perhaps, of ability and character; but his opinion, say they, has not the requisite of a *fair* opinion, viz. disinterestedness: his object, viz. to gratify his present employer, and to obtain new ones, inducing him to

set the *highest* tithes he can; and his reward, a per centage on the value of the living, being another inducement, having the like effect. Such are the objections to the general methods of settling tithes. What are the objections to my plan? If any of your agricultural readers would point out a plan of compounding for tithes, which would secure equality to, and secure friendship between both parties, they would do an essential public service. Mr. Arthur Young's able pen would be well employed on this subject. I should be glad of any information or advice from him, or from any one else; my only view being to obtain a fair tithe.

I am, Sir, Your obedient servant,

Jan. 14, 1805. A NORFOLK RECTOR.

To the same.

SIR,

I cannot sufficiently express my surprize at the Farmer's Letter, in your last paper. After we have been repeatedly informed by high authority, that the foundation of all property is law, and that tithes are the most ancient species of property therein recognized—in a year too, when the price of the necessaries of life is greater than it has been (almost) within the memory of man; that so direct an attack upon private rights, as the abolition of tithes, should be recommended to public practice, is scarcely to be accounted for but upon the supposition, that this Farmer firmly believes that nobody has a right to live but himself. Yet, if ever there was an object deserving legislative consideration, the rights of the Clergy imperiously demand it. If the keenness of the Farmer have laid some worthy Pastors in prison, there is apprehension that his encreasing agressions will lay many more, and the growth and care of Religion be in a degree confined to the new-fangled teachers, who will no longer subject the honest farmer to the burden of paying a man his due; and to those who are absolutely incapable of tolerably spelling their own names. Provision for Methodist Parsons is light, in comparison of that for Church-Ministers; and besides, the Methodist Parson can be sconced to a shilling to gratify malice or avarice.

Willing to compound for present benefit with a probable prospect of temporary inconvenience, I heartily wish Tithes were in every instance collected in kind. The grumbling with honest men could not last three years. Not that I fear it would be of long duration with any set of men—a sense of individual interest would at length prevail through the agricultural community, which would force itself upon the attention of the Farmer most regardless of the rights of others. An established Ministry must be fed.—But the Farmer requires an impossibility, if he requires to live in friendship either with Clergy or Laity, to whom he deals out the bounty of Heaven, not in proportion to their respective claims, but to his own unfeeling estimates of their wants. This disgusting selfishness must have it's natural effect upon the public mind, and he (the Farmer) bear, as he can, the odium it occasions. Neither Parson nor Farmer, but an

Jan. 30, 1805. HONEST MAN.

To the same.

SIR,

ALLOW a few short remarks on the letter in your last paper, signed "A Farmer."

He expresses his surprise, that "in a year when the deficiency of "corn is greater than it has been within the memory of man, so direct "a discouragement to its production as Tithes should be brought "forward to public notice." To enter into a discussion how far Tithes are, *in sound reason*, a discouragement to the production of corn, would require more room than you can spare; but I apprehend, that if Farmers have, contrary to their own wishes in other respects, laid down productive corn-lands into grass, in order to avoid paying the value of the corn-tithe to the Clergy, they have not acted wisely. If the Tithe was valuable, the other nine parts must have been proportionably so; and the injury such, consequently, to themselves, in determining to lay those corn-lands down; but, supposing this to be done, is "the keenness of the Clergy" the sole cause of such a procedure? Have the lay-impropriators no share in it? Have they no keenness in ascertaining their own claims? Are they all gentleness, forbearance, and moderation? I believe every thinking Farmer will acknowledge, that it is easier to make terms with the Clergy, than with the lay-impropriators, or their lessees. But, suppose Tithes to be abolished, as your Correspondent wishes, and is persuaded they will be; what would be the consequence? Would he, as a *Farmer*, be benefited? Not at all. The landlord would immediately add to his rent the same sum he now pays the clergyman for Tithe, or probably a larger; and the only alternative would be---pay for it, or turn out.

When your Correspondent observes, that it is impossible for the Norfolk Rector "to live in friendship with those from whom he re-"ceives pay, not in proportion to his merits, but to their exertions;" or, in other words, to the produce and value of land, he should be reminded, that this "pay" is no other than a *right* of at least a thousand years standing; a title much older than, propably, any estate in England can boast; and that if the Ministers of religion should, from the poverty of their situation, fall into contempt, religion will do so too: which consequence can only be prevented by Ministers possessing some property, or provision, that will keep pace (as Tithes) with the progress of agriculture, and the general wealth of the nation.

Let me, lastly, observe to your Correspondent, that whatever "odium" may be attached to the Tithe system, that odium, whilst one half (or, as some say, three fifths) of the Tithes are in lay-hands, ought not to rest with the Clergy only. I am, Sir, Yours's,

Jan. 25, 1805. A SUFFOLK VICAR.

To the same.

SIR,

THE Suffolk Vicar, in his letter of Wednesday, began with an assertion I am not inclined to controvert. A discussion, *how far* tythes are, in sound reason, a discouragement to the productions of Corn, *would* require more room than you could spare: that they are so, and also operate as a bounty upon pasturage, he may, if he ever

troubles himself to look into such authors as Smith,* Paley,† Malthus,‡ Marshall,§ find proved, by incontrovertible arguments. But I cannot agree with him that the conversion of arable land into pasture, is a diminution of profit to the cultivator, provided the land will bear good grass. That when converted it is more valuable, may be presumed from the fact, that pasture lets invariably at a higher rent than the best arable adjoining. The expence of converting is nearly the whole: to keep it in a productive state, it is only necessary not to exhaust it; the produce indeed is tytheable; but it is the increase by expensive cultivation. On the other hand, if, at the cost of 100l. for instance, an additional quantity of corn be obtained of the value of 110l. the tythe owner receives 11l. and the farmer 99l. he would be much benefited by the abolition of tythes, though he should pay more rent; he could hire his farm for 14 or 21 years, as in this eastern part of the country, (Suffolk) or for lives, as in the western, with the animating prospect of reaping the reward of his exertions. Now, if the parson with whom he has compounded for three years, the utmost term, I believe allowed by law, should break his neck in a fox chace, the agreement is vacated by the fall, and the farmer left at the mercy of the succeeding incumbent. As to the right of tythes being of 1000 years standing, Blackstone may inform the gentleman, that they have not always been enjoyed precisely as at present. Within this period there has been a fourfold division---for the bishop---the fabric of the church---the poor ---and the incumbent. Afterwards, the bishop being otherwise provided for, the division was only in three parts. The parsons at length obtained all the tythes for themselves, and the church and poor were thrown upon the parish. Permit me to add, the claim of the parson, black or grey, was never attacked by me; it would be as absurd to question the legality as to defend the policy of it. I wish that a burthensome, disgusting, and injurious interference should be removed, but not by violent means; and to evince this, recommend an unobjectionable commutation, a proportion of the improved rent.

Your's, &c. A FARMER.

To the same.

SIR,

A scarcity must at all times interest the feelings of the public at large, and will naturally excite the exertions of every one to remove any obstacle that may tend to operate against the progress of agriculture. Permit me to make a few observations, in answer to two letters, (WHICH APPEARED IN YOUR LAST PAPER) it is there stated, "that the foundation of all property is law, and that tythes are the most ancient species of property therein recognised." Is this a sound reason why the abolition of tythes should not be recommended to legislative attention, if they are found prejudicial to the community? Is a law to continue in force because it has existed a thousand years? Though tythes are a right of so many years standing, if they operate at all against the produce of corn, it is to be regretted that they were

* Wealth of Nations, vol. 3, page 275, edit. 8.
† Moral and Political Philosophy, vol. 2, page 406.
‡ On Population, page 440, 4th edition.
§ On Landed Property, page 17.

not abolished 999 years ago. "An established ministry must be fed." But is there no other way of feeding them than by their taking a tenth part of the produce of the earth? As the care of religion is placed in their hands, it behoves them to do every thing in their power to promote it. When a clergyman first comes into possession of a living, his first object ought to be, to live upon peaceable terms with his parishioners. But whilst the right of taking tythes in kind, or compounding for the same from year to year, exists, it is impossible---the farmer must always be liable to be raised---he can never be at any certainty. Hence arise disputes; the parson and farmers always live in open warfare---the latter never attend divine worship in consequence, and thus religion falls into contempt. Nor have the lay impropriators seldom any share in it. The landlord would probably add to rent a sum equivalent to the tythe, but the tenant would hire it for a term of years, and it would then become as part of his rent; and, however great his crop, owing to a more expensive mode of agriculture, he would be exonerated from the fluctuating claims of the parson, and no longer subject to a tythe upon his fluctuating expences.

I am now in possession of 400 acres of pasture, and, however unwisely I may act in the eyes of the clergy, in not converting the same into arable land, I must remain,

Feb. 1, 1805. A GRAZIER.

To the same.

SIR,

I was much pleased with the lively parody of your facetious correspondent, the *Honest Man*, as well as with the sensible and temperate (on the same side) from your *Suffolk Vicar*. If you are not tired of the subject, I should be glad, through the medium of your very candid publication, to say a word or two further upon it; in the first place, if tithes are such a check upon agriculture as the *farmer* would have us believe, how happens it, I would ask him, that such extensive lays have, of late years, been converted to tillage? That such immense quantities of timber, which pays *no tithe at all*, should have fallen to the axe, to make room for corn which pays a tithe so grievously complained of? that the farmers of modern times have arrived at such unprecedented opulence, that they have been able to purchase such considerable estates; and that the price and rent of land, has of late years, so exorbitantly increased? As for the wish, the *farmer* expresses "That all tithes were taken in kind," for which, with more malice than judgment, he assigns as a reason, his conviction, "that that they would not last a year," how then, I would ask, supposing him to be right, are we to account for land which is *tithe free*, not being in a *higher*, generally in a *lower* state of cultivation, than land of the same quality, contiguous to it, *subject to tithes*; which, if he is a farmer of any observation, he must know to be the fact.

In the next place, whereas the farmer expresses his chagrin, that the minister does not lay violent hands on the tithes; I much wonder he does not see what a dangerous precedent he votes against himself. Property is property, by whomsoever possessed; and whenever the day arrives that a parish minister, or tyrannical government, dares touch a shilling of the ecclesiastical revenue; from that moment all

property is insecure. But the *farmer* talks as if tithes were the property of the *public*. Let him be told, that the clergy are beholden to no one for them, that they have the same title to their tithes as the landlord to his estate; that theirs is as much private property, as the other, and that neither of them can be disturbed, but in the event of a revolution, which would be the ruin of both; if the *farmer* supposes a case where the united laity are to compel the clergy to surrender their property, he certainly is at liberty, if he please; but he must see that this is a case of *robbery*, for which on a smaller scale, a man would be hanged. In short the tithes do not belong to the public, nor do the public pay them; They were a free and voluntary donation which the piety of our ancestors alienated for the purpose of religion. The landlord purchases, and the farmer hires, subject to such a rent charge. If either of them seek afterwards, to appropriate that, for which each has been thus allowed, in the terms of his agreement, what are we to think of his

HONESTY?

Prices of Hops, Meat, Seeds, Leather, and Tallow, for Feb. 1805.

Price of Hops.	1st Week.	2d Week.	3d Week.	4th Week.
Bags.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Kent	80 to 100	— —	80 to 100	— —
Sussex	80 — 96	— —	78 — 92	— —
Essex	80 — 96	— —	80 — 105	— —
Pockets.				
Kent (new)	88 — 112	— —	90 — 108	— —
Sussex	86 — 100	— —	84 — 100	— —
Farnham	140 — 160	— —	100 — 140	— —
Seeds.				
Red Clover (per cwt.)	52 — 104	52 to 100	52 to 100	48 to 96
White Clover ditto	65 — 124	56 — 123	56 — 122	52 — 116
Trefoil ditto	16 — 42	16 — 42	16 — 42	16 — 40
Carraway ditto	136 — 140	138 — 142	138 — 142	96 — 130
Coriander ditto	11 — 12	12 — 13	12 — 13	10 — 12
Turnip (per bushel)	18 — 24	18 — 24	18 — 24	18 — 24
Canary ditto	7 — 8	7 — 8	7 — 8	7 — 8
Rye Grass (per quarter)	14 — 32	14 — 34	16 — 34	14 — 32
Meat at Smithfield.				
To sink the offal, per st. 8lb.	*s. d.* *s. d.*	*s. d.* *s. d.*	*s. d.* *s. d.*	*s. d* *s. d.*
Beef	4 0 to 5 4	4 0 to 5 0	4 4 to 5 6	4 0 to 5 4
Mutton	4 4 — 5 6	4 0 — 5 4	4 4 — 5 8	4 0 — 5 6
Veal	5 0 — 7 0	5 0 — 6 4	5 6 — 7 0	5 0 — 6 6
Pork	4 0 — 5 0	4 0 — 5 0	4 4 — 5 4	4 0 — 5 0
Head of Cattle, Beasts about	1,700	2,200	2,000	2,000
——————Sheep.	15,500	18,000	11,000	10,000
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	23 to 24	23 to 24	23 to 24	23½ to 25
Ditto, 60lb. to 65lb. ditto	25 — 26	25 — 26	25 — 26	25½ — 26½
Merchants Backs	— — 23	— — 25	— — 23	— — 23½
Dressing Hides	22 — 23½	23 — 24	23 — 24	22½ — 24
Fine Coach Hides	23½ — 25½	24 — 26	24 — 26	24 — 26
Crop Hides for cutting	23½ — 25	23 — 25½	24 — 25½	24 — 25
Flat Ordinary	22½ — 23½	22½ — 24	23 — 24	23 — 24
Calf-skins, 30 to 40lb. pr doz.	34 — 39	34 — 39	34 — 38	34 — 38
Ditto, 50 to 70lb. ditto	33 — 38	33 — 38	35 — 39	35 — 39
Ditto, 70 to 80lb. ditto	32 — 34	32 — 34	34 — 36	34 — 36
Small Seals (Greenland)	42 — 45	42 — 45	42 — 45	42 — 45
Large ditto	100 — 150	110 — 170	110 — 170	110 — 170
Tanned Horse Hides	30 — 40	30 — 42	30 — 40	30 — 42
Goat Skins, per dozen	25 — 65	25 — 65	25 — 65	25 — 65
Price of Tallow.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
St. James's Market	4 3	4 3½	4 3	4 2½
Clare Market	4 4	4 0	4 2½	4 2
Whitechapel Market	4 2	4 1½	4 1	4 1½
Per stone of 8lb. Average	4 3	4 2½	4 2½	4 2
Town Tallow	72 6	77 6	71 6	70 0
Russia ditto (Candles)	70 0	70 0	70 0	70 0
Russia ditto (Soap)	68 0	67 6	68 0	68 0
Melting Stuff	59 0	57 0	59 0	58 0
Ditte rough	40 0	38 0	38 0	33 0
Graves	14 0	14 0	12 0	12 0
Good Dregs	11 0	11 0	11 0	11 0
Yellow Soap	78 0	78 0	78 0	78 0
Mottled ditto	88 0	88 0	88 0	88 0
Curd ditto	92 0	92 0	92 0	92 0
Candles, per dozen	11 6	11 6	11 6	11 6
Moulds	12 6	12 6	12 6	12 6

LONDON PRICES OF GRAIN, for *February*, 1805.

MARK-LANE, *Monday, February* 4, 1805.

We had not much Wheat this morning at market, yet, as the buyers were few, the sales were dull, and the prices lower—say, in superfine of our own growth, 4s. per quarter, but not so much on the foreign. Flour is likewise cheaper, with much on hand, not of the best sort, and to which our top price will not apply.

Our supply of Barley is a pretty good one, the sale of which was rather heavy, and at something under last week's currency. Malt is likewise dull, but at little variation.

Peas (fine boilers) are rather dearer; but the lower sorts scarcely reach our last week's currency. Beans, from the general heaviness of the market, are nearly as Peas, dull, except for good samples of fine old.

Oats sell without any material alteration, though no great supply in addition to the late arrivals.

Prices of Grain, on board Ship, as under.

Wheat...86s. 100s. to 108s.	Malt.....82s. to 87s.	White Peas.....44s. to 52s.
Fine.....110s. to 112s.	Oats..... ..29s. 32s. to 34s.	Grey Peas.....43s. to 49s.
Rye.....54s. to 57s.	Polands....35s. to 36s. 6d.	Sm. Beans.....45s. to 52s.
Barley.....46s. to 53s.		Ticks.....38s. to 46s.

Monday, February 11, 1805.

We had no great quantity of Wheat up for this morning's Market; the sales at first were a little brisk, but left off heavily at something under last week's currency. In most other Grain the supplies were generally good, and prices declining.

Barley, Malt, and the different kinds of Pease and Bean's, are all lower.

Oats are the only article which maintain their price.

Flour, from the late extensive sales, and the bakers being full, has a very heavy sale, with much variation both in quality and price.

Wheat...80s. 84s. to 100s.	Malt.....80s. to 86s.	White Peas....42s. to 48s.
Fine.....105s. to 113s.	Oats.....28s. 32s. to 34s.	Grey Peas.....43s. to 47s.
Rye.....53s. to 58s.	Polands.....35s. to 36s.	Sm. Beans.....42s. to 50s.
Barley.....45s to 50s.		Ticks.....40s. to 44s.

Monday, February 18, 1805.

There was a large influx of all Grain for the supply of this day's market, and with it a general depression in the prices. To the Wheat left over from last week, were added very conssderable fresh arrivals, which together, produced a reduction of 4s per quarter on fine samples, and rather more on the ordinary.

Barley comes abundantly to hand, and, with Malt, partakes of the prevailing decline—say from 2s to 3s per quarter, since this day se'nnight.

Pease and Beans of every discription are equaily plentiful, the sales of which are likewise heavy, at a reduction of three and four shillings per quarter.

Oats also are an ample supply, and will be found quoted two shillings per quarter cheaper than last Monday.

Flour is without any regular price—Nominal, 90s. per sack.

Wheat...75s. 90s. to 100s.	Malt.....78s. to 84s.	White Peas....40s. to 46s.
Fine.....106s. to 109s.	Oats.....26s. 28s. to 31s.	Grey Peas.....40s. to 44s.
Rye.....53s. to 57s.	Polands.....33s. to 34s.	Sm. Beans.....42s. to 48s.
Barley.....43s. to 48s.		Ticks.....36s. to 42s.

Monday, February 25, 1805.

Our market this morning revived a little from the heavyness of last week, and which felt additional depression on Wednesday and Friday, though very little business was done on either of those days, In the mealing trade to-day, the arrivals where short, and the sales of fine runs brisk, but not upon terms equal to last Monday.

Barley and Malt, are each in plenty, and the latter may be quoted as rather cheaper. White Pease, with the two sorts of Beans, are a good supply, and down 2s per quarter. Grey Pease, not quite so much. In the article of Oats there is a dullness, no scarcity, and but little variation in price.

Flour remains nearly the same as last Monday.

Wheat...76s. 88s. to 102s.	Ma t.....76s. to 82s.	White Pease...40s. to 44s.
Fine.....104s. to 107s.	Oats.....26s. 29s. to 31s.	Grey Pease.....40s. to 44s.
Rye.....50s. to 28s.	Polands.....32s. to 33s. 6d	Sm. Beans.....40s. to 48s.
Barley.....42s. to 48s.		Ticks.....36s. to 42s.

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 FEBRUARY 16, 1805.

INLAND COUNTIES.

COUNTIES.	Wheat		Rye.		Barley.		Oats.		Beans.		Pease.		Oatml.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Middlesex	100	4	60	0	50	3	32	5	50	1	52	11	23	10
Surrey	109	4	50	0	47	4	31	8	49	6	53	6	——	
Hertford	88	4	40	6	51	0	30	0	35	9	44	9	——	
Bedford	96	9	76	0	47	9	27	4	41	6	47	2	——	
Huntingdon	92	7	——		50	0	24	0	40	11	43	1	——	
Northampton	81	8	59	0	47	8	25	0	44	0	48	0	——	
Rutland	101	6	——		51	6	24	0	46	6	——		62	0
Leicester	88	10	75	4	51	6	26	8	46	1	47	1	41	8
Nottingham	100	10	65	0	57	6	28	3	46	3	47	0	——	
Derby	92	4	——		54	6	32	2	52	8	50	0	42	11
Stafford	94	8	——		53	11	29	10	52	9	——		44	6
Salop	86	2	58	10	49	8	27	10	——		50	2	65	8
Hereford	85	7	51	2	50	8	27	6	50	8	48	6	60	11
Worcester	85	6	——		53	2	29	10	51	5	50	7	——	
Warwick	94	10	——		56	3	29	8	54	1	60	0	50	10
Wilts	93	8	——		52	8	29	2	57	4	53	0	——	
Berks	103	1	——		48	2	27	9	50	4	53	1	——	
Oxford	94	10	——		48	2	26	10	47	3	50	5	——	
Bucks	99	7	——		48	0	30	0	45	1	48	6	——	
Brecon	76	9	48	0	45	7	24	0	——		48	0	43	0
Montgomery	81	9	——		40	0	20	1	——		44	9	50	10
Radnor	80	4	——		48	11	24	11	——		44	9	——	

MARITIME COUNTIES.

Essex	105	0	54	0	50	2	33	0	48	3	50	0	——	
Kent	108	6	——		50	0	35	0	49	8	54	0	——	
Sussex	106	0	——		48	2	36	0	——		52	10	——	
Suffolk	103	8	——		49	6	26	10	42	1	49	8	51	0
Cambridge	91	0	——		46	10	22	2	41	2	——		——	
Norfolk	100	4	——		46	7	23	4	42	6	42	4	——	
Lincoln	90	2	63	0	47	9	25	11	43	10	——		——	
York	84	2	65	10	49	4	27	4	41	10	56	9	54	4
Durham	80	0	——		——		23	11	——		——		——	
Northumberland	87	0	56	0	40	6	26	1	——		38	0	17	6
Cumberland	83	7	49	4	38	3	28	0	——		——		——	
Westmoreland	86	0	51	0	36	2	27	2	——		——		21	4
Lancaster	90	0	——		48	1	28	9	46	8	——		23	6
Chester	87	11	——		51	10	29	0	——		——		26	6
Flint	92	1	——		——		28	0	——		——		——	
Denbeigh	101	11	——		46	5	25	4	——		51	2	——	
Anglesea	——		——		40	0	22	0	——		——		——	
Carnarvon	82	8	——		41	4	21	6	——		——		49	3
Merioneth	90	0	——		45	1	25	0	——		48	0	41	4
Cardigan	77	1	——		38	10	20	0	——		48	0	——	
Pembroke	69	1	——		41	11	19	0	——		——		——	
Carmarthen	85	9	——		45	6	21	1	——		——		——	
Glamorgan	81	9	——		50	10	23	11	——		——		——	
Gloucester	88	5	——		51	11	27	7	57	6	54	7	——	
Somerset	91	3	——		52	8	25	4	48	0	——		——	
Monmouth	91	7	——		51	11	——		——		——		——	
Devon	94	8	——		45	2	24	10	——		——		——	
Cornwall	86	1	——		40	10	23	10	——		——		——	
Dorset	97	1	——		51	1	36	2	——		——		——	
Hants	105	5	——		50	10	33	5	34	6	——		——	