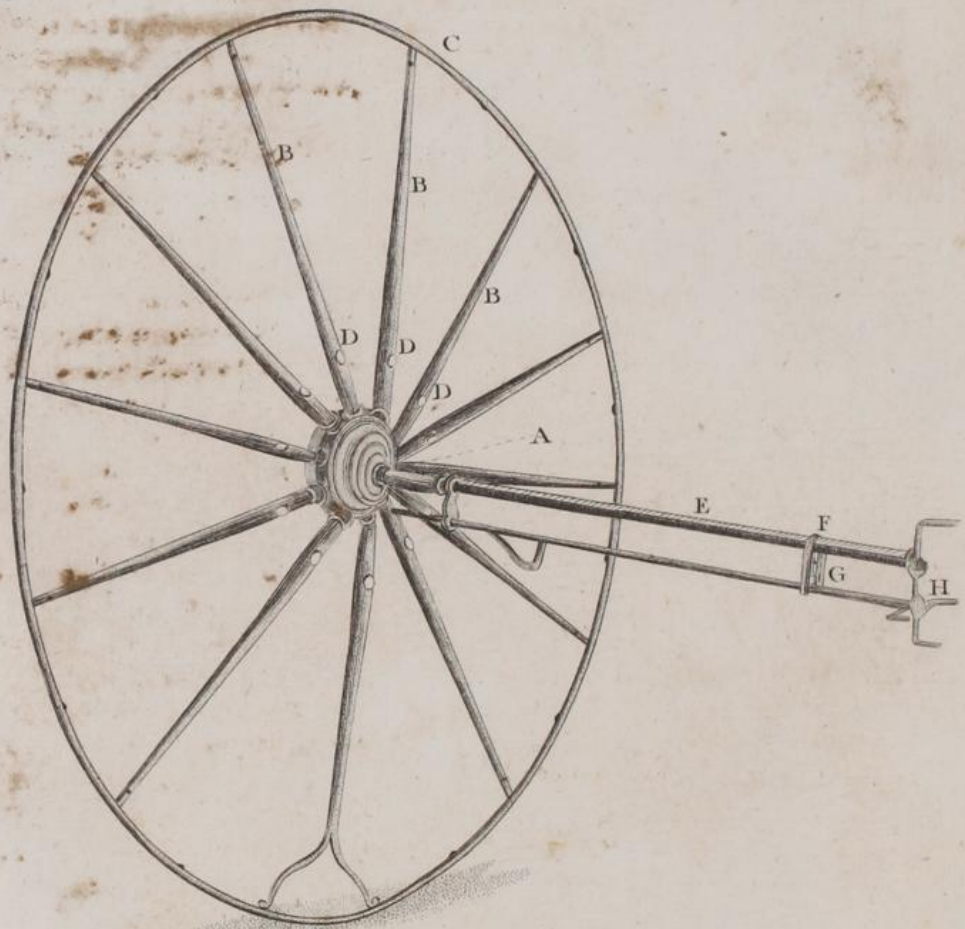


*The Pedometer of Mr. Sewin Tugwell  
of Beverstone.*



*Scale 1/20th of an Inch.*

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THE  
AGRICULTURAL MAGAZINE.

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[VOL. IX.

DESCRIPTION OF AN IMPROVED PEDOMETER.

WITH A PLATE ANNEXED.

**T**HIS useful instrument in mensuration, although of great utility, has been invented nearly ten years, and is at this day very little known.

The following description is given of it by the inventor, which we hope will sufficiently illustrate the plate introduced into this number.

A. The stock of the Pedometer.

B, B, B, &c. Twelve spokes, one end of each inserted in the stock, and the other fastened with a screw to the outward ring or periphery of the wheel.

C. Periphery, an iron ring  $16\frac{1}{2}$  feet, or one pole, in circumference, adapted to Gunter's concise method of arithmetick, and divided into 25 equal parts, corresponding to the links of his chain for land measuring, &c.

D, D, D, &c. Twelve small plates, denoting the separate spokes, each including two links of the chain above mentioned.

N. B. The twelfth spoke is divided at its foot for taking in the odd or 25th link.

E. An iron axis, being a screw with 320 circumvolutions, separately marked on an engraved index on one of its sides.— In its application, it is screwed fast into the stock of the wheel, and when at work revolves with it.

F. A style or alidade, being an expanding screw-nut, embracing the axis and screwing along it, as the latter revolves with the wheel, and as each revolution of the wheel when rolling on the surface, describes an exact longitudinal pole, and consequently four of them a chain, the style hanging pendant and moving to its proper figure, denotes the length of ground passed over as divided into chains and poles on the index of the axis E, and links on the periphery C.

G. A small adjusting screw, by turning which the style may be instantaneously moved back to the beginning of the index, when, in land measuring, the given line has been ascertained in chains, links, &c.

H. A cross or square with sights for determining in land measuring the perpendiculars, suspended at its ends on the axis and occasionally to be detached therefrom when used with a touch only of the finger and thumb. It furthermore acts (by the lower end of the style F, embracing also its standard) in

preventing the said style from being carried round by any possible accident with the axis as it revolves; which before it was used had sometimes taken place, and greatly embarrassed the account: and as the 320 divisions marked poles on the index of the axis are calculated to describe an exact mile, the style F, having passed over them, will then screw no farther, but moving round with the axis takes with it the standard, and striking it on the wrist of the operator, prevents the possibility of his proceeding farther till he has drawn his hand from between the said standard and the axis: having in road measuring received the necessary hint, he turns the screw G, puts back the style F, to the bottom of the index, and goes on as before.

The standard of the cross divided into five lengths occasionally, substitutes the ten link rod used for measuring offsets, &c. and is also used for small distances inaccessible to the wheel.

No doubt the perambulator with its perpetual screw, dial, and other contrivances, so long since invented, would answer all the design of this predometer, but the great expence of that elegant and curious instrument, precludes it from application to the common purposes of husbandry. What is here recommended may be easily constructed by a mechanic, and at a very small charge.

In every work on Agriculture, we see calculations on the produce of fields, without the dimensions of those fields being correctly ascertained. It is a well known principle with farmers to conceal the real extent of their ground, lest the rent assigned to the nominal dimensions should be by their landlord applied to the real demensions. We hope the liberality of landlords, and the confidence of tenants, will conduce to remove this obstruction to improvement; for all the calculations that are made for the assistance of the individual, or for the information of the public, on comparative produce, must be fallacious until the field be correctly measured on which the experiments are made.

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#### VETERINARY COLLEGE.

*To the Editor of the Agricultural Magazine.*

SIR,

IT is somewhat singular, that the improvement in the Veterinary Art, instead of originating with our great military establishments, has been chiefly promoted by an obscure association at Odiham, in Hampshire, which entertained the design of sending two young men of talents into France, to become pupils in this new profession. Having received my education in this school, I have sometimes proposed to myself the pleasure of communicating through the medium of your

useful miscellany, a very concise account of the nature of the institution in this country, and a brief yet complete view of all the material discoveries of the Veterinary Art, which modern labour and ingenuity have developeppd. This review, I design to compress into twelve successive numbers, and I shall, Mr. Editor, conceive it an intimation of your concurrence, if you insert this communication.

M. St. Bel, driven from his own country in the year 1788, (whether from private embarrassment, or public disorganization, is not material) offered his services to a society of gentlemen, in consequence of which, the college was instituted, and some noblemen of the highest rank, were appointed managers of the undertaking.

To determine the qualifications of M. St. Bel, for this situation, he was examined by Sir George Baker, and several other medical professors, and was by them considered competent to its duties.

Whether these gentlemen, comparing the merits of M. St. Bel with the ordinary farriers, imagined consummate skill in the profession not necessary to the success of this new enterprize, I will not determine; but it is certain, however ingenious he might be in shoeing, and the inferior branches; with the pharmaceutic art, or that which respects the healing the diseases of the animal, he was wholly unacquainted. In August, 1793, M. St. Bel died, and it is probable that the fatal event was accelerated by the disappointment he felt at the slow progress of the establishment he conducted.

Whatever might be the extent or deficiency of the talents of this gentleman, the public are in possession of his works, and will not fail to assign them their fit rank. They are the following: An Essay on the Geometrical Proportions of Eclipse; Lectures on the Elements of Farriery; The Art of Shoeing and Diseases of the Feet, and a volume of Posthumous works

During the time of this French professor, a house was taken at Pancras, for the conduct of the institution, and he was succeeded by Mr. Coleman, under whose directions a handsome theatre has been prepared, with a museum, and dissecting rooms, for the use of the pupils.

It is evident that the success of such an establishment, must in a great degree depend on the patronage and attention it should receive, not so much from men exalted in their rank as from those learned in medical science, who were competent to discern and to remove the deficiencies in the healing art, in the lower orders of society, to which the care of the most useful animal has been consigned. Consistently with this principle, a medical committee was appointed, and the names of the members will preclude the necessity of making a single comment on its talents.

The following gentlemen composed it: Dr. Fordyce, Dr. Baillie, Dr. Babington, Dr. Relp, Mr. Cline, Mr. Abernethy, Mr. A Cooper, Mr. Home, and Mr. Houlstone.

It required some time before the arrangements could be adopted for the reception of pupils, and I understand under, the late regulations, they are admitted for the sum of twenty guineas, and are accommodated in the College with board, or otherwise, according to their own convenience. For this sum they see the practice of the College, and by the liberality of the medical committee are admitted, to the lectures of those who compose it, gratis; and in the army the veterinary surgeons are advanced to the rank of commissioned officers, by which condescension of the commander in chief the regiments of English cavalry, have, for the first time, obtained the assistance of gentlemen educated in a way to discharge the important duties of their situation. Annual subscribers of two guineas each are permitted to send two horses to the College, to receive medical assistance, the expence of keeping being the only charge to which they are subject. A subscriber of twenty guineas is granted the same advantages, without any further pay to the institution.

As I have noticed the publications of M. St. Bel, it may be right to give a list of those of Mr. Coleman, that have fallen under my notice, by the inspection of which the comparative talents of these two professors may in some degree be determined. Observations on the Structure, Economy, and Diseases of the Foot of the Horse, and on the Principles and Practice of Shoeing, in 4to. Also a Pamphlet on the Formation and Uses of the natural Frog of the Horse, with a description of the patent artificial Frog.

I have no hesitation in acknowledging that to neither of these gentlemen we are indebted for the best production on Veterinary subjects. A work entitled, "The Outlines of the Veterinary Art; or the Principles of Medicine," as applied to the knowledge of the structure, functions, and economy of the horse, by Delabere Blaine, I conceive to be the first in point of merit on this subject, and nothing can more strongly mark the public demand for a comprehensive work on this subject, than the numerous editions through which Mr. Taplin's rhapsodies and absurdities have passed.

I believe I have extended this letter beyond the bounds you usually prescribe to such inquiries.

I am, Sir, yours, &c.

Westminster, Nov. 8, 1803.

VETERINARIUS.

## ON SPANISH SHEEP, AND THEIR WOOL.

To the Editor of the Agricultural Magazine.

SIR,

Bath, November 16, 1803.

I Am to thank your correspondent, Mercator Tarraconensis, for the candour with which he has corrected my statement in reference to the trading distinctions of Spanish Wool, as well as for his additional information on the subject.

Without entering into an examination of the particular distinctions, in which I have no where assumed to be competent, and which to the farmer would not be considerably important, I cannot but notice his conclusion, which to me seems highly interesting and important; namely, that the cost or expence attendant on the importation of Spanish Wool to this country, amounts to between 30 and 40 per cent. or according to current prices, about 2s. per lb. and highly interesting it certainly is, if in the result it shall be fairly found that we possess the means of supplying one of our staple manufactures with an article at less than the present cost of its transit from a foreign country.

In all my past correspondence, you will readily perceive the principal object has been to excite a more general attention to the improvement of British Wool, by interbreeding with Spanish Rams; but sheep of the fourth or fifth generation for all practical purposes, are considered to be equal to the Spanish Progenitor, by Pallas, Sir Joseph Banks, Dr. Anderson, Lasteurie Dr. Parry, and many others who have had ample opportunities of experience; and the breed hath already so far proceeded in this country, that rams of that description, and still higher crosses, may now be procured in very considerable number.

I have known descendants of the pure Spanish by English ewes, (in the first instance,) to produce heavier fleeces than the original. The comparison of weight is certain and decisive—but even in degree of fineness, (the minute shades of which are not so easily determined, even by first rate judges,) a superior weight of fleece is generally considered to be a pretty sure criterion of superior fineness; all other circumstances of age, weight of carcase, number of descents, &c. being equal. If this principle will hold in Spanish Sheep, it may probably apply to other breeds.

With your Correspondent I admit, (or have rather insisted on it,) “that the wool of this race would pay more than the keep of the animal producing it; and that it requires a very small share of talent in calculation, to shew the importance of the improvement of our English wools.” But easy as these calculations are, it is requisite they should flow from experimental data. Many individuals have had this experience, and

are satisfied. And in proportion as experiments are multiplied, I have no doubt the data will be confirmed and established.

Appealing to men of experience on the subject, I have advanced some facts, which if tolerably correct, would tend to prove the great advantage of extending the breed of Spanish Sheep in this country; particularly that they produce wool of a finer quality, and greater in quantity than English Sheep; meaning by the latter in proportion to the weight of the animal, or from equal quantities of pasture. These facts, indeed, are not difficult to be ascertained, requiring only a moderate portion of time and attention.

A circumstance, however, which is pretty generally known, ought well to be considered; namely, that more than one class of individuals are naturally interested in disparaging this measure of improvement; at the same time I am aware that similar motives of personal interest may be objected to some of those who are advocates for fine woolled sheep. It is for the public to appreciate and decide, the means are obvious and at hand. Mercator rightly observes, "that the quality of the wool depends almost wholly on the ram," most certainly it is so. It is a circumstance well known to all breeders, that the *whole* of the improvement depends upon it; and it is this that in all my remarks, I have endeavoured to inculcate, that it must be effected by repeated crossings, in and in, by the Spanish ram, to the fourth and fifth generation. When as I noticed before, the quality of the wool and general resemblance are supposed to become stationary, equal to the original Spanish, and as such the individuals thus produced, ought then to be employed in further extending the propagation, namely, as Spanish sheep.

I presume it must have been an error of the press, where I am made to say that the fleece or Spanish sheep, will sometimes exceed 17 lb. In a former letter I mentioned, a six tooth wether, as having produced a fleece weighing 10½ lb. which has since been slaughtered, its carcase proved to be something less than 16 lb. per quarter. Now it need scarcely be mentioned, that coarse woolled sheep of double the weight, will seldom produce a fleece equal in weight to that of this wether.

Admitting an acre of pasture would support five sheep only of this description in a breeding state, (one of your correspondents contends that it will support four of the largest breed in the country, i. e. the Lincoln,) and estimating the value at no more than the price of the finest English, i. e. the Ryeland, or 2s. per lb. the produce in wool would then amount to upwards of five pound per acre.

Perhaps it may be objected to this statement, that a selected individual constitutes the basis; in reply, I think it not in-

practicable, by judicious selection and attention, to form entire flocks of a similar description; to meet the objection still further, it must be obvious, I have designedly inserted a price very much below the actual value.

However widely I may happen to differ with your correspondent in the manner of reasoning, I am happy to find we perfectly unite in the same general conclusion, as to the importance and magnitude of producing within ourselves, a substitute for the wool of the Spanish Mountains.

Whilst France remains on the continent a military Colossus, directing the feeble energies of its subjugated neighbours, we may be at any time suddenly forbidden a supply, either in resentment to this country or to Spain itself, according to varying circumstances; for caprice, rather than any sound principles of œconomical policy, would seem to be the predominant feature of that misshapen Republic.

The French, indeed, not insensible to the value of the improvement, are sedulously diffusing it through the country. Lasteyrie, in his *Treatise sur Les Bêtes à Laine d'Espagne*,\* p. 229, says, Il existe dans ce moment en France, plusieurs Troupeaux dont le nombre des individus de race pure, peut être évalué à 5000 qui tous sont, originairement issus des Moutons qui le Gouvernement avoit tiré d'Espagne en 1786. La République possède en outre plus de cinq cents Troupeaux de brebis communes alliées à des Beliers Espagnols; un grand Nombre des ces animaux sont à la seconde et même à la troisième Generation, et ne tarderont pas à atteindre le degré de finesse et de pureté de leurs ascendans paternels. There exist at this moment in France, several flocks, of a pure breed, the individuals of which may be estimated at 5000, all descendants from sheep which the government brought from Spain in the year 1786. Moreover, the Republic possesses upwards of 500 flocks of common ewes, that have been crossed with Spanish rams; a great number of these are of the second and third generation, and will shortly acquire a degree of purity and fineness equal to their male progenitors.†

The same author describes at large, the Spanish method of washing wool, which is always subsequent to the shearing; but as I imagine the book itself is scarce, and not to be found in the English language, Mercator's promised description, I have no doubt, will prove highly acceptable to many of your readers.

I remain, Sir,

Your most obedient servant,

NEHEMIAH BARTLEY.

\* Our Readers will notice a review of this publication in our magazine for December last.

E.

† Meaning in the Fourth Generation.

## LEICESTER AGRICULTURAL SOCIETY,

AN ACCOUNT OF ITS INSTITUTION, PLAN, PREMIUMS, &amp;c.

**T**HE Earl of Moira, a nobleman, who is so distinguished an ornament to the British Peerage, for his abilities and amiable qualities, was the founder of this society, in the year 1788, by generously subscribing fifty pounds to set it on foot, and inviting the nobility, gentry, and clergy of the county to assist in putting the plan into execution. In this he was seconded by the Earls of Winchelsea, Gainsborough, and Harborough; the members of the town and county, many of the gentlemen, clergy, and all the principal breeders.

One guinea per annum, entitled a person to be a member, but no one has subscribed more, except the Earl of Moira's fifty pounds. In the year 1790, the number of subscribers was nearly one hundred, it has increased since, and a Secretary was then first appointed.

The Premiums offered, were

To Labourers in Husbandry, who shall have reared families without burthen to the parish.

To Servants in Husbandry, who may produce satisfactory testimonials of their good behaviour for a term of years.

Not less than six children, or fifteen years service, to be deemed a sufficient pretension.

For determining what Breed of Sheep will make the best return to the Farmer and Grazier, and what management is the most advantageous with respect to them; hereby inviting information on that head.

For the melioration by culture of any indigenous or native plants, so as to render it serviceable to the subsistence of man, or useful as a crop, (not having been so before,) ten guineas.

For the most satisfactory experiment, respecting the cultivation of Flat Fescue Grass, (*Festuca Fluitans*) in wet grounds, ten guineas.

For the best account of experiments on Gypsum or Alabaster, used as manure, ten guineas.

These premiums were offered for several successive years, with several others, and of late they have extended to a shew of sheep and cattle, the particulars of which may be seen by referring to the premiums offered at the last annual meeting.

In the course of fifteen years, since its institution, it is very extraordinary that the secretary, neither from some of the members, correspondents, nor himself, should not have something to offer to the public, more than the annual advertisement; especially when so many of the capital breeders of sheep and cattle are members: and, I believe all those who style themselves the Associated Breeders. But whatever knowledge these gentlemen have acquired, they seem determined to impart none of it to the public.

W.

## ON PARING AND BURNING.

*To the Editor of the Agricultural Magazine.*

SIR,

Nov. 2 1803.

I COINCIDE in opinion with your Correspondent B. A. (expressed in his letter in your Number for September last) that the operations of paring and burning are not adapted to every species of land; and am inclined, *from experience*, to think that they are injurious to thin soils deficient in vegetables; not, however, from their diminishing the *quantity* of the soil, *for no earth but that of a peaty nature is reduced in quantity by burning*, but from a considerable portion of the vegetable, and other valuable matters, being thrown into the air, and dissipated in the form of vapour, instead of being retained in the land and converted, by a judicious application of lime, into that matter which we experimentally find contributes highly to the nourishment of plants. I am aware that the same may be stated with respect to land of other descriptions, but we should consider that, *on thin grounds* the quantity of vegetable matter, &c. which is pared off, bears a greater proportion to the whole quantity turned up by the plough, than in deep and productive soils. On all kinds, however, the incineration should proceed slowly, the heaps being covered so as to prevent the emission of flame as much as possible; for the utility of this practice is not only defensible on scientific principles, but confirmed by the accurate observations of practical agriculturists. Your Correspondent states that “clays and loams are hardened and not amended by the process.” Judging, however, from my own practice and the remarks I have been enabled to make on that of others, I am of opinion, that, *when they are covered with old coarse and rough herbage*, these are the descriptions of land on which paring and burning may be most advantageously pursued. Some parts of the clay may indeed be hardened (in small pieces) by the fire, but I am persuaded, from experience, that these lumps tend to increase the fertility of the soil by *mechanically* breaking the cohesion of its particles, which facilitates pulverization, and opens a more easy passage to moisture and the roots and fibres of plants. If I am not misinformed, clay is burned and profitably applied, in some parts of the country, as manure; and though I am satisfied that the ashes of pared and burnt land act powerfully in favour of the husbandman, *otherwise than in the manner I have just stated*, yet as the clays thus applied contain no turf or vegetable matter, it seems highly probable that the beneficial effects which arise from them are principally owing to their *mechanically* opening or breaking the tenacity of strong soils. Unquestionably, however,

if the whole of the vegetable mould, or that part of the soil which is moved by the plough, was subjected to the operation of fire, it would, in strong clays, be rendered so hard, as to become detrimental to vegetation; but we should recollect that it is but a small part of this mould which is pared off, a circumstance not, *on every occasion*, sufficiently attended to in discussing the subject of paring and burning. It is well understood among practical husbandmen, that clays and strong lands are fertilized by such applications as lessen the cohesion of their particles, and that friable light sandy soils are meliorated by an admixture of such matter as renders them more adhesive. Lime, it is well known, when acting on sandy particles and moisture in soils, causes them to become more firm or tenacious; clay, on the contrary, when mixed with this calcareous substance, is rendered much less adhesive, ferments with acids, and falls in water. Hence the beneficial effects which result from its application as a manure. Here, however, I am speaking merely of its *mechanical* operations.— That its other operations are highly favourable to the cultivator of the soil I entertain no doubt; but a *full* disquisition of its *modus operandi*. must, *if I venture on so intricate and important a subject at all*, occupy a separate paper.

A copious application of the ashes of pared and burnt land is, almost always, succeeded by luxuriant and productive crops of turnips and corn. Indeed this manure acts and stimulates so powerfully, that if more than one or two crops of grain are extracted from the land before it receives a considerable quantity of dung, sterility is generally the consequence; and as over cropping is, in such *tempting* cases, frequently pursued, it is not surprising that many landholders have prohibited the practice of paring and burning on any part of their estates. It is, however, upon the whole not injurious on deep and rich soils,† provided it is succeeded by judicious management and a proper application of manures.

It is generally contended that lime, or other calcareous matter, applied within two or three years after paring and burning, is either unnecessary or pernicious. What the effects of such an application may be when the land has not previously, or at the same time, been well dunged either from the fold yard, or by sheep folded on the turnips, I cannot\* say; but I have found such manure highly useful when applied with dung. I am decidedly hostile to the practice of continuing any description of land more than three, four, or five years in tillage, till it be laid down to grass for one, two, or three years; and I am

† Covered with so much tough and coarse herbage as to render breaking up by the plough, a very difficult and expensive operation.

\* From experience.

of opinion that long aration is more prejudicial to land which has undergone the operations of paring and burning, than to any other. If you deem this letter worth a place in your useful Magazine, you may insert it in your next number.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

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ANSWER TO AGRICOLA NORTHUMBRIENSIS ON ANIMAL LABOUR.

*To the Editor of the Agricultural Magazine.*

SIR,

I Observe in your last number two articles from Agricola Northumbriensis, both on the subject of the comparative utility of horses and oxen in tillage.

It, perhaps, may appear singular that to the last of these papers which is entitled an answer to Agricola Meridionalis on Animal Labour, I shall pay the least attention, but my apology is found in the conclusion of my letter introduced into your Magazine for September. "I am a plain reasoner, and am little accustomed to circumvention and circumlocution; but whenever this gentleman (Agricola Northumbriensis) will condescend to confine himself to insulated questions, ordinary subjects, and cold arguments, I shall have no objection to continuing with him the correspondence he has commenced in your useful miscellany."

The former paper appears, page 237, *et infra*, and enters into a long and laboured calculation on the comparative expence of horses and oxen, in which, for the sake of brevity, I am not disposed to follow A. N. with contradictory statements. I will take the estimate as he gives it, (page 241.) "To maintain a working ox requires the produce of about four, and to support a working horse that of about five acres of land." If therefore it can be shewn that five oxen will perform the work of four horses, your correspondent will, at least, agree with me that no additional expence is incurred.

It is professed that two oxen "driven by the ploughman can perform nearly as much work as two good horses, and for a considerable length of time."\* But under my supposition, it is only required that five oxen should perform as much as four horses.

The material mistake into which Agricola Northumbriensis has fallen is, that he has supposed six or eight oxen are required, where only two or three are necessary; and he has multiplied the expences on the use of oxen accordingly, without the smallest foundation from the comparative powers of the animals under his consideration.

\* See note to page 243.

If he could shew that the power of a single horse is equal to three or four oxen, I should give up the controversy, and admit the validity of his conclusions, but while the natural history of these animals contradicts this position, it cannot be supported.

I am willing to admit that discretion must be employed by the farmer to select the most powerful oxen for the purpose of tillage, and I am likewise disposed to allow that the fit attention has not been paid to the breed of these animals, to adapt them to that duty. The difference is perhaps as great between the palfrey and the cart horse, as between the oxen now employed, and those which might be applied to tillage, if the suitable attention were paid to their breed. But this operates in favour of my argument, for if five oxen can perform as much as four horses under this obvious disadvantage, when that regard shall be paid to the breed, it may be found that three oxen may perform as much as four horses, and a new motive is afforded for the encouragement of this species of animal labour. Those gentlemen who have examined the gigantic strength of these animals from some specimens which have been produced from his Majesty's farms, will not conceive the conjecture extravagant, but it is not at all necessary to my purpose.

I am a little acquainted with French farming, and I cannot conceal the pleasure I have received from the introductory paper in your Magazine of August last, where a new method of yoking by the horns is proposed, in imitation of the expedients of the French peasantry. I will venture to affirm that we can form no idea of the powers of the ox, from the manner in which he is connected with his labour in this country. It is confidently asserted in the paper to which I have just referred, that "by this mode of yoking, at least one third more of the power of the animal is obtained. In the common way, the shoulder being bruised by the unyielding bow, no vigour is exerted, excepting what is imparted by the goad, and the sinews of the neck are not brought into employment: hence the sublime and gigantic force with which he is endowed, is not rendered subservient to the important duties he has to perform, for the supply of human subsistence. The cattle proceed in the French team bold and erect; no pain oppresses them, and they chew the cud cheerfully as they pace along the furrow. On the contrary, in England the painful pressure obstructs the progress of the animals, they lean against each other, scarcely capable of supporting their own weight, and the fine intelligent eye which nature has given them to express the generosity of their temper, is clouded with anxiety."\*

\* "The tackle here recommended for twelve oxen would not amount to

All the reply which your correspondent gives to these ingenious and correct observations, is that "The French mode of yoking will not answer on British ground," and then from this ground he rises into the aerial region of political rhapsody. With his political yoke I have no concern, yet it may be useful to remind him of the familiar proverb cited by the Roman poet. "Fas est ab hoste doceri." To the yoke connected with the peaceful concerns of the farm, I only presume to speak, but for his argument drawn from the difference of British and French ground, I shall be ready to admit its propriety when he can shew that the specific gravity of bodies is materially different in France and in England, and that the mechanical laws connected with their progression, vary in these two countries. Until then I dispute its application.

Your correspondent, alluding to my letter, says, (page 249) "I must beg that your correspondent will pardon me for treating his remarks with supercilious silence,———if he does not adduce other facts and arguments than such as this, *that an old ox is food for man, while an old horse is food for dogs.* Such arguments may make an impression highly favourable to the ox, on the minds of the great body of consumers of butcher's meat. But in the breasts of the great body of *practical farmers*, they will raise sentiments of a very different nature."

In the silence or garrulity of this gentleman, I can have no personal interest: if he be silent, it may be from the recollection of the remark in the Lyric poet.

Silvis deducti caveant me iudice Fauni

Hor. de Art. Poet. l. 244.

If otherwise,

Intererit multum Davusne loquatur an heros.

Idem. l. 114.

I write to impart information to those who wish to receive it, and I am inclined to imbibe instruction from those who are disposed to afford it. The argument which he treats with so little ceremony, I must maintain as material to my hypothesis which is this, that the farmer receives for the ox when he has terminated his labour 30l. when for the horse he can only obtain 30s.

A distinction is attempted to be drawn between consumers of butcher's meat, and practical farmers, as if practical farmers were not admitted to partake of this nutritious aliment, and as if reason and common sense were not the same with all ranks and classes of mankind.

six and thirty shillings, whereas the leather harness for the same number of animals, according to the new method, would cost six and thirty pounds, and the annual expence of repairs, would exceed thrice the original cost of the former." Ag. Mag. for August, p. 78.

The dry cold reasoning of this paper may be very shortly recapitulated.

1. That the keep of five oxen for tillage, does not exceed the expence of four horses.

2. That the power of draught of five oxen, is equal to the power of four horses.

3. That by attention to the breed, and to the anatomy of the animal in the manner of yoking, the comparative strength may be determined in favour of the ox.

4. That the gear in the French method of yoking, reduces this article of expence to  $\frac{1}{20}$ th part of the ordinary charge.

5. That if the comparative power of five to four in these animals, should be over-stated in favour of the ox, ample room is left for the expence of additional strength by the produce of the ox, at the termination of his labours.

As the subject of this paper is the ox, it may not be impertinent to draw a single observation from Ox-ford. My Duncan is as dirty and greasy as the farmer's breeches, but I can still read in it that "reasoning though resolvable into general truths, rests immediately upon particular self-evident propositions."\*

The error of Agricola Northumbriensis, consists in having neglected to attend to this obvious rule, which is as necessary in the common business of life as in the subtleties of logic, and the refinements of philosophy. He sets out correctly enough, with abstract propositions, but these propositions, instead of coming under the class of "*general truths*" are *particular errors*, which being exposed, at least gives the advantage of shortening the controversy, because the calculations which take their course through five or six pages, however elaborate and ingenious, being founded on these errors, must be inconclusive and nugatory.

They appear in the subsequent form, (page 238.)

"In almost every district in which oxen are employed in the cultivation of the soil, the general practice is to yoke them when three years, and to work them till they are six years, old; employing for the first year, when they are weak and unaccustomed to the draught, eight for each plough, and six for the same work, in the two succeeding years. *It is with this description of teams, therefore, that we should make our comparisons.*"

That paragraph, taken in its connection with the subsequent reasoning, contains the following incorrect propositions,

1. That the strength of two horses is equal to the strength of eight young oxen, or six older ones.

2. That the ox can be used for labour only three years.

\* Duncan's Logic, book 4. p. 355.

3, That the number of oxen here noticed are employed on one plough in the general practice.

Could I accede to these propositions as established truths, I should have no difficulty in granting to your correspondent the full extent of his deductions, and instead of contesting his opinions, I should avail myself of this opportunity frankly to acknowledge my errors.

Had it been my good fortune to have entered the lists with *Agricola Northumbriensis* on the subject of Tythes, the intelligent paper which appears under his signature on that question would have placed me under his orders as a warm advocate in the same cause. Finding his opinions contrary to all those I have been accustomed to entertain on animal labour, both as a farmer and a naturalist, I have been reluctantly constrained to appear under a different champion, and to submit my buckler to the stroke, and *Northumbri-Ensis* will rarely be employed in vain.

I am, Sir, Yours, &c.

AGRICOLA MERIDIONALIS.

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BRIEF VIEW OF THE CONDITION OF LAND AND OF ARABLE  
PRODUCE IN VARIOUS KINGDOMS OF EUROPE.

*To the Editor of the Agricultural Magazine.*

SIR,

**I**F it be acknowledged, that literature and the arts are greatly indebted to the discoveries of learned Foreigners, It is astonishing that in the art of agriculture, we should be so little disposed in this country to avail ourselves of the assistance of other nations: to derive all the advantages of which we are capable from this source, we should commence by a cursory view of the nature of the produce in different states, and then proceed to the examination of the means successfully employed to convert the fertility of nature to the purposes of human subsistence.

The writer of this short paper aspires to nothing more than to give a very imperfect sketch of the first part of what is here recommended, he hopes that others will supply the deficiencies and complete the design.

Germany possesses many provinces which abound in corn, others are in a state of absolute and more in a condition of relative sterility. The little kingdom of Bohemia, which contains about 30,000 square miles, is very productive in corn, saffron, hops and pastures. The vicinity of the Rhine, and the Danube is in general protected by inclosures, and is remarkable for its fertility, yet there is no trade in the export of corn.

Turkey is never deficient in arable produce, but from the defects of its political constitution, it sells very little to other countries.

Spain, with a climate and soil that yield the gifts of nature, almost without labour, is often incapable of supplying her own inhabitants, and has rarely been known to export the produce of her fields.

Poland abounds with every useful species of corn, but the export of that country, while it is a great source of public wealth, is the obvious cause of private penury.

The southern provinces of Russia, are extremely productive in the essential articles of human support, but instead of conducing extensively to the opulence of those regions, it is transported with expence and difficulty for the supply of the northern provinces, where agricultural improvement is impeded by this convenient granary.

In Sweden, wheat is cultivated no where excepting in Scania, some of the other provinces afford rye, and all the northern are unproductive.

Denmark grows very little corn.

Flanders is among the most fertile tracts in Europe.

In Italy, the neighbourhood of Rome from Veterbo to Terracina is barren. The Bolognese is almost the only territory in the papal dominions, which supplies food to his temporalities. The Venetians do not grow sufficient corn for the supply of their own state, and are often obliged to buy firmans at Constantinople, or in other words, permission to eat. Thus their enemy and their conqueror, becomes their purveyor.—The Milanese is the land of promise. Piedmont is one of the richest countries, and Savoy one of the poorest, and always will remain so. It is fortunate that the dominion of Naples extends to the two Sicilies, for notwithstanding the good offices of St. Janeiro, the continental part is often extremely deficient. The island is abundant even to a proverb, but nature does not seem to have been so prodigal as in the time of Hiero, to whom the Romans were so greatly indebted.

The quantity of corn in Switzerland, has been generally much over-stated, many of the Cantons do not grow a blade of wheat.

The comparative state of agriculture in the different provinces of France, have been so frequently noticed in modern travellers, that I shall not protract this article by one additional observation on that subject, but acknowledging my obligations to intelligent strangers for the materials of this article.

I am, Sir, yours, &c.

Sept. 20, 1803.

S. R.

EXPLANATION OF AN INGREDIENT IN A USEFUL COMPOSITION FOR THE CONSTRUCTION OF NEW, OR THE REPAIR OF OLD, BUILDINGS.

*To the Editor of the Agricultural Magazine.*

SIR,

I Observe in your Magazine of last month, a paper signed Senex, in which one lb. of Litharge of gold is noticed as one of the ingredients for a water proof composition in imitation of Portland stone, for constructing new or repairing old buildings.

With the other ingredients of this compound, most persons of an ordinary understanding will be acquainted, but this Litharge of gold will be perfectly new to a large proportion of your readers, and I think Senex should have taken the trouble to have given some explanation. As the discovery alluded to in his letter, I conceive to be of material consequence to the accommodation of the farmer and of improvement to the country, I shall be obliged, Mr. Editor, to you or to Senex for an explanation of this ingredient.\*

I am, Sir, &c.

X. W.

\* We think it will be unnecessary to trouble Senex on this occasion to answer our correspondent, he will however be so kind as to see if our explanation be correct, and to set right any inaccuracy.

The Litharge of gold is the name by which a calx of lead in an imperfect state of vitrification is known in the shops, therefore our correspondent has only to apply for it under that name. If he wishes a chemical description of it, it is given in the following terms, but we wish the nature of the subject afforded us the means of explaining it without resorting to the expressions only frequent in the laboratory.

When silver is refined by cupellation with lead, this latter metal, which is scorified, and causes the scorification of the imperfect metals alloyed with the silver, is transformed into a matter composed of small semi-transparent shining plates, resembling mica; which is Litharge. Litharge is more or less white or red, according to the metals with which the silver was alloyed. The white is called Litharge of silver, and the red has been improperly called Litharge of gold.

Litharge may be easily revived into lead; accordingly much of that which is produced by refining in the large way, is reduced, by being melted upon burning coals. The part of it which is least altered by mixture with other metals is thus reduced, and by this method good and saleable lead is obtained. The rest of the Litharge of these refineries is sold and used for various purposes. Pottery use much of it for glazing their ware. It is employed for the preparation of some plasters, and other external remedies; and also in painting, to render linseed oil drying. Lastly, it is added in the composition of some glasses, for it is very fusible, and assists the fusion of other substances. It has in general the same properties as the other calces of lead. All the Litharge which is commonly sold, comes from refineries. The quantity formed there is more than sufficient for the demand. E.

ANSWER TO AGRICOLA NORFOLCIENSIS ON THE SHIM OF  
THE ISLE OF THANET.

*To the Editor of the Agricultural Magazine.*

SIR,

IN your publication for September, Dr. Wilkinson mentioned the Shim of the Isle of Thanet, which gave occasion to the enquiry of your correspondent, Agricola Norfolkensis, in your last number (page 250) on the construction and uses of that implement as being *quite unknown in East Anglia*.

To satisfy his curiosity, I have extracted from a Suffolk Farmer's narrative, (and Suffolk is a part of East Anglia) a short account of this implement, which he concludes with observing, I have used one of these large shims many years on my own farm, and know not any tool more truly useful and effective.

The passage I am about to quote is preceded by an observation on the importance of clearing the weeds from bean stubbles before the land is ploughed, and the author continues thus.

“ I should observe, that when the bean stubbles are foul they are hand-hoed, in order for drawing the weeds together with a drag rake before they plough, which they do once, or three or four times, according to circumstances. I cannot but remark, upon this singular practice, that it is the greatest panegyric in the world, upon the cultivation of the Isle of Thanet, where they have found the necessity of the practice so great, as to occasion the invention of a Machine purposely to do this work. It is a great shim which cuts three or four feet at a time, skimming the surface in such a manner, that the weeds are easily collected by harrowing, which is a cheaper and much more effective method than the hand work of the Isle of Foulness.\* Both islands have, from very extensive experience, found the necessity of cleaning their bean and pea stubbles before they plough. When the crop is going to be put in nothing can be worse than to plough in the weeds; all root weeds are, by that means planted, rather than destroyed, and others choak the plough, occasion a bad tilth, and very unsightly work. To clear therefore the field entirely before the ploughs go into it, is a most admirable system of management, I have used one of those large shims many years upon my own farm, and know not any tool more truly useful and effective.”

\* Perhaps the description above is not sufficiently explicit.—The form of the instrument very nearly resembles the paring plough, which is used in many parts of England, to pare off the surface of the ground preparatory to its being burnt. It has two sheaths or standards, which rise in an inclined direction from the ground; to them is attached a horizontal blade, three or four feet in length, which cuts the weeds from the surface. E

Some of your readers will recollect the plates of Mr. Sharp, published many years since, explanatory of the instruments employed in husbandry. These plates were illustrated by brief observations on their component parts and particular uses. It is with pleasure I have received information that a work of the same kind is now in the press. It is intended to contain engravings and descriptions of all the new implements employed in agriculture, so that the inspection of this work will in future render unnecessary the intrusion of these enquiries and explanations on the pages of your miscellany.

I am, Sir, &c.

Oct. 10, 1803.

A. C.

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PRACTICAL APPLICATION OF GYPSUM AS A  
MANURE.

*To the Editor of the Agricultural Magazine.*

SIR,

**Y**OUR miscellany of the last month, gives some strictures on American Agriculture, (page 261) and on the application of Gypsum as a manure (page 263.)

I think a few observations on its actual application in America, where its employment is best understood, will not be unacceptable to some of your readers.

Colonel John Hannum, of Chester County, gives the following account of his experiments.

The manure was continued for twelve years prior to 1796.— It was used upon Virgin soils, and upon old land, and upon land in all the different degrees of condition. The quantity raised from one to five bushels per acre, and on high grounds and sandy soils, it was found most beneficial. The useful effects of this manure have never ceased, possibly owing to the mode of using it generally adopted, which was that of applying one bushel per acre each year. It is nutritious to wheat, rye, barley, Indian corn, buck wheat, peas of all kinds, potatoes, cabbages, clover, and all common grasses.

The best time for scattering it is from the first of March to the first of May, if the ground be clear of frost. In some rare instances the plaister has produced three tons of hay from an acre of very poor land. It may be used with other manures, and the land will in less time be much more productive than without its assistance. The land on which plaister alone was employed, was not in good heart in less than three years.\*

\* Judge Peters asked an American farmer if this manure rendered the earth sterile after its useful effects are gone, and received this answer. It does create something of sterility in five or six years by mowing, then it might be lightly dressed by dung or compost; about twelve loads to the acre, will make a new footing for the plaister. This quantity will promote a wheat crop.

On two acres of ground manured with Gypsum three successive years previously to sowing without any other manure, 927 lb. of clean dressed or swingled flax were produced, although the land had been extremely poor.

Colonel Hannum had used both the American and European Gypsum, and discovered no difference in their effects as a manure.

I think the most doubtful circumstance in the employment of Gypsum, respects its uses mixed with other species of manures. Richard Peters, Esqr. of Philadelphia, says that he has satisfactorily proved by his own experiments, that dung and Gypsum mutually assist each other; yet Philip Price of Chester county, expressly asserts, "I have never found any kind of manure to be of any advantage to strengthen the plaister. I have put it on after lime and dung frequently, and have always found the greatest effect where it has been put on entirely alone, both on clover and Indian corn."

Yet he seems to contradict himself in the succeeding passage, in which I am inclined to think he is more correct.

"Where the manure has been put, the crop has been the greatest, but I believe their operations to be entirely independent of each other."

It perhaps is not so generally known as it ought to be that Mr. Charles Clarke, of Mill-bank Row, Westminster, published a treatise on Gypsum, comprised in seven letters, with an account of the extraordinary effects of this earth as a manure, to which is added an enquiry into the nature and philosophic cause why it is so productive in vegetation. It is not improbable that in a future number, I may give an analysis of this pamphlet, with some remarks, not only on the practical part of it, but on the chemical principles to which he adverts, not so much to controvert the opinions he delivers, as to diffuse more generally a subject connected with the nearest and most obvious interests of agriculture.

This gentleman has favoured me with some samples of different kinds of Gypseous earth, which confirm the explanations given in your publication of last month. By Mr. Clarke, they are received in the solid state, are pulverized, and are sold in firkins containing exactly a bushel measure, at the price of six shillings.

Those who wish to try it at their farms or gardens, may have it in small quantities ready prepared, but if greater quantities be wanted, two or three days notice should be given.

Practical farmers are acquainted with the enormous expence and inconvenient delay in manuring a single acre of land in the ordinary method: by resorting to this manure scarcely any comparative expence is incurred, and in the short interval of

a month, an extensive farm may be manured without the expence of animal labour.

I will merely subjoin subjects of enquiry to which the author of the pamphlet I have here alluded to directs his principal attention, lest the avocations in which I am engaged should postpone considerably my examination of this little work.

Gypsum (Mr. Clarke explains) is found in various parts of Britain, in other counties of Europe, and in America. He describes its varieties, and the proper sort to be employed as manure. He points out the method of distinguishing it from other earths, of preparing it, and the quantity necessary to be applied, the manner and time of spreading it, and the duration of its fertilizing qualities.

He examines its effect on grass land, on turnips, cabbages, buck wheat, rye, oats, barley, wheat, and Indian corn. He ascertains its effect on various soils, analyses its productive powers, and enters into the philosophical principles to which it is indebted for its operation.

I am, Sir,

Yours, &c.

Z. Y.

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#### ON THE POLICY OF ASSIGNING TO THE CLERGY A COMMUTATION FOR TYTHES.

*To the Editor of the Agricultural Magazine.*

SIR,

Ενθ' ἄλλοι μὲν πάντες ἐπευφημῶσαν Ἀχαιοὶ  
Αἰδεῖσθαι δ' ἱερὰ,

Hom. Il. lib. A. l. 22.

I Have seen two letters in your Magazine for April and for July last, from the pen of Mr. John Middleton, on the subject of Tythes; the one respects the peculiar situation of those who receive the Tythes, the other examines the situation of the country, of its agriculture and manufactures, by their pernicious effect on the industry of those who pay the tythes.

The first letter I shall at present pass over in silence, and the second I should have admitted to rest on its own arguments, with which I perfectly coincide, if it were not, Mr. Editor, that you in the address to your correspondents at the conclusion of your Number, had not thought it necessary to apologize to them for the insertion of Mr. Middleton's strictures on that subject. To apologize, for what? For introducing into your miscellany a bold and manly declaration of the broad interests of this country in respect to tythes, and an illustration of the genuine principles of state policy connected with their abolition.

Tythes are legally distinguished as incorporeal hereditaments which are defined to be the tenth part of the increase yearly

arising and accruing from the profits of lands, the stock upon lands, and the personal industry of the inhabitants. The first species is usually called predial, and extends to corn, grass, hops, and wood: the second is mixed, and comprises wool, milk, pigs, &c. consisting of natural products, but nurtured and preserved in part by the care of man: with a third kind distinguished as personal tythes, and includes occupations and trades I have no present concern.

The great rule in tythes is, that they are to be paid in every thing that yields an annual increase, as corn, hay, fruit, cattle, poultry, and the like, but they are not chargeable on the substance of the earth, or on what is not capable of such annual increase. Thus in fact Tythes are to be levied on the labour and ingenuity of man, but not on those things which are afforded by nature to which that industry and skill are not applied.

I am much gratified to see that all the disputants in favour of the abrogation of Tythes uniformly agree, "that an order of men, who are separated from the world, and excluded from other lucrative professions, for the sake of the rest of mankind, have a right to be furnished with the necessaries, conveniences, and moderate enjoyments of life, at their expence, for whose benefit they forego the usual means of providing them:" what is proposed therefore is the commutation of Tythes, not that the national clergy should have their emoluments diminished, but that the decent and liberal maintenance assigned them should be accommodated to the new circumstances in this country which the spirit of improvement has occasioned.

What are the leading principles by which the profound statesman will regulate the taxes that are imposed on the people.

1. All taxes should be equal on the same class and order of men.

It is well known that the Tythe varies in different parishes and counties, to the reach of many hundred per cent. and that it is not apportioned to the abilities of the laity to discharge it, but to the avidity of the clergy to collect it.

Notwithstanding the public clamour against the avarice of the sacred order, it must be admitted that the total sum collected for the discharge of the Tythes is greatly inferior to what might be exacted, but it may be questioned if the moderation of the clergy is more to be attributed to their humanity, or to their policy, for the sense of the great majority of the people is so decidedly against the present form of these ecclesiastical emoluments, that if the *summum jus* were exercised in respect to them one year, their abrogation would inevitably follow the next.

2. All taxes should be so imposed as not to be prospective on future improvements.

The discreet statesman will never obstruct improvement by hastily exposing it to the burthen of taxation. Improvers have sufficient difficulties to struggle with without suffering their infant efforts in the cradle.

In the present system of Tythes the landlord cannot adopt the most important, which are generally the most extensive improvements, nor can the farmer raise the most valuable, which are usually the most expensive crops, for this obvious reason, because the church which is exposed to no portion of the hazard or charge, is to obtain so exorbitant a share of the profit.

An illustration of this is given in the plant Rubia, or Madder, which is so extensively employed in the manufactures of this country, and for which we have paid for a long succession of time nearly a quarter of a million of money annually to the Dutch merchants. The only material impediment to the introduction of this plant has been the ecclesiastical Tythe, and the reason it has been cultivated in the United Provinces is the freedom they enjoy from this exaction. The voice of wisdom was at last heard, and a statute was passed, which enacted that 5s. an acre should be levied in lieu of Tythes on all land appropriated to this species of produce.

Would it not be better to terminate these low expedients of patching and botching, which are not only inconsistent with the dignity of the British constitution, but of every well organized government on the face of the globe? It implies the inversion of every thing that is right and reasonable, and the beautiful fabric of public law which should every where attract popular reverence and gratitude, is ridiculously made to resemble a pyramid set on the little end, and all sorts of extraneous rubbish are constantly brought to prop it up.

Let it not be supposed that I wish the clergy should not derive advantages gradually on the improvements of the country, and that a modus should be established, or a certain sum of money be paid in full compensation for all Tythe, which does not rise with the increasing rent of land. It is correctly said by your Correspondent Agricola Northumbriensis, in your publication for September, that the best form of commutation is by assigning to the clergy an emolument proportioned to the rents which will be increased or decreased according to circumstances on the renewal of the leases, and the following plan has been suggested, which would almost preclude the possibility of collusion between the landlord and tenant to the injury of the church.

“The landlord and tenant might jointly be obliged to record their lease in a public register. Proper penalties might

be enacted against concealing or misrepresenting any of the conditions; and if part of those penalties was to be paid to either of the two parties who informed against, and convicted the other of such concealment or misrepresentation, it would effectually deter them from combining together, in order to defraud the public revenue. All the conditions of the lease might be sufficiently known from such a record."

I should not, Mr. Editor, have been at all inclined to intrude my observations in your work on such a subject, because I am well satisfied of the merits of the question as they appear from the arguments of the two correspondents I have noticed: it is you, Sir, who have called me forth, it is you, Sir, who have given the provocation from the misapplied apology you have thought it necessary to make for one of the most luminous and instructive papers in the protracted series of your miscellany. To your candour I appeal for the insertion of this letter.

I am, Sir, yours, &c.

October 20 1803.

AGRICOLA MERIDIONALIS.

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ON THE INVENTION OF A NEW SCARIFICATOR PARTICULARLY APPLICABLE TO THE IMPROVEMENT OF MOSSY AND HIDE-BOUND MEADOWS.

*To the Editor of the Agricultural Magazine.*

SIR,

AS the winter sowing season is, or at least ought to be, now concluded. Some of your correspondents will be disposed to turn their attention towards the improvement of their pastures, and a hint or two on that subject may not be unacceptable.

An instrument was introduced into France by an able cultivator (M. Chateauvieux) which he called a cutting plough: the design of it was to make incisions into the land about six or seven inches deep, that the manure laid upon it might not have its good qualities dissipated on the surface, but might enter the soil, and that thus all its nourishing properties might be received into the bosom of the earth.

I have no concern in the present communication with its utility in arable ground, I confine myself to its application on meadows. Where meadows are what farmers call hide-bound, and overrun with moss, besides the advantage just alluded to in the reception of the manure, it will be obvious to every farmer at all conversant in horti-culture that the incisions alluded to by dividing the old roots of the grass will occasion an abundant increase of new roots, that the deficiency which occasioned this mossy distemper will be removed, frequently without having recourse to the expensive expedients

by draining and sluices. But in this case I would seriously recommend the easy expedient of superficial draining, which I endeavoured to explain in the paper inserted in your last Number.

The machine M. Chateauvieux employed so long ago in the neighbouring kingdom, had three shares, and entered twice as deep as appeared to me necessary on grass land. A similar instrument with only two shares was afterwards employed in this country by Mr. Wynn Baker, and he called it a Scarificator, a term derived from an operation in surgery which is happily enough applied in this instance to a similar operation in agriculture.

I see in your last number an account of the most useful farming instrument that has been invented, and the multiplicity of purposes to which Cooke's drill can be applied would appear very wonderful to a person unaccustomed to practical mechanics. I observe it is your intention to introduce into your useful publication, some account of the Horse-Hoe belonging to that machine, it will therefore be a proper opportunity to shew a simple contrivance by which I was enabled to convert it into a scarificator for the purpose explained in this paper.

My Smith was directed to prepare two or three coulters, almost exactly in the form of a coulters to a common plough, but reduced in dimensions to the size of a very strong carving knife, and made in every respect to fit the apertures assigned to the shares of the Horse-Hoe. One or more of these were introduced into different parts of the coulters beam, and a weight was applied upon the latter so as to press these sharp instruments to a sufficient depth into the ground. The horses then proceeded up and down the field and the scarification was performed with little difficulty. Perhaps it will be right to observe, by way of caution, and to prevent disappointment, that I first tried this experiment with six coulters in the Hoe-beam. The labour in this case was found to be too great for the horses by the prodigious accumulation of weight necessary on the beam, and even with the application of a stone garden roller it was found in its progress to rise to the surface, to be violently shaken, and to endanger the fracture of the beam\*.

Probably I shall make a future communication on the advantages resulting from the use of this instrument, as my time will not allow me to enter at present into any further explanation.

I am, Sir, yours, &c.

October, 14, 1803.

A LITTLE FARMER.

\* It seems almost unnecessary to notice to the practical farmer that such a machine can never be employed to advantage excepting after moist weather, and never on stony ground.

TWO RECIPES TO PREVENT THE TURNIP FLAVOUR IN BUTTER, BY THE USE OF WHICH THE MILCH COWS MAY BE FED ON THE TOPS OF THAT VEGETABLE.

*To the Editor of the Agricultural Magazine.*

SIR,

IN your Number for September, page 173, I notice an article from a female correspondent who seems well acquainted with the duties of the dairy. She is perfectly correct in asserting that the dead leaf of the turnip occasions the bad taste in the butter produced from cows fed upon it. It is well known that a nobleman, in the vicinity of Petworth, has been in the habit of feeding a dairy of thirty cows for the greater part of the winter on turnips, with the precaution of the tops being cut away, and that the flavour of the butter from these cows is equal to that from the best dairies in the kingdom.

But my principal design in this communication is to give two recipes which have been found effectual, and by which the farmer will be enabled to retain for his cows the nutritive and the wholesome food of the tops of turnips.

*Recipe 1.* Boil two ounces of Salt-Petre in a quart of water, bottle it, and when cold, put a large teacup full of the mixture into ten or twelve quarts of new milk, just as it comes from the cow. This quantity may be increased as the turnips get stronger. It must stand till it is cold before it is bottled.

The other is so simple that no one will object to make the experiment.

*Recipe 2.* Scald each pan or lead with boiling water immediately before the milk is set, or poured into the vessels.

I am, Sir, yours, &c.

*West Ham, Nov. 3. 1802.*

LACTARIUS.

ON SOME PECULIARITIES OF BUCK WHEAT,

*To the Editor of the Agricultural Magazine.*

SIR,

THE good qualities of Buck Wheat have been but little understood in this country. My intention is not in this concise letter to enter into the general theories respecting it, which are so well understood in the districts of Brabant and the Province of Westphalia, but merely to notice some peculiarities which have escaped public observation. Those who wish to be more minutely acquainted with the subject may refer to Mortimer's Husbandry, Du Hamell's Elements of Agriculture, Maison's Rustiques, and to some papers in the voluminous Annals of Arthur Young.

Buck Wheat is peculiarly useful for the nurture of bees, as it abounds with florets, and the nectarium destined for the re-

ception of the honey juice is supplied at three distinct periods.

The flour although wholly unfit for that kind of composition we call bread, yet is capable of being converted into very nourishing food in the form of pancakes. In this state it becomes the staff of life to many of the poorer inhabitants in a large district of Germany. The scarcity we have experienced within these few years, and the deficiency of human aliment which may at all times be apprehended from the horrors of war, should make us anxious to examine the comparative means of subsistence in different countries, that this dreadful calamity may be avoided.

I should not omit to observe that the seed, when freed from the exterior coat or hull, if boiled in milk, like rice, composes a very palatable, nourishing and wholesome food.

The last particular I shall notice is the result of the experiments of M. Vauquelin. Buck Wheat from the late period in which it is usually sown under the uncertain weather with which the farmer has to contend in England, is often spoiled in the harvesting, and is then supposed to be rendered wholly unfit for any purpose but to be converted into manure. This French chemist has discovered that Buck Wheat contains in its composition, alkaline salt to the proportion of one-third, so that in whatever state from damp and injury the Buck Wheat may lie, the experimental farmer disposed to avail himself of all the advantages of his situation, may convert it into potash. For this purpose the Buck Wheat may be burned within doors on a common grate, and the ashes be laid in a chest as fast as they are produced. If any charcoal be visible, it should be picked out, and thrown back into the fire. If the plant be moist much coal will be found. A close smothered fire, which has been recommended by some, is very prejudicial.

It should in this state be lixiviated with twelve times its weight of boiling water. A drop of the solution of corrosive sublimate will immediately discover when the water ceases to take up more alkali.

The earthy matter that remains may be thrown on the dung-hill, and constitutes a good manure for clay lands.

The ley formed as described, should be evaporated to dryness in iron pans. Two or three at least of these should be used, and the ley, as fast as it is concreted, passed from one to the other. Thus much time is saved, as weak leys evaporate more quickly than the stronger. The salt thus procured is of a dark colour, and contains much extractive matter, and being formed in iron pots, is called pot ash.

Such is the account Mr. Kirwan gives of the preparation of this valuable material for the purposes of various useful arts, and when potash so prepared has undergone the process in

a reverberatory furnace the extractive matter is burnt off, the water is dissipated, and it is converted into pearl-ash.

By this discovery of M. Vauquelin fumitory and wormwood no longer retain the first and second place which Mr. Kirwan has assigned them in the production of saline matter. In an account we have seen of the experiment of the French chemist, vegetables, in general, are stated to contain only 18 to 20 per cent. of alkali. This observation, we however, conceive to be extremely inaccurate, from a view of the results of the experiments on twenty-seven different species of woods and vegetables, given in the Irish transactions for the year 1789.\*

I am, Sir, yours, &c.

Q. P.

\* As the work here alluded to may not be accessible to many of our readers, and the results given are both curious and useful, we shall extract them for public inspection.

One Thousand lbs.			
	lbs. of ashes.	lbs. of Salt.	
Stalks of Turkey			Oak . . . 13, 5
Wheat or Maize	88, 6	17, 5	Aspen . . . 12, 2
Sun flowers	57, 2	20,	Beech . . . 5, 8
Vine branches	34,	5, 5	Fir . . . 3, 4
Box . . . . .	29,	2, 26	Fern in August
Sallow . . . . .	28,	2, 85	Wormwood . . . 97, 44
Elm . . . . .	23, 5	3, 9	Fumitory . . . 219, 79,

Table of the Saline product of one thousand lbs. of Askes of the following vegetables.

Saline product.	Saline product.
lbs.	lbs.
Stalks of Turkey Wheat	Beech . . . . . 219
or Maize . . . . . 198	Fir . . . . . 132
Stalks of Sun-flowers . . . 349	Fern cut in August . . . 116 or 125
Vine branches . . . . . 162, 6	According to Windenheim
Elm . . . . . 166	Wormwood . . . . . 748
Box . . . . . 78	Fumitory . . . . . 360
Sallow . . . . . 102	Heath . . . . . 115
Oak . . . . . 111	Wildenheim.
Aspen . . . . . 61	

E.

PRACTICAL REMARKS ON THE EMPLOYMENT OF MR. COOKE'S PATENT HORSE-HOE OVER AN EXTENT OF ABOUT 250 ACRES.

IN our last Number we made some observations on the employment of Mr. Cooke's machine over an extent of 250 acres; and at the conclusion of that paper we promised to make some remarks on the peculiarities of the Horse-Hoe from our own practical experience.

This paper will be considerably shortened by the minute description we have given of the implement in the explanation of the plate attached to our publication the preceding month, in which we took occasion to observe upon the nature

and qualities of the soil, and the beneficial effect resulting from the frequent movement of the particles of which it is composed.

What we recommended with respect to the different sized wheels of the Drill Machine is not absolutely necessary in the employment of the Hoe, because the length of the connecting iron C C, which fastens the hoe-beam to the axis of the wheels is so considerable as to admit the conductor of the hoe to vary the inclination of the hoe-beam very much to his own wishes.

With the machine two sets of iron implements for the hoe-beam are usually delivered. Those attached to the machine in the plate of the last number are properly called the Hoes. The other set is called scarifiers, and varies in no material respect excepting the dimensions of the foot, the heel of the former is about four inches and a half in width, and of the latter one and a half. It will be prudent that on the first hoeing when the plant is extremely feeble, and the roots scarcely penetrate the surface, the scarifiers should be employed lest the quantity of earth removed by the hoes should disturb or expose the tender plant in its nascent existence, when struggling with the rough elements with which it is surrounded.

Any man accustomed to the use of the plough, is capable of conducting either the scarrifiers or the hoes, with perfect safety. The act of ploughing is precisely the sort of practice that suits him to this duty, he is used to the employment of his eye in producing a line correctly even on the surface of the soil, and to that steadiness and anxious attention, which the management of the hoe machine requires.

Under peculiar circumstances, we have recommended the employment of the Drill Machine, even when the earth clogs on the wheels, and fixes itself on the coulter. But it is not at all prudent to employ the horse hoe when the earth is in such a state; the young plant would be seen to attach itself with the soil to the rim of the wheels, and the ground would be thrown from the hoe plates in large masses, so as to cover the plant with the earth, and leave the roots exposed and naked.

We are much obliged to Agricola Norfolciensis, for his observations on our plate of Mr. Cooke's drill machine, and he will find by referring to page 157 of the Magazine for September, that we have not neglected to allude to "the lever which elevates or depresses the seed box, and which regulates the quantity of seed necessary to be sown," and he will see by referring to letter R in page 4, that the iron bar with holes in it, by which the lever is regulated, is particularly described, yet as we thought it more convenient to represent the seed boxes open, we could not possibly introduce the lever itself, perhaps we have rather done too much than too little, by introducing the

paragraph respecting letter R into our description, but our object has been to be so minute, that an intelligent workman might construct the machine from our description.

The same correspondent objects to our account, because he says, by the improvements made, "the number of cells in the seed box is increased from six to nine."

Agricola Norfolciensis is perfectly correct that such an increase has been made in some machines by Mr. Cooke, but the horse hoe has never yet been adapted to this alteration in the machine. It is found by experiment that nine inches is the nearest approach of the rows of seed which can be admitted with the employment of the horse hoe, and our correspondent will recollect that the Drill Machine is expressly made for the sake of the horse hoe, that without horse hoeing, drilling is pernicious, instead of being beneficial, and that therefore approximating the rows to six inches is disappointing all the most valuable purposes of the drill system, which is to introduce into the field the tilth and condition of garden mould, and the cleanness of horticulture.

Perhaps some of our correspondents may suppose we have been too diffuse on the structure and uses of these implements, but when we consider that drills in one form or another have for half a century been known in this country, and that they are at this day not employed in one twentieth part of the land assigned to arable produce, we think that no endeavours can be misapplied which conduce to their introduction. We should be happy to find that the drill was considered as necessary as the harrow or the plough.

E.

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### COURSE OF CROPS, FROM DR. WILKINSON.

*To the Editor of the Agricultural Magazine.*

SIR,

**I** WRITE to correct an error in your Magazine for September. By the omission of a whole line, the Printer has strangely perplexed a sentence in my account of the rural economy of the Isle of Thanet. In speaking of the use of sea weed, I noticed the important discovery made in Scotland, that corn ripens earlier where this manure has been laid, after which, I observe "It is unnecessary to remark of what incalculable advantage this must be in a climate where the harvest is frequently interrupted by the autumnal rains. The species of sea weed chiefly used is called tangle (*Fucus Palmatus*) having a long stalk and a broad leaf."

In your Magazine the sentence runs, "It is unnecessary to remark of what incalculable advantage this must be in a climate

where the harvest is frequently interrupted by the tangle (*Fucus Palmatus*) having a long stalk and a broad leaf."

Having my pen in my hand, I will not close this without adding a few observations, connected with practical agriculture. The following course of crops was taken with success in the breaking up of waste lands, where no sheep were kept.

1, Pare and burn for turnips, which being within reach of the London cow-keepers, were sold for ten pounds per acre, and drawn time enough for sowing in the autumn.

2, Wheat.

3, Fallow.

4, Barley and laid to grass. By the above treatment the ashes secured good crops without any additional manure. In the Magazine for September, a correspondent makes some judicious remarks on paring and burning. To the advantage in favor of the practice there stated, permit me to add, that by destroying the turf the corn is less liable to be injured by the sod worm, than when sown on the inverted sward.

The burnt clay likewise in strong land, acts as a mechanical manure, and breaks the natural adhesion of the soil.

Without this process the destruction of natural coarse grass is a tedious but necessary operation previous to laying with sweet hay seeds.

The following is another course of crops taken in the neighbourhood of Chalk, in the cultivation of a sandy common.

1, The land was ploughed in the autumn, cross ploughed in spring, when six waggon loads of chalk were added, and the land worked for potatoes.

2, Tares, with which clover seeds were sown. The tares were cut green for the horses.

3, Clover cut green for the horses, then dunged and broken up for

4, Wheat. The above crops were all good, the object was to gain feeding crops, and to avoid exhausting the soil. It may deserve enquiry whether tares may not prove an eligible crop to accompany young clover, where the tares are cut green for cattle. In Mr. Holt's survey of Lancashire, white clover is mentioned, as having been successfully sown with a crop of tares on waste land. I have known clover sown with oats, and the oats cut green to the great advantage of the clover crop. This, though an expensive experiment, points out the advantage of sowing clover and grass seeds with a crop of tares.

I am, Sir,

Yours, &c.

A. WILKINSON, M. D.

*White Webb Farm,  
Enfield Chase, Nov. 21, 1803.*

ON CHEMICAL KNOWLEDGE FOR THE PURPOSES  
OF HUSBANDRY.

*To the Editor of the Agricultural Magazine.*

SIR,

HUSBANDMEN in general are of opinion that the dispute among the learned as to the food of vegetables, is of much less consequence to the *practical agriculturist* than the results of accurate and well conducted experiments, in cultivating and manuring the soil. It would, therefore, doubtless, afford them much pleasure to see, in your useful Magazine, very minute and precise accounts of such experiments and their results; for, in their opinion, nothing can tend so much to the introduction into one district of the improvements discovered or practiced in another. Farmers, in general, are not communicative, and averse to writing. They are also not in the habit of much intercourse with society, except in the line of their business *on market days*.

Hence ages, almost, have elapsed without the practice and improvements of one part of the country having been introduced into, or even known in, another, at, perhaps, the short distance of 100 miles. Such publications as yours, however, now open channels in which agricultural knowledge may flow into every part of the kingdom. To facilitate the diffusion of *this most important of all knowledge*, Editors should correspond as to the sale of their works, with Booksellers, in almost every market town; and farmers who cannot properly communicate their sentiments in writing, should be encouraged either to do so *in the best way they can*, or to apply for assistance, to some of their neighbours who have enjoyed more favourable opportunities of becoming adepts in the art of composition. Husbandmen should also be induced to vary their processes *on a small scale*, in other words, to try experiments such as these, namely, to lime one ridge, lime and dung another, compost a third, and leave a fourth and contiguous one, without any manure at all. To sow two ridges (similar in soil and manuring) with wheat, one a bare fallow, and another after drilled beans. To drill one ridge, and broadcast another, &c. &c. Such experiments, Sir, it is believed, could not be materially hurtful in any case, and, if conducted with judgment and accuracy, would probably lead to the tree of knowledge. I have thus stated what seems to prevail among many farmers relative to *experiments* and *facts* in husbandry. I cannot, however, like most of my brethren, contend that scientific knowledge may not be highly useful, as well as that gained by practice, and that the researches of chemical philosophers should not be inserted in agricultural books. I frankly confess, however, that I have occasionally joined with

many farmers, who, like myself, are not learned men, in ridiculing the conversation of several husbandmen whom we distinguished by the name of *Philosophers*, without, however, believing that they *in reality* deserved that distinction. We understood that their *high sounding words* did not correspond with their practice, and that this, in fact, was not more advantageous than that of their unlettered brethren. Having, however, of late, had opportunities of paying more than usual attention to the crops of these *Philosophers*, I am inclined to believe that they really possess some important advantages over us; for they not only excel in the value of their crops per acre, but, *I am informed*, obtain them at a smaller expence, particularly on the score of manuring. I am therefore, Sir, very desirous of becoming a *Philosopher*; and, observing in your last number that you have several philosophical correspondents, *I most earnestly* beg for their instruction, through your Magazine, particularly as to what the learned farmers alluded to, mean by quick, and fete, or effete, lime, gases, &c. also on Carbon, or coally matter, first what it is, whether pit or charcoal, or some matter floating in the air; next how it is obtained, how it should be applied, how it is rendered soluble, &c. &c. This matter, I find from the remarks of most of these *learned farmers* (who quote an author, *I think*, of the name of Kirwan,) is the best manure, nay the very food of plants. Others, however, say, that oil, or oily matter, is that food, and quote a Dr. Hunter; while others maintain different opinions. There are other things they call carbonic acid, and alkaline salts, which are said to be useful to the farmer, and therefore I should be glad to be informed as to these substances also.

And am, &c.

A NOVICE.

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### REMARKS ON TYTHES, &c.

*To the Editor of the Agricultural Magazine.*

SIR,

I Observe that Agricola Norfolkensis has not discovered that the word "Lesson" in my letter in your Magazine for September last, is a typographical error, and ought to have been *letter*; for which reason, and also because your last Number does not contain its *errata* in the last page, I am induced to point out some errors of a similar nature in my communications inserted therein. At page 244, line 7 from the bottom, "*sole*" should have been *late*, and at page 248, line 15 from the bottom, "*was not so much*," should have been "*was not much*." Agricola Norfolkensis, will, I think, find something of the same kind in his own letter. Such mistakes,

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Zz

however, Mr. Editor, are to be found in all publications, more especially in such as yours; communications for which being, no doubt, frequently too long delayed, and which must be published in a *limited* time. When I consider that my own papers are hastily drawn up, and that instead of "hurrying from the field of industry to the office of the Lawyer," I am under the necessity of *hurrying* from the humble desk of the farmer to the field of industry, (which causes some parts of my letters to be scarcely legible,) I can, the more readily, excuse your Printer. The sooner that mistakes are corrected, however, the better, and I beg leave to say that I think the last page of each number should certainly contain its *errata*. With respect to Mr. Howlett, the "Doughty Champion of Tythes," I, as well as Agricola Norfolkensis, should be happy to find that some late disquisitions in your work have fallen into his hands, and induced him to pursue the patriotic mode of communicating his sentiments for insertion in your Magazine. After what Agricola Norfolkensis has informed us respecting Mr. Howlett's publication, namely, that it contains this assertion, "That tythes so far from being prejudicial are actually, in a high degree, beneficial to agriculture," I shall not venture to purchase it till I see, and approve of, some of his leading arguments. If he had merely asserted that tythes are not detrimental to our agriculture, I would, *though hostile to the position*, have thought more favourably of the work than I do after being informed that it contains an assertion so highly extravagant as the above. I certainly do wish to see the subject of tythes farther discussed in your Magazine, and also the leading arguments by which Mr. Howlett's extravagant assertion is supported. I am not, however, very desirous of again taking any part in the controversy, into which these arguments would probably draw more able pens. Your pages already record *my* sentiments at considerable length, and I should rather wish to see it *demonstrated* that the institutions of my country relative to tythes, are beneficial, or even not detrimental, to her agriculture, than to have reason to think the foundation of these sentiments so firm, as not to be shaken by such doughty champions as Mr. Howlett or Agricola Norfolkensis.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

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MEANS OF PREVENTING RUST IN DOMESTIC  
AND AGRICULTURAL IMPLEMENTS.

*To the Editor of the Agricultural Magazine.*

SIR,

SO many ingenious instruments of which the metallic part is the most essential have been introduced both for the accommodation of the farmer's family, and for the improvement

of his land, that I conceive the insertion of the subsequent remarks on the means of preserving iron and copper from rust, given under the authority of a learned foreigner, will be acceptable to some of your readers.

Cit. Conté has adopted a method, which he finds effectual, for preventing the oxidation of iron and steel; or, in popular terms, to prevent iron and steel from rusting. It consists in mixing with fat oil varnish, at least half, or at most four fifths of its quantity of highly rectified spirits of turpentine. This varnish must be lightly and evenly applied with a sponge; after which the article is left to dry in some situation not exposed to dust. He affirms, that articles thus varnished retain their metallic lustre, and do not contract any spots of rust. This varnish may also be applied to copper, of which it preserves the polish, and heightens the colour. It may be employed with particular advantage to preserve philosophical instruments from any change in experiments, where, by being placed in contact with water, they are subject to lose that polish and precision of form which constituted part of their value.

I am, Sir,  
Yours, &c.

F. G.

Nov. 10.

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### A METHOD OF PREVENTING THE DECAY OF PEACH TREES.

*To the Editor of the Agricultural Magazine.*

SIR,

SOME papers have been introduced into your work, on American Agriculture; perhaps, therefore, the following observations will not be unacceptable. They are drawn from a memoir presented to the American Philosophical Society, on a question proposed "for the best method of preventing the premature decay of Peach Trees." The communication was honoured with the approbation, and rewarded by the liberality, of that patriotic institution. The writer very properly commences with an enquiry into the natural history of the insect, so destructive to this valuable tree, and then proceeds to the successful means of preventing its approach. It is so clearly explained by Mr. John Ellis, of New Jersey, that I shall prefer communicating it in his own words.\*

\* We refer our readers to another paper on the same subject, which has attracted much notice. "Description of a method of cultivating Peach Trees, with a view to prevent their premature decay; confirmed by the experience of forty-five years, in Delaware State, and the Western Parts of Pennsylvania. By Thomas Coulter, Esq. of Bedford County, Pennsylvania." E.

“The decay of Peach Trees is owing to a worm, that originates from a large fly, which resembles the common wasp: this fly perforates the bark, and deposits an egg in the moist or sappy part of it. The most common place of perforation is at the surface of the earth, and as soon as the worm is able to move, it descends into the earth, probably from an instinctive effort to avoid the winter’s frost. This may be ascertained by observation; the track of the worm from the seat of the egg being visible at its beginning, and gradually increasing in correspondence, with the increasing size of the worm; its course is always downwards. The progress of the young worm is extremely slow; and if the egg is deposited at any considerable distance above the surface of the earth, it is long before the worm reaches the ground. The worms are unable to bear the cold of the winter, unless covered by the earth, and all that are above ground after frost are killed.

By this history of the origin, progress, and nature of the insect, we can explain the effects of my method, which is as follows. In the spring, when the blossoms are out, clear away the dirt, so as to expose the root of the tree, to the depth of three inches; surround the tree with straw about three feet long, applied lengthways, so that it may have a covering of one inch thick, which extends to the bottom of the hole, the but-ends of the straw resting upon the ground at the bottom. Bind this straw round the tree with three bands, one near the top, one at the middle, and the third at the surface of the earth; then fill up the hole at the root with earth, and press it closely round the straw. When the white frosts appear, the straw should be removed, and the tree should remain uncovered until the blossoms put forth in the spring.”

“By this process, the fly is prevented from depositing its egg within three feet of the root, and although it may place the egg above that distance, the worm travels so slowly that it cannot reach the ground before the frost, and therefore is killed before it is able to injure the tree.”

“The truth of the principle is proved by the following fact. I practised this method with a large number of peach trees, and they flourished remarkably, without any appearance of injury from the worm, for several years; I was then induced to discontinue the straw with about twenty of them. *All those which were without the straw have declined, while the others, which have had the straw, continue as vigorous as ever.*”

I am Sir,

Your’s, &c.

AMERICANUS.

ON RECTIFYING THE SPIRIT FROM POTATOES, AND ON THE  
NATURE OF THE VINOUS FERMENTATION.

*To the Editor of the Agricultural Magazine.*

SIR,

I Observed in one of your late numbers a method alluded to of extracting spirits from Potatoes. As I have never had an opportunity of examining any portion of this extract, I cannot decide how far it may be palatable, but I have met with a recipe in a French publication, which corrects the coarse disgusting flavour of malt spirits, and I have no doubt, would be useful in rectifying those extracted from other materia.

It is taken from the *Bibliothèque Physique Economique*, No. 10. An. xi. and is as follows:

Into a quart of malt spirits, put three ounces and a half of finely powdered charcoal, and four ounces and a half of ground rice. Let these ingredients remain during fifteen days, only observing to stir them often: at the expiration of this time, let the liquor be strained, and it will be found to be much improved.

I am the more inclined to think that this method would be successful, from the following observations of M. Bertrand, Apothecary of the Hospital of Instruction at Metz.

The Spirit of potatoes has always, like spirits distilled from grains, an empyreumatic flavour. It appears to me to be owing only to the pyro-mucilaginous acid produced by the combustion and decomposition of the extrato-mucilaginous matter of potatoes. This empyreumatic taste may be corrected by rectifying the spirit with the kernels of fruit; but these are sometimes difficult to be procured. Could not this taste, which I conceive must be attributed solely to the pyro-mucilaginous acid, be neutralized by substances which have more tendency to unite with this acid, than it has with the spirit dissolved in caloric? I think carbonate of lime from a fixed pyro-mucite; whilst the spirit would be disengaged more pure than before. Charcoal likewise appears to contain carbonate of potash, capable of neutralizing this acid.

In your last number, page 266, your correspondent, M. L. boldly asserts, that it is an established fact that the vinous fermentation alone takes place in bodies that contain the saccharine juices, and he attributes the vinous process not taking effect to the deficiency of these juices in potatoes. In the *Bulletin des Sciences*, No. 75, lately published, this opinion, which I acknowledge has been entertained by the best chemists of this country, has been controverted, and perhaps your correspondent may be disposed to repeat his experiment, which

this inaccuracy of his had induced him to abandon. M. Charles Seguin in the publication alluded to shews, that in the case of clear liquors fermenting the true solvent of the fermentescible cause, whatever it be, is water, and not the saccharine matter; that the continuance of contact, and the presence of sugar, are by no means necessary for the solution of any fermentescible principle in the yeast; that this solution is made by water in a very small quantity, is true and almost suddenly, and even in the ordinary temperature of the air; finally, supposing sugar also to possess the property of dissolving any given fermentescible principle, it would be impossible to demonstrate this; since to render it perceptible, the sugar must previously be dissolved in water.

I am, Sir, yours, &c.

D. C.

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IMPROVEMENT IN HORIZONTAL MILLS, &c.

*To the Editor of the Agricultural Magazine.*

SIR,

**I**N your last number, page 235, I notice a paper explaining a curious improvement on the float-boards of the water-wheel, applicable to any purpose in which the water mill may be employed. The improvement of the country greatly depends on the introduction of these mechanical contrivances to facilitate all the operations with which farming is immediately or intermediately concerned; I shall therefore take the liberty of submitting to your attention, the object of a patent granted to Robert Beatson, for his improved method of applying the power of wind and water to horizontal mills, and the same principle to other purposes.

This discovery principally depends on a peculiar method of instructing and disposing those surfaces upon which wind, water, air, or any other fluid are designed to act; so, that by opposing alternately, a resisting, and a non-resisting surface, the whole force or impulse operates in a direct manner upon the resisting side of a wheel, vane, or sail, in proportion to its extent, and when the non-resisting side is returning against these powers, the machine is so contrived, that there is very little resistance, however large the surface. When applied to horizontal windmills, the power of those mills, even with the same quantity of sail or acting surface, may be increased or diminished as shall be required; and upon this principle, windmills may be constructed in any form of building, or in the same form of building as at present, and the same principle may be applied to several other useful purposes.

I am afraid it would not be consistent with the nature of your work to go into a minute description of this ingenious

discovery; it however may be sufficient to hint at the great variety of uses to which the principle I have just alluded to may be applied.

1st. It may be applied to the pistons of pumps, on a large scale, which, if divided into a number of long narrow valves or flaps, will be much better for such pumps, than if all in one valve. The pumps may, in this case, be made square, and of any dimensions; and, having a lever or handle in proportion, may with a small power, raise an immense quantity of water in a short time. Such pumps may either be worked by hand, by the horizontal mill, or by any other power; and might be of particular service on board of ship in case of a leak; for which purpose, portable or moveable pumps, of a great width, might be kept on board of all ships to be ready to put down the hatchways or any other part, when necessary to throw out the water, which would be done more expeditiously in this manner than by boiling or otherwise; and even on board of ship the horizontal windmill might be used to work such pumps, which would be a very great relief to the seamen in many cases.

2d. To accelerate the motion of ships, vessels, or boats, by means of a flat surface, divided into a number of spaces or flaps, which when drawn or pushed the on-way, will act with its whole force against the water; and when the other, will give way and easily be brought back, so as to re-act in the same manner. This may be done either by pushers, with long poles, or handles over the stern or any other place; or being suspended over the sides, and drawn backwards and forwards in various ways.

3d. For ventilators to let off the foul air at one part of a building, room, or window, and to admit the fresh air at another.

4th. To prevent the back draught in flues or vents of all sorts, and by that means keep the smoke of neighbouring vents from descending, and in many cases, the vent from smoking. Also to construct boxes or square tubes to put upon the tops, or other parts of vents, so as to open on one side and shut on the other, according as the wind blows.

5th. For sluices that are required to keep water out or in on either side, as the ebbing and flowing of the tide, when wanted to be dammed up for mills or other purposes; or in embankments to keep the water out on the one side, and to let it off from the other.

6th. For the bottoms of buckets or barrels to draw water with, which, if constructed on this principle, would not require being overturned before they can be filled.

Such are the particular objects to which the discerning mechanic will easily see the principle may be applied; but it may be directed to produce motion or power by the alternate

action and re-action of resisting and non-resisting surfaces in fluids of any denomination, or to produce effects by the alternate action and re-action of such fluids against surfaces of that description.

I thank you for the attention you paid by the immediate insertion of my last; and wishing to your work every possible success,

I am, Sir, yours, &c.

Nov. 15, 1803.

B. A.

### A NEW METHOD OF GRAFTING FRUIT-TREES,

*To the Editor of the Agricultural Magazine.*

SIR,

**I**N many counties of this kingdom the produce of the orchards forms no inconsiderable part of the emolument of the farmers. Perhaps there is no subject which is so little understood in the extensive circuit of agricultural inquiry; not because it does not deserve attention, but because the profits of the orchard have devolved to an inferior order of farmers who are remote from the seat of information.

William Fairman, Esq. in a letter to Mr. Charles Taylor, Secretary to the Society of Arts, has explained an important improvement in the mode of grafting standard fruit-trees; and I do not know that I can on any subject impart more useful information than what is contained in that letter, which, not only for its utility, but from its singularity, I have no doubt will receive assiduous attention.

I shall exclude from this account Mr. Fairman's introductory remarks, which are perhaps better suited to private communication with a familiar friend, than to general discussion in your publication; and perhaps the same observation may correctly apply to the sequel of the same letter. The intermediate passages are, however, too material, Mr. Editor, not to merit your particular notice.

The process is thus described:—

“Cut out the spray wood, and make the tree a perfect skeleton, leaving all the healthy limbs; then clean the branches, and cut the top of each branch off where it would measure in circumference from the size of a shilling to about that of a crown-piece; some of the branches must of course be taken off where it is a little larger, and some smaller, to preserve the canopy or head of the tree; and it will be necessary to take out the branches which cross others, and observe the arms are left to fork off, so that no considerable opening is to be perceived when you stand under the tree, but that they

may represent an uniform head. I must here remark to the practitioner, when he is preparing the tree as I desired, he should leave the branches sufficiently long, to allow two or three inches to be taken off by the saw, that all the splintered parts may be removed.

“ The trees being thus prepared, put in one or two grafts at the extremity of each branch ; and from this circumstance wish to have the method called *extreme branch grafting*.

“ A cement must be used instead of clay, and the grafts tied with bass or soft strings. As there was a considerable quantity of moss on the bodies and branches of the trees, I ordered my gardener to scrape it off, which is effectually done when they are in a wet state by a stubbed birch broom ; I then ordered him to brush them over with coarse oil, which invigorated the growth of the tree, acted as a manure to the bark, and made it expand evidently ; the old cracks were soon on the operation rendered invisible.

“ All wounds should be perfectly cleaned out, and the medication applied as described in the Orchardist, p. 14. By the beginning of July the bandages were cut, and the shoots from the grafts shortened, to prevent them from blowing out. I must here too observe that all the shoots or suckers from the tree must enjoy the full liberty of growth till the succeeding spring, when the greater part must be taken out, and few but the grafts suffered to remain, except on the branch where the grafts have not taken ; in that case leave one or more of the suckers, which will take graft the second year, and make good the deficiency.

“ I am yours, &c.

Otober 8th, 1803.

“ ARBUSTIVUS.”

\* The following is the cement recommended :—One pound of pitch, one pound of rosin, half a pound of bees' wax, quarter of a pint of hog's lard, quarter of a pound of turpentine. To be boiled up together, but not to be used till you can put your finger in it.

#### ON THE FOOD OF VEGETABLES, IN ANSWER TO THE ENQUIRIES OF TYRO.

To the Editor of the *Agricultural Magazine*.

SIR,

IN your last Number I perceive a letter under the modest signature of Tyro, in which, however, extensive information is shewn on the conjectures that have been entertained foreign and domestic on the *pabulum vegetativum*: perhaps however, the concluding remark of his letter, containing a satirical allusion to the pursuits of the chemist, would have been spared, if this juvenile student had recollected that the

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Q. A

most important and substantial improvements in agriculture, had originated in the elucidations of this patient and laborious enquirer.

M. Hassenfraz is mentioned in the concise letter I have alluded to, and yet your correspondent seems not to be aware that to him, and to him alone, we are indebted for the discovery that coal is an essential ingredient in the food of all vegetables; and this opinion is likewise confirmed by another author, M. Fourcroy, who appears to have been consulted in the short and select catalogue of authors who have not escaped the attention of Tyro.

The subsequent extract from a brief publication of the highest repute, presented to a learned society of Ireland, will, perhaps remove the doubts of your correspondent on this curious and intricate subject.

“Coal not only forms the residuum of all vegetable substances that have undergone a slow and smothered combustion, that is, to which the free access of air has been prevented, but also of all putrid vegetable and animal bodies: hence it is found in vegetable and animal manures, that have undergone putrefaction, and is the true basis of their ameliorating powers: if the water that passes through a putrifying dunghill be examined, it will be found of a brown colour; and if subjected to evaporation, the principal part of the residuum will be found to consist of coal. All soils steeped in water, communicate the same colour to it in proportion to their fertility; and this water being evaporated, leaves a coal, as M. Hassenfraz, and M. Fourcroy attest.”

They also observed, that shavings of wood being left in a moist place for nine or ten months, began to receive the fermentative motion, and being then spread on land, putrified after some time, and proved an excellent manure. Coal, however, cannot produce its beneficial effects, but in as much as it is soluble in water. The means of rendering it soluble, are not as yet well ascertained; nevertheless, it is even now used as a manure, with good effect. In truth, the fertilizing power of putrid animal and vegetable substances were fully known, even in the remotest ages, but most speculatists have hitherto attributed them to the oleaginous, mucilaginous, or saline particles then developed, forgetting that land is fertilized by paring and burning, though the oleaginous and mucilaginous particles are thereby consumed or reduced to a coal, and that the quantity of mucilage, oil, or salt, in fertile land is so small, that it could not contribute the 1000th part of the weight of any vegetable; whereas, coal is supplied not only by the land, but also by that which is constantly set loose by various processes, and soon precipitates by the superiority of its specific gravity, and is then condensed in, or mechanically absorbed

by soils, or contained in dew lands, which contain iron in a semicalcined state, are thereby enabled to decompose fixed air; the iron, by the help of water, gradually attracting the pure air, which enters into the composition of fixed air, as M. Gadolin has shewn a discovery which appears to me among the most important of these latter times; but these calces of iron may again be restored to their former state, by union with oleaginous substances, as M. Beaumé has noticed, and this is one of the benefits resulting from the application of dung before it has putrified. Hence we may understand how soils become effete and exhausted, this effect arising in great measure from the gradual loss of the carbonic principle deposited by vegetable and animal manures, and from them passing into the growing vegetables; and also from the loss of fixed air contained in the argillaceous part of the soil, which is decomposed by vegetables, and from the calcination of the ferruginous particles contained in the soil. I say in great measure, because other causes contribute to the diminution of fertility; which shall presently be mentioned. Hence also, we see why lands pastured, remain longer fertile than those whose vegetable crop is carried off, as much of the carbonaceous principle is restored by the excrements of the pasturing animals: why some crops exhaust more than others; because corn, and particularly wheat, contains more of the carbonic principle than grasses, and very little of its exuvia are left behind: why fallows are of some use; as the putrification of the roots of weeds, and the absorption of fixed air by clays, are thereby promoted: why vegetables thrive most in the vicinity of towns; because the carbonic principle is copiously dispersed by the smoke of the various combustibles consumed in inhabited places: why soot is so powerful a manure: why burning the clods of grassy land contributes so much to its fertility, and then only when the fire is smothered and coal produced; besides many other agricultural phenomena, too tedious to relate: but I must not omit that the phosphoric acid is found in coal; and this enters into the composition of many vegetables.

I am Sir, yours, &c.

Nov. 6, 1803.

HIBERNICUS.

OBSERVATIONS ON THE USE OF MR. COOKE'S  
DRILL IN SOWING WHEAT AFTER CLOVER.

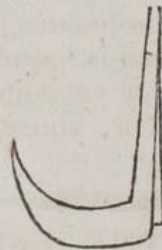
*To the Editor of the Agricultural Magazine.*

SIR,

Norfolk, Nov. 16, 1803.

WE have to thank you for a very correct account of the operation and management of Cooke's Drill, in your last number (51); and your very intelligent correspondent, (*Agricola Norfolciensis*) observes in the same number, "that

a description of any new appendage to it, which has not yet become general will be acceptable. I know not whether I can mention any alteration which will be new to him, though it may be so to some of your readers. In this county we put in by far the greater part of our wheat, on what is termed the *flag*, (i. e.) the clover layer, whether of one or two years, once ploughed, and as much as possible unbroken. When I first procured the drill, I found it impossible to have the work done completely with the broad cast iron coulter contained in the beam, as they were so broad and blunt, that we could not make them pierce the *flag* properly, with all the additional weight we could conveniently supply; and from their being fixed in with iron wedges, they were constantly one or other dropping out, and much seed was also left on the surface.— To remedy these defects, I had hammered iron coulters made, of the same form, but narrower, and very sharp both in front and bottom, and fixed into the beam by seven nuts, with these the seed was deposited at a proper depth, and none left on the surface except when the ground might chance to be unequal. Nevertheless it was always necessary to have a second person to follow the drill, to clear the coulters as they became choked with the broken tufts of the *flag*, &c. and they frequently drew along beneath them, at the bottom of the drill, small roots of grass &c. which it was impossible instantly to clear away, and very difficult to do so at all. On these *tails* (if I may so call them) the seed was consequently dropt, and came along till a little heap was collected, which would then fall off, and another collect, unless the weeds were removed with the paddle. Thus when the crop made its appearance, many thick tufts would be seen, and the intervening spaces consequently bare, being destitute of seed. We have in this neighbourhood completely remedied this defect, by having our coulters made in this form :



The turned up toe goes above the surface, and the edge from it all along to the heel, is made as sharp as possible, thus it cuts through and divides any pieces of *flag*, roots, &c. which come in the way. I have used them for the first time this autumn, and on above four score acres of wheat, have as yet scarcely seen a single tuft, and no one followed the drill but the man who directed the coulter beam, the corn coming up in the

drills as regularly as possible. When I first had the drill, it contained eight hoppers or divisions, I took it in pieces, and had it altered to ten, so that I can now put it my barley at 5 inches, wheat 7, peas 9, turnips 12, or of course one or the other at any of the above distances.

I am, Sir, Your constant reader, P. I.

#### ENUMERATION OF PATENTS LATELY ENROLLED.

*Aug. 3,* **L**AVER OLIVER, of Bury St. Edmunds, Suffolk, Upholder and Cabinet-maker; for dining-card, Pembroke, and other tables, upon an improved construction.

— 3. James Hall, of Mellor, in the parish of Glossop, Derbyshire, Weaver; for an improvement to the loom, whereby a new and cheap method of perpetually taking away the articles woven therein as they are woven is effected.

— 3. Francis Godbold, of Craven-street, Westminster, Dice-maker; for new-invented dice.

— 3. Bryan Donkin, of Dartford, Kent, Mill-Wright; for a mode of producing a rotatory motion applicable to useful purposes.

— 3. John Edwards, of Vine-street, Lambeth, Surrey, Engineer; for improvements in distilling, rectifying, and dying, whereby the same will be considerably accelerated, and the consumption of fuel will be materially reduced.

— 5. Michael Logan, of Paradise-street, in the parish of St. Mary, Rotherhithe, Surrey, Engineer; for a conservative lock, for the use of inland or canal navigation.

— 30. Cathcart Dempster, of St. Andrew's, North Britain, Gentleman; for improvements in the manufacture of canvas or strong cloths, of vegetable materials, for sails, tents, packages, and other useful purposes.

*Sept. 3.* Chester Gould, of Red Lion-street, Clerkenwell, Middlesex, Gentleman; for an hydrometer on a new principle, for the purpose of ascertaining the strength of spirits, and determining the specific gravity of fluids.

— 24. John Isaac Hawkins, late of Bordenton, in the United States of America, now residing in King-street, Clerkenwell, Middlesex, Merchant; for machinery and methods for writing, painting, drawing, ruling lines, and other things; and for applying part of the aforesaid machinery to other purposes.

— 24. Robert Ransome, of Ipswich, Suffolk, Iron-founder, being one of the people called Quakers; for a method of making and tempering cast-iron plough-shares, and other articles of cast-iron for agricultural uses.

## CRITICAL CATALOGUE.

- I. *The Veterinarian's Pocket Manual, containing brief directions for the preventing and cure of diseases in horses, including important observations on the Glanders, together with a table of different degrees of running, commonly denominated Glanders; and a treatise on some of the most common operations. By M. La Fosse, Member of the National Institute, and principal Farrier to the Army in France. Badcock, 18mo, 2s. 6d.*

WE shall merely premise that this is one of those elementary works, the multiplication of which we so much approve; the style and manner being suited to the comprehension of the meanest capacity, and the expence within the reach of every person's ability. In a preface the translator with great modesty, explains his own pretensions, and gives such an account of the present work, as will afford the reader a better idea of its nature, than any observations of ours could convey.

It were much to be wished, he says, that this little work had been undertaken by some one with more leisure and more ability than the translator is conscious he possesses. Zeal sometimes operates to the disadvantage of the cause it is meant to serve; and if the little work here adapted to the English reader, does not contain a large portion of new and important information, and convey the author's meaning with precision; the intention of this publication, is, by no means answered. But an acquaintance of some years with all that has appeared on the subject, leaves little to doubt (it is apprehended) that many points are imperfectly treated, or but slightly glanced at, or wholly omitted by preceding writers. Indeed the want of a more liberal practice is felt as an insuperable bar to improvement in the art of Farriery, which would be best served by communications of the discoveries made, and the treatment most successfully followed, by various practitioners. This it is which has of late years done so much for other branches of medicine, and which, for the sake of humanity, if we reckon nothing for our health, our pleasure, or our interests, so materially furthered by the horse, it is devoutly to be wished could be extended to this branch also.

M. la Fosse, the distinguished author of the Veterinarian's manual, was principal farrier to the late King of France, in which post he succeeded his father, the elder la Fosse, who, it is believed, was the first person that improved the Art of Shoeing. Thus our Author, born a farrier, has a legitimate claim to deference on every point relating to horses. A single glance at this table of contents will convince the reader, that his active mind has been directed to the greatest variety of subjects and the most minute particulars. In this work he does not treat so fully on every subject, as is seen in his *Guide du Marechal, Farrier's Guide*, a very elaborate performance, of which this manual is an abridgment, chiefly for the use of army farriers. The Guide passed through two editions; and the Manual called the third, (dated 1803.) has the addition of a chapter on the Anatomy and Physiology of the Foot, evidently taken from an English treatise, recently published. But that which distinguishes this work, is the table of the Glanders, a subject upon which the author has bestowed a great deal

of labour, and upon which no one ought to remain ignorant a moment of every step that is made towards the discovery, its seat, pre-disposing causes, and cure. It is the new information contained in this part of the book added to the reflection that the lives of two men, father and son, have been devoted to the discovery of a cure for the glanders, (the great desideratum in farriery,) that induced the Editor to step aside from a laborious occupation, though conscious of his inability, to present the world with this little volume. In this part of it he hath rendered the author most faithfully; less anxious about what he considered as subordinate parts of the work, with which he has taken considerable liberty, and wholly omitting that which relates to the foot, he consigns the work to the candor of the reader."

This little work is divided into eight chapters; in the first the author treats of preserving the health of horses; the second, third, and fourth, are devoted to descriptions of, and observations on, diseases, together with the medicines and methods of cure necessary to be adopted; the fifth gives a concise account of the most common operations in farriery. In the sixth the author refutes several vulgar errors and prejudices; in the seventh the natural defects of the animal are considered; and the eighth contains brief instructions to purchasers of horses. To these are added fifty different forms of medicines which are numbered, and to which the author frequently refers in the course of the work.

From the variety of subjects which are here treated of, it will be seen that brevity and convenience have been studied in this publication. The table of the various kinds of runnings denominated Glanders cannot be too carefully and attentively studied by every person whether proprietor or otherwise, who is in anywise interested in the management of an animal to which we are indebted for the most important services: and to such we recommend this little volume as replete with useful and practical information.

We shall conclude with extracting what the author says on the subject of a disease which proves fatal to so many horses, frequently only from the ignorance of those to whom the care of them is entrusted.

GLANDERS.—So great has been the destruction of horses which have either really been, or reputed to be glandered, through the prejudice of ignorant persons, that it has been said, whoever can point out the distinction between the communicable disease and those which bear some affinity to it, will confer a benefit on society, and serve the cause of humanity. Much labour had been bestowed on this subject, by the elder la Fosse, who threw a great deal of light on the disease, which, of all others that attack the horse, is least known, and therefore most misrepresented:

We propose here to shew; 1. That it is easy to confound this disorder with others that resemble it, in some particulars. 2. That among the different sorts of glanders (so reputed), some are infectious, while there are others that are not so; and 3. That some of these are curable, and that others are incurable.

There are few veterinary practitioners who do not know that Strangles, Bastard Strangles, Purpiveness, or Asthma, and other pulmonary complaints, exhibit the same external appearance as the glanders, properly so called; consequently it is easy to be deceived on the

subject, and the farrier will fail in his eadeavours at a cure if he has not previously ascertained the distinguishing symptoms of the disorder. What then ought he to do, not to be led into error, and to ascertain with precision that species of the disorder with which the animal is affected? By attending to the annexed table, which has been drawn up with much labour and patient investigation, he will perceive the true principles on which is founded the real glanders, the glanders properly so called; for we cannot too much insist on these terms.

After much experience on the subject of the diseases of horses, we are convinced that it is necessary to distinguish three sorts of glanders, viz. The first sort, which is the glanders, the real glanders, the glanders properly so called; the second is nothing more than some disorder circulating in the mass of blood, and the third may be denominated the farcy glanders. Glanders of the first kind is not infectious, except it be complicated with other disorders; but this is seldom the case, and we may daily witness horses thus attacked, abandoned as incurable, or with more humanity put to death. On the contrary, Glanders of the second species is communicable, because the horse, besides, running at the nose, and becoming glanderous, has likewise shancers, and these chancers appear to be the only proximate cause of contagion.

The third species of glanders is in like manner contagious, because it not only occasions a running at the nose, but the tumefied glands, and the cartilage, of the nose are shancered, and likewise contain parts of the body are covered with lumps and shancers, which latter characterise the farcy glanders, the most dangerous disorder of the three, but not the most common. These two latter species of glanders are infectious, because the disease resides principally in the blood; but the glanders of the first species, the real glanders, the glanders properly so called, is not any wise contagious, although it most frequently occurs.

The second and third species are incurable, but the last only is mortal. But as to glanders of the first sort, it is neither incurable nor mortal. In the first place, we repeat, this disease is not mortal in any case, and a horse attacked by it is in the same situation as a man who has lost the sense of smelling; it is the loss of a sense, and the loss of a sense prevents neither the man nor the horse from fulfilling all the animal functions; for as we daily observe men affected with ulcerated noses preserve an otherwise sound constitution, and even look jolly, so we may observe a glandered horse preserve his strength and health.

Secondly; it is incurable only when inveterately confirmed, but when taken in an early stage, its progress may be stopped with very little trouble.

Thus we find, that glanders of the first species, the real glanders, glanders properly so called, absolutely consists of nothing more than the loss of the sense of smelling. Its cure may be readily effected by frequent bleedings and the fumigations, No. 33. Hence may be estimated the little necessity there is for killing horses attacked by this disorder; and what important services may be rendered to society, or to a regiment, for instance, by an intelligent farrier making

a proper distinction between this species of glanders and all other affections and diseases resembling it. It is to be hoped that the table annexed will be a sufficient guide to regimental farriers, and others in making that distinction.

On taking up this little work we were at first impressed with an idea that it was a republication of a book we had formerly seen "On Horses," by la Fosse; but this we presume, not having the book at hand, must have been the father of the present author who is alluded to in the preface.

II. *The Outlines of the Veterinary Art; or the Principles of Medicine: as applied to a knowledge of the structure, functions, and economy, of the Horse, the Ox, the Sheep, and the Dog; and to a more scientific and successful manner of treating their various Diseases. The whole illustrated by Anatomical Plates. By Delabere Blaine, Professor in Animal Medicine. In 2 vols. 8vo. 560, and 783, pp. 11. 5s.*

NOTWITHSTANDING the numerous treatises on the subject of Veterinary Medicine, before the appearance of the present work, the public professed none, which combined the theory with the practice of that useful art, in such a full, clear, and scientific, manner. To expatiate on the utility of a work of this nature, when that utility is so generally acknowledged, would be both unseasonable and impertinent. It may not, however, be amiss to introduce a few of the author's observations on this subject, and likewise the account he himself gives of his work.

"To farriers, it is needless to say how valuable such a work would prove: the awakened attention of the public to the gross impropriety of their general practice, has convinced many of them of the necessity of receiving instruction; but which the nature of their situation prevents numbers of them from seeking at the seminary established for that purpose.

"To diffuse, therefore, generally the benefits of a scientific investigation of this subject; and to teach that art among all ranks of persons, which the Veterinary College is attempting among individuals, is the intention of the present work: and it is evident, that in such an undertaking a very wide field of information must be entered into; a simple account of the form of the body in health, and of the mode of treating it under disease, will not constitute a whole outline of this extensive subject; for in an art, the first principles of which even, are but emerging from obscurity, the mind must gradually be prepared to understand its more complex parts, by a knowledge of its collateral branches. To this end, the nature, the origin, and progress of the healing art in general must be considered, and the relations the several branches of it bear to each other. The present theories must be also taught, and the various other subordinate parts weaved into a gradatory scale, by which the mind may be led to reason and to think medically. The comparative formation of the several forms living matter assumes, and the individual structure of those animals, called domestic, must be in turn examined. This leads to an explanation of the laws of the animal œconomy, and the functions of the parts described, which

will open the mind to a proper conception of those morbid changes producing disease, and suggest the means of counteracting, or removing their effects.

“ It may perhaps be supposed, that I wander too far, in the introduction of such varied matter, as will be found in the following pages; but it must be remembered, that I am teaching the practice of veterinary medicine fundamentally. This work is not intended to give merely a certain number of prevalent diseases, with a proportionate number of approved receipts for the cure: for it is in a great measure owing to this system of writing, the art has advanced no farther. It is designed to draw farriers, by degrees, to think and reason on the subject they profess; and hence to act not from a receipt book, but from well-grounded principles. These are the considerations that have stimulated me to the wide field I have entered into; and from this it will be perceived, I have undertaken no easy task; how I have accomplished it, a generous public must determine: but when the present state of the science is taken into consideration, how very few authorities I could borrow from; with the difficulty of accumulating information on subjects so numerous and diffuse, I hope I may claim some indulgence, and be permitted to escape from too severe criticism.

“ The subject-matter I have divided into three grand divisions. The first of these comprises what may be termed the collateral branches of the art, commencing with a General History of Medicine from its origin to the present time; with the leading theories that have appeared, and those at present in common reception: and though in this I may be deemed irrelevant, yet when the connection, that all the branches of the healing art have with each other is considered; and particularly that this branch has sprung from, and must grow with, human medicine as its parent stock, this history will then be found to lead to a proper consideration of the general subject. I have next proceeded to a History of the Veterinary Art in general; to which succeeds a particular account of its state, and improvements in this country, by which the reader will be enabled to judge how far we stand removed from other nations in this particular, and what they may be supposed to have borrowed from us, or we to have learned from them. From these histories the general properties of matter are examined, and its division into living and dead. Dead matter is governed by chemical laws, and living matter is likewise, much of it, under its guidance; hence we are led to a general history of this branch of science, and an explanation of such of its terms as will frequently occur in the progress of this work. A consideration of living matter introduces an outline of comparative anatomy, or a comparison between the structure, functions, and œconomy of the various animated forms surrounding us.

“ The second division of the work offers a detail of the parts of the body of the most noble among the quadrupeds domesticated to our use, the *horse*. The anatomy of this animal forms a key to the knowledge of the others, and the description is blended with a physiological account of the functions and œconomy of the parts; and as the knowledge of the extremities forms one of the most essen-

tial points in the practice of farriery, I have described them separately, that the practical remarks on them might come into one point of view. The parts treated of have been most of them taken from my own dissections; yet I can by no means assert they are all critically correct: if it has taken so many centuries to gain a knowledge of the human frame, it cannot be supposed an easy task at once to describe so complex an animal as the horse. Nevertheless, I hope no glaring errors will appear, and wherever I have had doubts on any subject, I have faithfully recorded them, as well as my authorities, when I have made use of the information of others.

“ I have illustrated the anatomical part of my work with plates, as I deem them of the greatest possible assistance to the acquirement of a knowledge of anatomy, particularly where recourse cannot be had to the subject itself. The engraving of these plates is not so good as I intended it should be, but I did not receive altogether the assistance I had reason to expect. As figures, however they may want beauty, yet as being all drawn by myself from the dead subject, I can venture to assure my readers, they are tolerably correct. In the parts represented, I have endeavoured to form such an arrangement as that those most important, either in elucidating the œconomy of the animal, or as more immediately concerned in the practice of the art, may be particularly brought forward and represented; and in this respect, I hope I have been rather fortunate in my selection.

“ I have divided the subject both of this and the former division, into sections. Each section of this division comprehends a particular branch of anatomy, as Section XV. treats of Splanchnology, or the Description of the Viscera. I have made use of the terms that are usual in human anatomical descriptions, but I have in the Index as well as throughout the description, introduced the synonyma of the farriers; and, it will appear, whenever it has fell to my choice, I have used English terms.

“ The third division is allotted to the practical part of the veterinary art, or a description of the diseases of the *horse, ox, sheep,* and *dog,* and the mode of cure; and it will be seen, I have first treated of what may be called its medical part, that is speaking with analogy to the human; the first comprehends that practice that falls under the cognizance of the physician; and the second, that which is usually confined to the surgeon. I have likewise attempted something like a classification of diseases; not, I am convinced, so perfect as it may be, but such as I conceive the present state of the science best admits of: had I attempted a more strictly nosological arrangement, I might have bewildered the uninformed, and perhaps have lost myself: but some classification of diseases has great advantages, for as some remote parts of the body follow the same laws in structure and œconomy, so they are liable to similar diseased affections; the inflammation of mucous membranes produce similar appearances in many respects, whatever part of the body it takes place in. The inflammation of the cellular membrane producing phlegmon, and abscess, is the same whether it occurs on the cheek, or on the buttock; hence a knowledge of these diseased affections

can be rendered more comprehensive by their being classed under one head, than when suffered to remain scattered through all the varieties to which, from the different parts affected, they have hitherto been.

“This classification forms twenty heads or classes; ten of which include the medical part of the art, and ten belong to the surgical; after which, the operations that occur in farriery are introduced; and that the treatment of diseases might be rendered plain and intelligible to those not in the habits of reading medical works, I have, wherever I thought it necessary, added a recapitulation of the symptoms, and mode of cure, at the end of the complaint, divested of the reasoning and probable causes; by which means I offer to those who study from the foundation all they can wish as to cause and effect, and yet do not deprive those who only look into this work as a vade mecum, of the benefit of a concise list of directions for the cure of any particular complaint.

“It was my intention to have been much more diffuse on the head of diseases, but the first and second parts of the work exceeded my expectation so much in the room they occupied, that I was forced to compress this part much; and for this reason likewise, I have been much more concise on the diseases of other animals, particularly on those of dogs, than I had proposed; nevertheless, I hope, I have added something to the information on these subjects.”

Mr. Blaine's account will be sufficient to shew the general division, and to afford an idea of the contents of this important work. In justice to that gentleman, we cannot refrain from congratulating him on the manner in which he has executed the task he imposed on himself. As an intelligent and enlightened practitioner of Animal Medicine, he investigates and compares the opinions of other writers with facts; and therefore the conclusions which he himself draws from them, are entitled to the greater deference. The professor must, however, pardon us if we censure the numerous inaccuracies, the negligence of style, and inelegance of diction, that appear throughout this work, which, with very small trouble, might have been removed or avoided; and for which, we cannot consider the apology he offers at the conclusion of his preface, as altogether admissible. We, however, doubt not, that the encouragement experienced by Mr. Blaine, will be equal to the utility which the public is likely to derive from his labour.

In our succeeding number we shall resume our notice of this work, which, from its nature, is calculated to interest our agricultural readers, to whom we recommend it as the best guide in the management of the animal; so particularly conducive to the comfort, convenience, and prosperity, of the farmer.

III. *Some Doubts relative to the efficacy of Mr. Forsyth's plaster in filling up the holes in trees, &c. ascribed to it by Dr. Anderson, and Mr. Forsyth. In a letter to Dr. Anderson from Thomas Andrew Knight, Esq.* 4to. 16 pp. 1s.

NONE of our readers can be ignorant of the nature of Mr. Forsyth's discovery for healing the wounds both of fruit and forest trees, and

restoring such as are decayed to a state of sound and vigorous health. The invention, and likewise Mr. Forsyth's publication, descriptive of the advantages attending its use, have been noticed in this work. Nor can we suppose that agricultural men can be unacquainted with labours of Mr. Knight, who for so many years has devoted his attention to the cultivation of fruit trees, and in particular the apple. We are not displeased to see men of intelligent minds and long tried experience in any art, scrutinizing the merits of an invention or discovery, however plausible and well attested it may come before the public; the cause of truth, and the benefit of all who are interested in the subject, must ultimately be promoted by such investigations. As we have not had an opportunity of inspecting the process of Mr. Forsyth, and judging of its effects, we are not prepared to decide how far his statements are correct, or in what degree the objections of Mr. Knight are well grounded. These objections, however, we shall endeavour as briefly as possible to submit to our readers.

By the desire of Sir John Sinclair, who was then President of the Board of Agriculture, Mr. Knight waited on Mr. Forsyth at Kensington, to see the effects of his composition, but that gentleman being at first absent, he examined at leisure some of the subjects of his experiments. Some pear trees were shewn him, which he was told had been restored to health and vigour by means of the composition. Those he examined very closely; the branches had been taken off about five years before, and "had been reproduced in the same manner," says Mr. Knight, "as I am confident they would have been, had the plaster never been applied." He afterwards saw some golden pippin trees, on which none of the effects ascribed to the plaster had then been produced; but as these trees have since been described by Dr. Anderson and Mr. Forsyth to be in a very flourishing state, the author thus endeavours to account for the appearance of health and vigour that has been given them. "I suspect," says he, "that Mr. Forsyth has, according to the rules of Dr. Lest's practice, cut off the old branches, when he could not cure them; and that young shoots which will retain their health and vigour for three or four years, have been produced, and are now ready to be shewn to promote the sale of Mr. Forsyth's book." "With regard to the extraordinary fineness of the fruit, that," he says, "could not be surprizing in such summers as those of 1801 and 1802, when the fruits are every where fine, and the canker less destructive."

Mr. Knight then contends for the impossibility of over forming a young healthful tree from a piece of a decayed and dying one, and informs us that a wash composed of lime, cow-dung, and wood ashes, the materials employed by Mr. Forsyth for his composition, was in common use in Herefordshire, almost half a century before that gentleman received a parliamentary reward for the discovery and application of it. He asserts in the most positive terms, that a wound in the wood of any tree never can be healed in such a manner that the old and new wood unite with, or are not readily discoverable from each other. He acknowledges that Mr. Forsyth shewed him a tree which he informed him had been hollow, and that he had filled it up, but he continues, "I also acknowledge that I could not dis-

tinguish that which he told me was new wood, from that which I am sure was old, nor discover the slightest line between them: the medulla occupied its true central position, the annual layers of wood were concentric, and the silver grain, (the medullary processes of modern botanists,) diverged regularly from the medulla to the bark in every direction. How these things could have happened in a tree which had once been hollow, I am totally at a loss to conceive, and I believe it would puzzle Dr. Anderson and all the philosophers living to discover. I therefore leave it for Mr. Forsyth to explain, and for the public to believe if it please, that *holes in trees or hollow trees, may be brought in a few years to such a state of soundness that no one can know the new from the old wood.*"

Notwithstanding the doubts which have been raised on the subject of Mr. Forsyth's composition, his work has been translated into the French language by an able continental agriculturist, M. de Luc, of Geneva: while the demand for it at home, has rendered a third edition necessary, as we find by a postscript put into our hands since the above observations on Mr. Knight's pamphlet were written. In this postscript he says:

"Since the printing of this third edition was completed, I have been fortunate enough to have derived an accession of most respectable testimonials, tending to remove any doubts that may have arisen in the public mind respecting the verity of my statements on the subject of my composition."

He then introduces a certificate signed by Doctors Lettsom, Woodville, Sims, and Myers, and Messrs. Norris, Astley, Cooper, Edward Coleman, and H. N. Willis, to the following effect:

"SIR,

"As you had the goodness lately to give us an opportunity of examining several trees in Kenington Gardens, in the various stages of renovation, or filling up with new wood; and as reports have been circulated, tending to discredit the efficacy of your process; we feel it an act of justice, not only to you, but to the country, which is deeply interested in your discoveries, thus publicly to declare, that the statements you have published on the subject contain nothing more than the truth."

"I also avail myself of this opportunity" (continues Mr. Forsyth) "to add a discovery which I have recently made, and which, as being calculated to save time and labour, may deserve attention."

"Instead of paring away the bark, as had heretofore been the practice, and covering the stem with the composition, I now merely scrape off the loose bark, and apply a mixture of cow-dung and urine only (made to the consistence of a thick paint), with a painter's brush, covering the stem carefully over. This softens the old scabrous bark, which peels off during the following winter and spring, and is succeeded by a fine smooth new bark."

# HISTORY.

## National Transactions.

### GREAT BRITAIN.

**T**HOUGH the expectation of an invasion has in a great measure subsided in this country, yet the utmost degree of activity very properly continues to prevail. In many places the volunteers have entered upon actual service, and the encamped troops have not yet been marched into barracks or cantonments. The press for seamen has likewise been very hot, and all the measures of government indicate a marked suspicion that the enemy have not relinquished their rash project. The regulations respecting the Army of Reserve, contained up in a circular letter from the War Office, for enlisting men from that body into the Regiments of the Line and the Guards, induce us to believe that the administration of this country has not abandoned the design of offensive operations, which they might be enabled to undertake by such an increase of our disposable force.

The colonies of our enemies continue successively to fall into our hands. The London Gazette of the 5th of November contained the intelligence of the surrender of Demerara and Essequibo to the forces under the command of General Grinfield and Commodore Hood on the 20th of September. No other particulars are yet known, but that the Hippomenes, of 18 guns, the only vessel of the Batavian republic there, is included in the capitulation.

**FRANCE.**—It is now generally believed that the First Consul finds it indispensable necessary to vary the mode of his attack upon the British empire. The Brett fleet, it is now said, instead of being designed for Ireland, is intended to cross the Channel in a more direct line, and to escort the flotillas of gun boats to some point of the English coast. In the present season of the year, however, we conceive that we have nothing to apprehend from the latter, should an expedition be hazarded in vessels so frail and unfit for the purpose.

The First Consul, acceding to the tears and intreaties of his loyal subjects, has agreed not to venture his precious person in an enterprize of such peril. He is now inspecting the preparations on the coast, having arrived at Boulogne on the 18th. The delays which have occurred in the completion of these preparations seem clearly to indicate that Bonaparte has been frustrated in some of his earlier plans, and has met with disappointments which he by no means expected. The generals to whom the command has been offered, Moreau, Massena, and Macdonald, have all, it is said, given their positive refusal to engage in any part of the undertaking, and have consequently incurred the displeasure of his Consular Majesty.

So much is, however, certain, that the most active exertions continue to be made along the French coast; but it is not expected that the embarkations will commence before the beginning of next month. Of the amount of the distribution of the French naval force the following account is stated to be correct:—From the last observations made by our cruisers off Brest, and dated November 10th, it appears that the number of vessels in the outer road consisted at that time of seven sail of the line, three frigates, and a few sloops of war and transports; but that the precise number of vessels in the inner harbour could not be ascertained. At Ferrol the French have five sail of the line, which are blocked up by a superior squadron under the command of Sir Edward Pellew. The only ship of the line stated to be ready for sea at Rochfort is a three-decker, filled with men, and probably destined to effect a junction with the Brest fleet. The number of the Boulogne flotilla has been accurately ascertained. Lieutenant Shirhard, who was lately em-

ployed to look into that port, approached so very near the entrance of the harbour as to be able to count every vessel ready for sea, even without a glass. They amounted to 86; but since that time 29 gun-boats, from Dieppe and other ports in the Channel, have reached Boulogne, so that the whole number may be estimated at about 120. Supposing the whole of these gun-boats can stow 100 men, the whole of this vaunted armada cannot put to sea with above 12,000 troops.

But while we have reason to exult in our own security, the powers of the Continent which happen to be within the reach of the Usurper's grasp, experience the fatal effects of his rapacity. The sum of one million sterling has been demanded by the French government, under the name of a loan, from the free imperial city of Hamburgh, to which place General Berthier has been dispatched to enforce a compliance. To keep up the farce, the plundered and degraded country of Hanover has, it is said, been offered to that state as a security for the repayment of that sum. Accounts from the Continent, however, state, that should the Senate refuse the loan, the occupation of the city by French troops may be certainly expected.

SWEDEN.—We are happy to find that the important convention between this country and the Swedish government, relative to contraband articles, is at length finally and satisfactorily adjusted. By this convention the latter power distinctly agrees, that all manufactured articles serving for the equipment of ships of war, if destined for the ports of an enemy, are to be subject to confiscation; and all unmanufactured articles serving for the equipment of merchant-ships, with certain exceptions, are subject to the right of pre-emption. The right of pre-emption is indeed all that this country has claimed in practice with respect to these articles. As they constitute not only the staple, but almost the whole produce of Sweden, it appears equitable and just, that whilst Great Britain should not be deprived of the advantage of preventing naval stores from being conveyed to the ports of enemies, the Swedish government should not, on the other hand, find the principal, if not the only branch of their commerce annihilated, in consequence of the introduction of a war to which they were not a party. The articles exempted from the right of confiscation have not been usually considered naval stores.

EGYPT.—To this province we must look for the principal cause of the present war, and what may be its ultimate fate it is impossible for the most sharp sighted politician to determine. It seems, however, to be threatened with ruin, both from within and without. Internally it is at this moment a prey to three opposite powers, who have hitherto maintained the balance with such an even hand, that it has been difficult to decide to which the fortune of the day would decline—the Porte, the Beys, and the party of Abdul Wechal; and it is certainly menaced alike by the French and the English, for it cannot be conceived that the vast preparations of the former along the Italian coasts, and the augmentation of the fleet at Toulon, have any other object than an expedition to Egypt, while the expedition completing by the latter at Malta is universally supposed to be designed for a more important purpose than merely the occupation of the island of Elba. It seems impossible that the Porte can by any means retain the sovereignty of Egypt.—Cairo has unquestionably fallen into the hands of the Beys; and Alexandria, there is every reason to believe, had shared a similar fate; but some accounts state, that the Beys have been compelled to raise the siege of the latter, in order to fall back and protect Cairo from the menaced attack of the fanatic Abdul Wechal. Thus internally harassed and divided, the whole province of Egypt must be an easy prey to either the French or the English.

EAST INDIES.—An overland express was lately received from Bombay, by the way of Bussorah, of the date of April 29. The Bombay district is quiet, with the exception of a little disturbance by Mulha Row, who had resisted the authority of the government, escaped to the mountains, and appeared in revolt. The Rajahs on the western part of the peninsula had, how-

ever, formed a plan for his apprehension. Holkar had also threatened to invade Sural, but his menace excites no apprehension; the cattle is put into the best state of defence, and every necessary preparation made by Narmarud Dien, the present Nabob. The Nizam, as well as Scindic, has also approached Holkar's boundaries with two powerful armies, and he has reason to tremble for his own capital. Some fresh disturbances are likewise said to have broken out in Mewat, a district in the heart of Hindostan.

## Agriculture.

### *Premiums offered by the Board of Agriculture 1803.*

1. **T**O the person who shall build and describe to the Board the cheapest cottage, being at the same time durable and comfortable, with not less than two rooms above, and the same number below—the gold medal.

A plan, elevation, and account of the materials and expence, verified by certificate, to be produced on or before the first Tuesday in May, 1804.

2. To the person who shall produce to the Board the model of the best and cheapest cottage, on a scale of one inch to a foot, with estimates of the expence of erecting it—from five to ten guineas, according to merit.

To be produced to the Board on or before the first Tuesday in December, 1803. The same premium for 1804.

3. To the person who shall build on his own estate the most cottages for labouring families, and assign to each a portion of land for the support of not less than a cow and a hog, and a sufficient garden—the gold medal.

Accounts of the expences of building, land assigned, culture (if any), live stock, and state of the families, with the rent paid, verified by certificates, to be produced to the Board on or before the third Tuesday in April, 1804. The same premium for 1805.

4. Doubts having been expressed by some persons concerning the expediency of cottagers keeping cows, except on rich soils, the Board will give to the person who shall produce the most satisfactory account, verified by experiments, of the best means of supporting cows on poor land, in a method applicable to cottages—the gold medal.

Accounts to be produced of the soil, articles cultivated, produce, stock kept, and every material circumstance, verified by certificates, on or before the first Tuesday in May, 1804. The same premium for 1805.

5. The Board being informed that the labouring poor on the estates of several persons in Rutland and Lincolnshire, having land for one or two cows, and a sufficiency of potatoes, did not apply in the late scarcity for any parochial relief, and it appearing to be a great national object to spread so beneficial a system, the Board will give to the person who shall explain in the most satisfactory manner the best means of rendering this practice as general through the kingdom as circumstances will admit—the gold medal.

To be sent to the Board on or before the first Tuesday in November, 1803. The same premium for 1804.

6. To the person who shall make the most satisfactory experiments tending to the improvement of the culture of each of the following plants respectively, viz. wheat, rye, barley, oats, pease, beans, tares, buck-wheat, turnips, cabbages, ruta бага, potatoes, carrots, parsnips, clover, lucerne, sainfoin, eschicory, hemp, flax, hops—the silver medal.

Accounts verified by certificates, to be produced on or before the second Tuesday in May, 1804.

The same premium for 1805. The same premium for 1806.

7. To the person who shall, through the entire summer of 804, keep the

greatest number of cattle in stalls, houses, or confined yards, and fed entirely in the soiling method with green food--the gold medal.

Certificates of the number of cattle, acres of food, and sorts eaten, the quantity of dung made, with other circumstances of the experiment, to be produced on or before the first Tuesday in December, 1804.

The same premium for 1805. The same premium for 1806.

8. To the person who shall improve and bring to the annual value of not less than 10s. an acre, the greatest number of acres, heretofore waste, not less than fifty--the gold medal.

Accounts of the improvement verified by certificates, including the state of the land before the experiment, and of the cultivation, expences, and produce, to be laid before the Board on or before the first Tuesday in March, 1804.

Notice of the intended improvement to be sent to the Board, and therefore secrecy cannot be required.

The same premium for 1805. The same premium for 1806.

9. To the person who shall lay before the Board the most satisfactory account of Mr. Elkington's drainages--the silver medal.

The soil and state of the land before draining, the method and expence of the improvement, with a plan and the result of the operation, to be produced on or before the second Tuesday in December, 1804.

10. To the person who shall, by a series of the most satisfactory experiments, ascertain the comparative advantages and disadvantages, and best method of folding and coting sheep--the gold medal.

Accounts, verified by certificates, to be produced on or before the first Tuesday in April, 1804.

The same premium for 1805. The same premium for 1806.

11. To the person who shall, in a country where irrigation is not generally in practice, water the greatest number of acres, and in the completest manner--the silver medal.

To the person who shall, under similar circumstances, water the greatest number of acres, and in the completest manner--the silver medal.

Accounts of the old and new state of the land, and its value, and of the method, expence, and produce, verified by certificates, to be laid before the Board on or before the third Tuesday in January, 1804.

The same premiums for 1805.

12. To the person who shall make and report to the Board the most satisfactory experiments on the comparison of horses and oxen in the general business of a farm--the gold medal.

The account, verified by certificates, to be laid before the Board on or before the last Tuesday in April, 1804.

The same premium for 1805. The same premium for 1806.

13. To the person who shall lay before the Board the most satisfactory account, verified by chemical experiments, or other sufficient authorities, of the nature of manures, and their effects on the principles of vegetation--the gold medal.

To be produced on or before the first Tuesday in December, 1804.

The same premium for 1804.

14. To the person who shall lay before the Board the most satisfactory account of the application and effect of manures, verified by practical experiments on not less than an acre for each sort of manure--the gold medal.

To be produced on or before the first Tuesday in December, 1803.

The same premium for 1804.

15. To the person who shall report to the Board the most satisfactory experiments to ascertain the advantages or disadvantages which have attended the use of salt as a manure, either simple, or mixed with other substances, and also for assisting in the food of animals--the gold medal.

It is required that the accounts of it as a manure shall contain a description of the soils on which the experiments are made; the other manures which may have previously been used on the land; the quantities of salt, mixed or unmixed, applied; and the effect carefully ascertained; the quantity given in, and in what manner, to any sort of live stock.

To be produced to the Board on or before the first Tuesday in December, 1804.

The same premium for 1805.

16. To the person who shall produce to the Board the plough, which shall, with the least force, turn a furrow of not less than six inches deep and nine broad, in the best and neatest manner—from five to fifty guineas, according to merit.

To be produced on or before the first Tuesday in February, 1804.

The plough which gains the premium to remain the property of the Board, the price of it being paid.

17. To the person who shall, in the most satisfactory manner, make the following experiment in laying down land to grafs, on a scale of not less than three acres to each division, and report the result to the Board—the gold medal.

The land to be divided into three parts—one sown with grafs seeds, among barley or oats in the spring, on land that was fallowed, or yielded turnips the preceding year; one sown with grafs seeds alone, in July or August, having been fallowed from the Michaelmas preceding; and the third sown with grafs seeds and wheat early in September, having been fallowed or cropped with tares or turnips; the soil to be of the same quality; the grafs seeds the same in each division; the grafs to be fed with sheep the first year.

Accounts, stating the comparative expences and success of the three methods, verified by certificates, to be produced to the Board on or before the first Tuesday in December, 1804. The same premium for 1805.

18. To the person who shall, by the most satisfactory comparative experiments, ascertain the proper quantity of seed wheat to be used per acre in common or broad-cast husbandry; not less than one acre to be applied to each quantity of seed—the gold medal.

Accounts, containing a particular description of the soil, and the preparation thereof, including the manuring (if any), also the time of sowing the various quantities of seed employed, with the respective products, verified by certificates, to be produced to the Board on or before the first Tuesday in December, 1803.

The same premium for 1804.

20. The same premium, and on the same conditions, to be given for ascertaining the proper quantity of seed oats.

21. To the person who shall send to the Board the best essay on the culture of wheat, which shall include the useful facts hitherto published, with such additions as the writer may be able to make, either from his own experiments or those of others within his knowledge, fifty guineas.

For the next best, thirty guineas.

For the next best, twenty guineas.

Accounts to be produced on or before the first Tuesday in February, 1805.

22. To the person who shall send to the Board the best essay on the culture of hemp, which shall include the useful facts hitherto published, with such additions as the writer may be able to make, either from his own experiments or those of others within his own knowledge, with the best means of extending the culture in the United Kingdom, without lessening the growth of wheat, thirty guineas.

Accounts to be produced on or before the first Tuesday in February, 1805.

23. To the person in his Majesty's colonies of Upper or Lower Canada, New Brunswick, and Halifax, who shall make the most satisfactory report to the Board of the present state of the cultivation of hemp in those provinces

in respect of soil, previous state of the land, manure, seed, culture, watering, dressing, produce, price, and the expence of labour, with the state of population as applicable to this branch of culture, as well as of the obstacles to the extension of it, the best means of removing them, and of promoting the cultivation—thirty guineas.

The report to be made on or before the first Tuesday in January, 1805.

24. To the person who shall, before the 25th of March, 1804, produce to the Board, or shall erect in London, in some place to which the Members of the Board can conveniently have access, the machine for weighing cattle alive, as high as three hundred stone, at 8lbs. and as low as five stone weight, that shall be the cheapest in proportion to its accuracy and utility—twenty guineas.

#### GENERAL CONDITIONS.

1. The Board reserves to itself the power of withholding any premium when the communication or communications, implement or implements, is or are not deemed sufficiently important to merit the reward.

2. The M. S. S. &c. sent in claim of premiums to remain the property of the Board.

3. All memoirs, &c. sent in claim of premiums, to be without the name of the author, or any intimation to whom they belong (except where otherwise directed), but with a mark or number, and accompanied by a sealed letter, into which is to be written the same mark or number, containing the name and address of the claimant, and the certificates; which sealed letter will not be opened unless the premium be adjudged to the M. S. S. &c. bearing that mark or number. Without the attention of the writer to this circumstance, the Board cannot vote any reward to such M. S. S. &c.

Persons sending memoirs or implements, &c. in claim of premiums, are requested to desire some person to inquire the determination of the Board within twelve months after the M. S. S. &c. are delivered.

In case of no application, the letter containing the name and address of claimant will be burned.

#### Newark Agricultural Society.

A Meeting of this Society was held on Tuesday, the 18th of October, when the Premiums relative to the Ploughing Match were adjudged as follows:  
To Ralph Bell, serving man to John Brettle, Esq, of Thurgarton, 3 3 0  
To John Porter, do. to Mr. W. Deverill, of Newton, . . . . . 2 2 0  
To Joseph Chantry, do. to Mr. Gilbert Maltby, of Hoveningham, 1 1 0

The after mentioned premiums were proposed for the ensuing year, to be offered to persons residing within the county of Nottingham, or in the district twenty-five miles round Newark.

FIRST CLASS. For the best short horned yearling bull, not more than eighteen months old when shewn; the owner to engage to keep him for public use one year at least, and a certificate as to age will be required . . . . . 10 10 0  
For the best long-woolled tup-hog, wool and carcase taken together . . . . . 5 5 0  
For the next best . . . . . 3 3 0  
For the best fine woolled tup-hog . . . . . 3 3 0  
For the next best, . . . . . 2 2 0  
For the four best ewe-hogs . . . . . 3 3 0  
For the four next best, . . . . . 2 2 0  
For the best boar . . . . . 2 2 0  
For the next best . . . . . 1 1 0

The different cattle, sheep, &c. to be the property of and bred by the respective claimants, and to be shewn at the next summer meeting, which will be held at the Rutland Arms, Newark, the first Monday in July, 1804.—The owner of each tup which will be shewn for a premium will be required to let them for the ensuing season to any respectable person who will engage

to give them the sum of ten guineas; and liberty is allowed for the fleeces to be taken off any time after the first of June, on consideration of its being produced at the meeting, with a certificate, signed by two respectable members, setting forth the weight of the fleece, as well as the day of clipping.

**SECOND CLASS.** To the person who shall plough in the best manner, with two horses abreast, half an acre of loomy ley land for wheat-feed, to the best ploughman . . . . . 3 3 0

To the second best . . . . . 2 2 0

To the third best . . . . . 1 1 0

To the best plough-boy under eighteen years of age . . . . . 1 11 6

To the second best . . . . . 1 1 0

To the third best . . . . . 0 10 6

The work to be completed within four hours and a half from the time of starting, or in such further time as the judge may deem proper to allow, according to the condition of the ground.

To the person who shall make the most material improvement in the greatest quantity of land, not less than ten acres, by effectually draining the same upon the principles of Mr. Eltington, and by applying the water produced therefrom to the greatest utility, between the 20th day of October, 1803, and the 10th day of October, 1804 . . . . . 10 10 0

The site and state of the land before draining, the method and essence of the improvement, with a plan and result of their operation, to be produced at the next October meeting, verified by two respectable neighbours.

The premiums in the second class will be determined on the day of the next October meeting.

GEO. H. BARROW, Secretary.

Southwell, Oct. 12, 1803.

#### *Pembrokeshire Agricultural Society.*

On Thursday, the 24th of November, a ploughing match took place in a long field near Narberth, in Pembrokeshire. The premiums were given by the Narberth Farmers' Club, and restricted to Welsh ploughmen, with two horses without a driver, who were, with any implements, to plough twelve feet, batt or ridge, not less than four inches deep, the straightness, flatness, and general goodness of the work, and the time, taken into consideration by the judges appointed to decide. Ten ploughs started.

The first or greater premium of 3l. 3s. was adjudged to Thomas Harris, ploughman to Charles Hasfall, Esq. of Eastwood, who used a Monmouthshire plough:

The second of 2l. 2s. to John David, ploughman to William Evans, Esq. of Narberth, who used a Shropshire plough.

And the third of 1l. 1s. to Evan Nichol, labourer to John Harding, Esq. of Clynderwen (the worthy President of the Club), who used a Suffolk plough.

At the same time an English ploughman of William Francis's, Esq. of Longridge, did, as a specimen, very superior work with Lord Somerville's plough.

Notice has been published by the Club, that at the next sheep-shearing season the following premiums will be given:

To the best shearer . . . . . 1 11 6

To the second ditto . . . . . 1 1 0

And to the third ditto . . . . . 0 10 6

#### *Herefordshire Agricultural Society.*

At the Anniversary Meeting of the Society's, held on Friday, October 21st, the Society's Michaelmas premiums were thus adjudged:

1. Best new variety of the apple, Mr. Bayliss, of Brierly.
2. Best fine woolled ewes, T. A. Knight, Esq.
3. Best three-years old heifer, T. A. Knight, Esq.
4. Best two-years old heifer, Mr. Jefferies, Lyon's-hall.

The proposal read at the former meeting, for an additional yearly meeting of the Society, to be held in the town of Leominster, was unanimously confirmed.

And it was also confirmed, that breeders of stock, not being inhabitants of this county, may exhibit for the Society's premium on becoming members.

It was further resolved, that two new varieties of the apple, produced by Mr. Knight and Dr. Symonds (but not exhibited for the premiums), were of very superior qualities, and well deserving the attention of planters.

The consideration of claims for the society's premiums for labourers bringing up families, without assistance from their parishes, and to servants remaining longest time in the same families, was unavoidably postponed to the next meeting, when no other certificates than those now delivered, will be required or received.

The Committee who awarded the premiums on cattle, desire to express their opinion to the public, that the heifers exhibited (but not entered for the premiums), by Messrs. Tompkins, Joseph Tulley, and E. Jones, Esq. as well as a heifer belonging to W. Downes, Esq. and a two-years old, the property of Andrew Knight, Esq. were such as would have done credit to the first breeders in England.

#### *Wiveliscombe Agricultural Society.*

The following were the premiums announced to be given at the meeting of the Society, on 18th of October.

	<i>£.</i>	<i>s.</i>	<i>d.</i>
To the best ploughman . . . . .	1	1	0
His ploughboy . . . . .	0	5	0
To the second best ploughman . . . . .	0	10	6
His ploughboy . . . . .	0	2	6
To the person who shall produce the best cow or heifer for breeding	2	2	0
To the person who shall produce the second best . . . . .	1	1	0
To the person who shall produce the best half score of two tooth store ewes for breeding . . . . .	2	2	0
To the person who shall produce the second best . . . . .	1	1	0

The ploughing to be with oxen, the property of members of this Society.

The cows and heifers, or sheep, to be the breed of members of this Society, and at the time of shewing, the property of members claiming for them. The ewes to be drawn from store flocks the day preceding the show, in the presence of two members, and the claimants to prove them to have been kept with the store flocks three months immediately before.

Accordingly, the meeting was held on the 18th of October, and the premiums were adjudged as follow:

To Mr. Pike, of Fitzhead, for the best bull.

Henry Daubeny, Esq. for the second best cow or heifer.

To William Davey, with the plough of Mr. William White, of Golden Farm, as the best ploughman.

To James Davis, with the plough of Mr. James Culverwell, of Oakhampton Farm, as the second best ploughman.

#### *Peterborough Agricultural Society.*

The following were the premiums offered by this Society to persons living within 20 miles of the city of Peterborough, to be disposed of at the Angel-Inn, Peterborough, on Wednesday the 2d of November.

	£.	s.	d.
For the best bull, not more than two-years old when shewn, and having been in possession of the owner for six months at least, previous to his being shewn	7	7	0
For the best boar, not more than 12 months old when shewn, and having been bred by the claimant	2	2	0
To the labourer in husbandry, who has brought up the most numerous family in that parochial assistance	3	3	0
To the labourer in husbandry, who has worked for one master or on one farm the longest time, he working for that master, or on that farm, at the time he makes his claim	2	2	0
To the male servant, who has lived the longest time with any one master or mistress in husbandry	2	2	0
To the female servant, who has lived the longest time with any one master or mistress in husbandry	2	2	0

At the meeting held accordingly, on the 2d of November, the premium of Two Guineas was adjudged to William Barsby, for having worked as a labourer in husbandry, on the farm belonging to Mrs. Jane Ireland, of Market Deeping, 32 years. A compensation of Two Guineas was allowed to Mr. Griffin, of Eye, for having produced a bull for the premium of Seven Guineas, against which there appeared no competitor.

#### *Newcastle and Pottery Agricultural Society.*

At a general meeting of this Society, held on Friday the 30th of September, 1803, the undermentioned premiums, offered at a meeting held on the 16th of February, 1802, were adjudged as follows:

The premium, No. 10, of a silver cup or five guineas, for making the greatest quantity of cheese of the best quality, in proportion to the number of cows, to Mr. Robert Bill, of Black-Lion Farm.

The premium, No. 16, of a silver cup or seven guineas, for laying down for pasture, the greatest quantity of land in the best manner, with white clover or grass seed, to James Caldwell, of Linley Wood, Esq.

The premium, No. 17, of a silver cup or five guineas, for laying down the next greatest quantity of land in like manner, to William Sneyd, of Bradwell, Esq.

The undermentioned premiums offered at a meeting held on the 3d of February, 1803, were adjudged as follow:

The premium, No. 18, of five guineas, to labourers in husbandry, to John Brereton, of the parish of Wybunbury, for having brought up eight children without parochial assistance.

The premium, No. 21, of two guineas, for women servants in farming business, to Mary Baddeley, servant to Mr. Thomas Sims, of the parish of Audley, for having continued 52 years in the same service.

It was resolved, That this Society will consider themselves obliged to any persons who shall produce at their general meetings, for the inspection of the Society, any description of farming stock for the improvement of the breeds within this district; and the committee of this Society will provide accommodations for the security of the same during the show, upon one month's previous notice being given to the Secretaries of the intention to produce them at the meetings.

Several sweepstakes were entered into for the show of stock at the next meeting, which will remain open for two months.

JAMES CALDWELL, Chairman.

#### *Leicester Agricultural Society.*

At the Annual Meeting held at the three Crowns Inn, in Leicester, on Wednesday the 26th of October, 1803.

## PRESENT.

Lord Viscount Wentworth, Vice President, in the Chair.  
 Clement Winstanley, Esq. Vice-President.  
 Sir Edmund Cradock Hartopp, Baronet } Members for the County.  
 George Legh Heek, Esq. }  
 George Crump, Esq. Joseph Grundy, Esq. Mr. Miles, Mr. Nicholls,  
 Walter Rudings, Esq. C. Loraine Smith, Esq. Mr. Samuel Stone, Mr. T. P.  
 Stone, N. Stubbins, Esq. Mr. Watkinson, &c.

The accounts of the preceding year were examined and approved. There appeared a balance of 152l. in favor of the society.

The premiums adjudged by the committee to labourers in husbandry, &c. were confirmed, and ordered to be paid by the secretary, viz.

To labourers in husbandry, for having reared families without assistance from the parish.

	l.	s.	d.
Peter Baker, of Stanton, nine children, - - -	4	4	0
Thomas Woatton, Castle Donington, six children - - -	4	4	0

To labourers in husbandry, for long and faithful services.

Thomas Dennis, 43 years, with Mr. John Humberstone and his widow at Asforby - - -	4	4	0
Thomas Broughton, 40 years on the same farm, at Frolesworth - - -	4	4	0
Joseph Storer, 39 years with Joseph Boulton, Esq. and Mr. Rice, on the same farm at Coalorton - - -	4	4	0
Thomas Wildman, 37 years with Mr. Robert Johnson, and his father, at Wykeham - - -	3	3	0

A premium of five guineas was adjudged to Mr. Thomas Allsop, of Wanlip, for the best two year old fat wether sheep; and three guineas to Mr. Thomas Lewin of Thruffington, for the second best sheep in the same class.

The premium for the best estimate of the comparative advantage between using oxen and horses in husbandry, was ordered to be augmented to twenty guineas, for the ensuing year. Should the committee decide that satisfactory proof is adduced of the superior expediency of employing oxen, a gratuity of five guineas is ordered to be issued to the driver of the team, on whose work the advantage has been ascertained.

The premium for the trial between the effects of fresh dung and rotten dung is continued.

The premium for sheep and cattle, were ordered to be continued, viz.

To the person who shall on the day of the annual meeting, for 1804, produce a two-year old fat wether sheep, the best for shape and quality of flesh, with an account of the mode and expence of fattening; to have been fed with grass, hay or roots, and not to have had corn, five guineas.

For the second best ditto, three guineas.

For the third best ditto, two guineas.

For the best fat whether shear hog, five guineas.

Second best ditto, three guineas.

Third best ditto, two guineas.

No person to receive more than one of the above premiums in the same class.

The sheep to be shewn by the persons who have bred and fed them. They are to be killed and weighed on the same day. The difference between the live and dead weight to be ascertained, the amount of the several kinds of offal to be specified, which circumstances are to form the ground for determining the preference between the sheep.

For the best three year old heifer, five guineas.

For the best four year old heifer, five guineas.

For the best five year old heifer, five guineas.

Satisfactory account is to be given of the breed, and of the manner of feeding of the beasts. They are to be exhibited at the annual meeting for 1804, and afterwards to be killed before the time of meeting of the next

monthly committee, so that the committee, on grounds similar to those prescribed in the case of the sheep, may adjudge the premiums.

A premium of five guineas, is offered for the best pen of three ewes (to be shewn at the annual meeting for 1804,) which shall have produced and reared lambs for at least two years consecutively, before the time of shewing. The ewes are to be afterwards slaughtered, that the comparison between the live and dead weight, may be taken into the judgment of the committee.

The premiums are continued for labourers in husbandry bringing up children without assistance from the parish. For servants in husbandry for long and faithful services; and labourers in husbandry for the same.

Applications to be delivered to the secretary before the first day of September 1804.

The applications must accurately describe the ground of claim, and be accompanied by a certificate, signed by the resident minister of the parish, in which the claimant lives, or by the master or mistress under whom he has lived, and two other creditable householders, having a positive knowledge of the facts certified. Not less than six children, or fifteen years service will be deemed a sufficient pretension.

The claimants are desired not to attend, as the successful candidates will have notice in the Leicester paper.

No person can have a premium for servitude who has gained one the preceding year for children.

The committee formerly appointed to look out for an experimental farm, is authorized and requested to renew its advertence to that object; and to treat for a lease of any lands which may appear to the committee properly adapted to the purpose.

By order of the society,

R. Cooke, Secretary.

Particulars of the two sheep, both of which were the produce of rams bred by Mr. Stone, of Quorn.

Mr. Allsop's Sheep.	lbs.	Mr. Lewin's Sheep.	lbs.
Live Weight	215 $\frac{1}{2}$	Live Weight	207 $\frac{1}{2}$
Skin	14 $\frac{3}{4}$	Pelt	19
Blood	8	Blood	7 $\frac{3}{4}$
Guts	9 $\frac{1}{2}$	Guts	15 $\frac{1}{4}$
Head and Pluck	10 $\frac{3}{4}$	Head and Pluck	10 $\frac{1}{4}$
Tallow	24	Tallow	14 $\frac{3}{4}$
	67 $\frac{1}{4}$		66 $\frac{3}{4}$
Carcass	148	Carcass	138
	215 $\frac{1}{4}$		204 $\frac{3}{4}$

#### Manchester Agricultural Society.

A general meeting of this Society was held at the Unicorn-Inn, Altringham, on Monday, October 17th, when the following premiums were adjudged:

To Thomas Thornley, of Barton, for raising ten swarms of bees from three old hives, a silver cup, value five guineas.

To John Ashworth, of Turton, for discovering the cheapest and most productive sort of compost, a silver cup, value seven guineas.

To Adam Howarth, of Lostock, for the best short horned bull, a silver cup, value ten guineas.

To Trafford Trafford, Esq. of Kinderton Lodge, for a short horned heifer, a silver cup, value five guineas.

To John Becket, of Sutton, for a long-horned bull, a silver cup, value five guineas.

To the Rt. Honourable the Earl of Stamford and Warrington, Dunham Massey, for the best long-horned heifer, a silver cup, value ten guineas.

To Thomas Pinnington, of Marton, for the best ram, a silver cup, value seven guineas.

To Jasper Pulfrey, of High Leigh, for the best boar, a silver cup, value five guineas.

John Cotes, Esq. of Leck, Staffordshire, was elected honorary member of the Society.

Turton, October 18, 1803.

JOHN ASHWORTH, Secretary.

The increasing ardour and spirit of the gentlemen farmers of Ireland, have been exemplified in a very superior degree at the cattle exhibition lately held at Dublin, by the unexampled demand for a new species of wheat, which may well be considered a kind of phenomenon in the vegetable world. From its novelty in this country, it has not yet acquired any rank in any branch of botanical classification, at least, generally known or alluded to; but its properties, if the future effects shall invariably answer the first experiment in this country, will amply compensate all the expences of its culture, as well as the original prime cost of the seed, viz. ten guineas per stone. The original seed imported by a servant of the late Thomas Whalley, Esq. on that gentleman's Jerusalem expedition, was at first taken notice of by a Mr. Doran, of Francis-street, an eminent experimental farmer and distiller. That gentleman's account of the various branches of his experiment, as communicated to the numerous crowd of admiring spectators of the sample he produced at the exhibition at the Duke of Leinster's, in Leinster-street, stands critically as follows:—He sowed about two stone of what he calls Jerusalem wheat in a space of an haggard, at Clostlla, in the county of Dublin, about August last, after a previous crop of vetches; this seed he had dibbled by two men and four children, the whole expence of labour amounting to no more than seven shillings British; in the last reaping season it exhibited stalks of seven feet in length, bent considerably at the top by the weight, a bunch of ears on an average from 42 to 45 in number to each stalk, and each ear containing generally from 150 to 190 large round grains of wheat almost transparent through a film resembling a skin or husk, its colour only approached the lands wheat, so well known in this country. The stalks formed into reeds, filled with a white pulp from their strength towards the root, were obliged to be cut about two feet from the ground. The straw, or rather reed, Mr. Doran had cut with a machine, and served to horses as a substitute for oats, on which they fed with avidity, and seemed to thrive as well as with their usual food. The general produce of the seed was ten barrels wanting six pounds; on grinding, the proportion of bran to flour was three pounds to a barrel.

A trial was lately made in presence of a large number of gentlemen and farmers on Colmer farm, near Bridport, Dorset, with a *\_\_\_\_\_*, the invention of Mr. William James, occupier of the above estate. By this machine, which is on the most simple principle, any fallow land may be completely sown and converted into four furrow ridges, with two horses, after the rate of one acre in 50 minutes. The invention does great credit to Mr. James, and bids fair to be of very great benefit to agriculture.

As a proof how much the price of timber has advanced, large oak timber, which in 1798, sold in Suffex for £5 per load, is now worth £9. Lurch has been much planted of late by the gentlemen of that county, where it is found to exceed the Scotch fir in growth; the deal it produces is considerably superior. Sir Cecil Wray, we believe, has been the most successful planter of the lurch in England upon the wastes of his domain in Lincolnshire; a tract of which, that was rented at £40 per annum, now yields an annual produce of £500 from the regular fall of lurch trees planted by the present baronet.

Among the numerous instances that daily occur of agricultural wonders, is an experiment made near Clonmell, in Ireland, during the last summer, not unworthy of notice; John Malcolmson, Esq. during the first week in June, began to cut a field of barley sown in March, which was then pipy and too luxuriant to stand the ripening; on the produce of half an acre he foiled 14 horses and six cows during three weeks. In the month of September he cut a full grown crop of ripe corn off the same stems very little inferior, if not equal in produce to the remainder of the field.

In the pine-apple garden, St. Martin's at Oak, Norwich, a crop of fruit was gathered from a pear-tree at the usual time in June, when fresh blossoms were observed, and from these a second crop was gathered in the beginning of November in full perfection. A similar circumstance occurred with the same tree in 1788.

A singular instance of the mildness of the season, during the last two months, occurred at King's gange, about 14 miles south-west of Dumfries, in Scotland. Several apple-trees in the orchard there, had a quantity of blossoms upon them a short time ago, and one tree had apples completely formed, being the second crop this season. The blossom buds of fruit trees are produced in the month of August, and remain dormant all winter. It is from this circumstance that botanists have called them the *Hibernacula*, or winter quarters of the fruit. The above process of nature however, does not appear to be invariable, and a mild autumn may perhaps open the buds half a year before the usual time, as seems to have been the case in the present instance.

There is a vine in the grapery at Hampton-Court, that fills an entire house. It contains 2000 bunches, estimated on an average at one pound per bunch. About forty have been pulled, but the greater part will be reserved till her Majesty's birth-day.

At Epping fair there was a large shew of beasts of the Scotch, Irish, and Welch kinds, which did not go off freely even at reduced prices; many droves went off unsold.

At Berkley great fair there was a very considerable shew of cattle, sheep, and pigs: high prices were obtained for fat cattle, but there was no demand for lean stock.

At Ballinasloe fair, in Ireland, there was a great reduction in the price of sheep from that of the preceding year, not less than 10s. a head on the prime stock: more than 30,000 were driven off unsold. Beasts, however, were dearer, particularly of the choicest breed, and all sold freely. The harvest through most parts of Ireland has proved similar to that of England; the wheat crops have suffered through blight upon the tenderest and best soils; their potatoe crops has unfortunately failed in the south, from whence the general supply is always expected.

At Wingham and Snelling fairs all kinds of lean cattle went off at declining prices; fat cattle fit for immediate use, sold pretty high.

St. Simon and St. Jude fair, held at Stamford, was but indifferently attended. The shew of sheep was extremely large, but of neat cattle and horses there were but few. Beasts sold better than was expected, and sheep and horses were dearer than at Swinstead.

At Swaffham fair there was a great supply of sheep and lambs; the latter fetched from 10l. to 18l. per score; a great many were left unsold for which scarcely a bidding could be obtained. Other stock sold low in proportion.

Newark fair exhibited a large shew of beasts and horses. Fat beasts were readily sold at good prices, but stores went off very heavily; good horses fetched high prices.

At Winchester fair a vast deal of cheese was pitched for sale; the prices, however, kept uncommonly high, new cheese selling from 3l. to 3l. 8s.; and prime old cheese fetched the enormous sum of 4l. 16s. per cwt.

At Preston winter fair there was a considerable shew of both lean and fat cattle; but from the owners endeavouring to keep up the prices but few were

fold, and the greater part driven back to their stalls. Butchers' meat, on the last market-days, has declined one penny per pound in price.

The shew of black cattle at Hallow fair, Edinburgh, was great beyond precedent; but of fat cattle the proportion was less than usual. Sales were very dull, and prices considerably down, especially for lean stock. Horses were very plentiful, and upon the whole cheaper than for some time past. There was an astonishing number of sheep, as indeed there has been in the market for three months past; prices considerably down. Many of these, and the black cattle, were driven off unfold. Those who intended to purchase declined doing so, in expectation of a still greater fall in price.

At Hawick-fair, in Scotland, there was a pretty good shew of cattle. The assortment of two-year olds, however, was rather indifferent, and the prices in general lower than last season.

At the fair of Maybole there was a great deal of good cloth, but few purchasers. The prices were lower than expected, and a great deal remains unfold.

## *Manufactures and Useful Arts.*

### *An Account of Mr. Symington's New Steam Boat.*

Several attempts have been made to apply the force of steam to the purpose of propelling boats in canals, and there seems to be no reason to think the undertaking by any means liable to insuperable difficulties. Mr. Symington appears already to have had considerable success, and the method that he has employed for making a connection between the piston and the water-wheel, is attended with many advantages.

By placing the cylinder nearly in a horizontal position, he avoids the introduction of a beam, which has always been a troublesome and expensive part of the common steam engines: the piston is supported in its position by friction wheels, and communicates by means of a joint with a crank, connected with a wheel, which gives the water-wheel, by means of its teeth, a motion somewhat slower than its own; the water-wheel serving also as a fly. The steam engine differs but little with respect to the condensation of the steam, from those of Boulton and Watt now in general use: there is an apparatus for opening and shutting the cocks at pleasure, in order to revert the motion of the boat whenever it may be necessary. The water-wheel is situated in a cavity near the stern, and in the middle of the breadth of the boat, so that it becomes necessary to have two rudders, one on each side, connected together by rods, which are moved by a winch near the head of the boat, so that the person who attends the engine, may also steer. It has been found most advantageous to have a very small number of float boards in the water-wheel.

Another material part of the invention consists in the arrangement of stampers, at the head of the boat, for the purpose of breaking the ice on canals, an operation which is often attended with great labour and expence. These stampers are raised in succession by means of levers, of which the ends are depressed by the pins of wheels, turned by an axis communicating with the water-wheel.

Mr. Symington calculates that a boat capable of doing the work of twelve horses, may be built for eight or nine hundred pounds. An engine of the kind has been actually constructed at the expence of the proprietors of the Forth and Clyde Navigation, and under the patronage of the Governor, Lord Dundas: it was tried in December (1801,) and it drew three vessels, of from 60 to 70 tons burden, at the usual rate of two miles and a half an hour. Mr. Symington is at present (July 1802,) employed in attempting still further improvements, and when he has completed his invention, it may, perhaps, ultimately become productive of very extensive utility."

*October 18, 1803.*

W.

## LONDON PRICES OF GRAIN for November, 1803.

MARK-LANE, Monday, October 31.

Price of Grain, on board Ship, as under.

OUR supply of Wheat to-day was no considerable, and prices a trifle higher than last week, particularly for samples of fine quality. Barley is likewise a short supply, and dearer, say 1s. per quarter. Malt also obtains a better price; as do White Peas. Beans are without alteration. But few Oats have come to market, and little doing at the high prices demanded. Flour as per last—fine American, 32s. to 34s. per barrel, of 196lb.

Wheat	46s to 59s	Barley	22s to 27s od	White Peas	44s to 50s od
Fine	60s to 61s od	Malt	52s to 58s od	Grey Peas	34s to 37s od
Rye	32s to 34s od	Oats	23s to 30s	Sm. Beans,	33s to 37s od
		Polands ditto	31s to 32s od	Ticks,	32s to 35s od

Monday, November 7.

OUR arrivals of Wheat to-day have been small, and hence the sales made were at an advance of 1s. per quarter on the average. The supply of Barley was likewise short; and good Malting samples sold 1s. 6d. per quarter higher than last week. Malt sells at rather better prices. Beans are dearer, there being but few at Market; but in Peas and Oats we have little variation in price. Of the last mentioned, there are some Foreign arrivals; yet, on the whole, but a middling supply.

Wheat	44s to 59s	Malt	52s to 58s od	White Peas	44s to 51s od
Fine	61s to 62s od	Oats	24s to 31s	Grey Peas	35s to 38s od
Rye	32s to 34s	Polands	32s to 33s od	Sm. Beans,	35s to 39s od
Barley	23s to 28s 6d			Ticks	33s to 36s 6d

Monday, November 14.

OUR supply of Wheat to-day was but moderate as to quantity; in quality and price, very fine old samples obtained rather more than our highest quotation, but the middling and ordinary sorts were heavy sale. Barley, owing to a very short supply, is full 3s per quarter higher than this day se'nnight. Malt is likewise dearer. Peas, of both sorts, are also dearer. Beans the same; say from 2s. to 3s. per quarter each. We have but few Oats, and these may be stated at 6d. per quarter advance. English Flour as last. Fine American ditto, 25s. to 36s. per barrel, of 1½ cwt.

Wheat	45s to 61s	Malt	54s to 61s od	Grey Peas	38s to 41s od
Fine	62s to 63s od	Oats	26s to 31s	Small Beans	38s to 43s od
Rye	32s to 34s od	Polands ditto	32s to 33s od	Ticks	35s to 40s od
Barley	27s to 31s 6d	White Peas	48s to 54s od		

Monday, November 21.

We have had, to-day, a good supply of wheat, but not generally of fine quality. Prime samples keep their price; but the inferior sorts are, on the average, 2s. per quarter lower. Barley, of which there was likewise a great plenty, is 2s. per quarter cheaper; and Malt has fallen in proportion. Fine Small Beans are steady, at former prices.—In Peas, &c. little variation. We have many arrivals of Oats, with some foreigners, and that article is about 1s. per quarter cheaper. American Flour, 35s. to 37s. one hundred and three quarter weight per barrel.—English, as has week.

Wheat	44s to 60s	Malt	50s to 58s od	Grey Peas	38s to 41s od
Fine	61s to 62s od	Oats	24s to 29s	Small Beans	38s to 43s od
Rye	32s to 34s	Polands ditto	30s to 31s 6d	Ticks	36s to 40s od
Barley	24s to 29s od	White Peas	50s to 55s od		

## BANKRUPTCIES AND DIVIDENDS,

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

## BANKRUPTCIES.

The Solicitors Names are between Parentheses.

ALFORD, F. High street, Southwark, woollen draper. (Watson, Girdler's Hall)	Bramhall, R. and P. Portobello, Sheffield, cutlers and factors. (Surviving partners of J. Bramhall, firm J. Bramhall and sons.) (Biggs, Hatton Garden)
Billing, T. and J. Holborn, linen drapers. (Seymour, Margaret street, Cavendish square)	BAX, H. Farnham, taylor. (Michael, Finch lane)
Brown, M. St. John's square, printer. (Devon and Tooke, Gray's Inn)	Bromfield, C. Liverpool, porter brewer. (Clements, Liverpool)
Ball, J. Kingsteigton, Devon, dealer. (Barr, Chudleigh)	Burnswes, A. F. Middle row, Holborn, haberdasher. (Turner, Margaret street, Cavendish square)
Blake, D. and W. Smith, Beech street, shoemakers. (Robinson, Kingland road)	Bunce, J. Abingdon, ironmonger. (Pratt, Abingdon)
Blairlock, C. and J. H. Lutterloh, Mark lane, merchants. (Bolton, Savage, and spike, Temple)	Benyon, James, Greville street, Hatton Garden. (Junger, Mayor's court office)

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- Bovi, M. Piccadilly, printfeller. (Rhodes, Cook, and Handley, St. James's walk, Clerkenwell)  
 Bartlett, J. London wall, wool merchant. (Coben, Clifford's Inn)  
 Bullen, Wm. Wakefield, merchant. (Batty, Chancery lane)  
 Bunney, W. Old Gravel lane, St. George's in the East, courier. (Searle, Temple)  
 Bedford, J. East Smithfield, Bricklayer. (Heard, Hooper's square)  
 Cocks, J. Holborn, Jeweller. (Harman, Wine office court, Fleet street)  
 Chance, Thomas Tottenham, coach and harness maker. (Cruickshank, Basinghall street)  
 Cruickshank, T. Lime street, merchant. (Willis, Warnford court)  
 Currie, J. Cross street, Finsbury square, merchant. (Rigby, near City Chambers, Bishopgate street)  
 Curtis, J. and H. P. Griffin, Ludgate hill, oil and colour merchants. (Taylor, Gray's Inn)  
 Crofkey, G. Bunyan, and R. Wellall (late partner with J. Fell) Basinghall street, Blackwell hall, factors. (Thomas, Bearbinder lane)  
 Cook, C. Great New street, St. Bride's, tallow chandler. (Agland, Gray's Inn terrace)  
 Church, Ann, New Bond street, milliner. (Minhall and Veal, Millbank street)  
 Cooke, H. Manchester, shopkeeper. (Foulkes, Bury place, Bloomsbury square)  
 Clark, F. Barnett, wine merchant (Noy, Mincing lane)  
 Dixon, T. Godalming, timber merchant. (Highmore, Bucklerbury)  
 Darby, A. Maidenhead, brandy merchant. (Clarke, Sadlers' hall)  
 Dean, J. New castle, woollen draper. (Wilson and Flexney, Chancery lane)  
 Dobson, H. Godmanchester, and E. Dobson, Brampton, millers. (Firm Dobson and Son.) (Cooper and Lowe, Southampton buildings, Chancery lane)  
 Deffett, T. Ashcott, victualler. (Shepherd and Adlington, Gray's Inn)  
 Duffy, T. Manchester, manufacturer. (Ellis, Curfitor street)  
 Evans, J. Whitechapel road, chinaman and taylor. (Hill, Walbrook)  
 Edwards, R. G. Poultry, hofier. (Field, Friday street)  
 Edwards, R. G. and J. Jackson, No. 20, St. Mary Axe, and No. 375, Strand, merchants. (Harrison, Northumberland street, Strand)  
 Ewbank, J. Bucklerbury, warehousen. (Swain and Stevens, Old Jewry)  
 Faulkner, S. Manchester, cotton manufacturer. (Ellis, Curfitor street)  
 Fowler, J. Bewdley, printer and stationer. (Neeld and Fludgate, Norfolk street, Strand)  
 Forbes, F. Blackman street, Southwark, chymist and druggist. (Farrer, Exchequer Office, Somerset place, Southampton buildings)  
 Gosson, P. Liverpool, painter. (Blackstock, Temple Gainsford, E. Cowden, Kent, corn dealer. (Blandford and Sweet, Temple)  
 German, J. Aldermanbury, hofier. (Field, Friday street)  
 Goody, T. Sheffield, grocer. (Rivington, Fenchurch buildings)  
 Gally, D. High Holborn, printfeller. (Holship, Bouverie street)  
 Graves, J. W. Holborn, hatter and hofier. (Syddall, Addie street)  
 Graham, R. and W. Making place, Yorkshire, and J. Graham, Aldermanbury, London, cotton manufacturers and merchants. (Batty, Chancery lane)  
 Gots, G. Cawston, merchant and maltster. (Withers Holt)  
 Goward, G. Chandos street, cheese factor. (Barrow, Forbes, and Hancock, Basinghall street)  
 Giller, H. Cold, Athon Mill, woollen yarn manufacturer. (Crawford, Craven buildings, City road)  
 Gage, A. and J. Lee, Bishopgate street, wine merchants. (Swain and Stevens, Old Jewry)  
 Gordon, T. Liverpool, merchant, in trade with Peter Gordon, Virginia, firm P. and T. Gordon. (Windle, Bartlett's buildings)  
 Harcourt, P. jun. Great Stanmore, butcher. (Turner, Gray's Inn)  
 Humphys, G. Horsley, clothier. (Gardiner and Skinner, Minchampton)  
 Hill, F. Middleton, Suffolk, merchant. (Rabett, Charlton)  
 Jackson, H. Mincing lane, merchant. (Shaw, Tudor street)  
 Jackson, J. Strand, perfumer and dealer in medicines. (Booth and Lane, Fenchurch buildings)  
 Jamieson, R. and S. M'Quoid, Sherbone lane, merchants and brokers. (Barrow, Forbes and Hancock, Basinghall street)  
 Jonnison, J. and J. Cullingworth, Leeds, joiaers. (Allen and Exley, Furnival's Inn)  
 Jeffries, H. Lower Thames street, ironmonger. (Willington and Small, Temple)  
 Jones, T. Wrexham, Flax dresser. (Manley and Lowes, Temple)  
 Kenyon, J. Wakefield, linen draper. (Betham, Bouverie street)  
 Killick, R. Blackfriar's road, chaise maker. (Benton, Swan yard, Blackman street)  
 Keen, J. Cross lane, St. Mary at Hill, factor. (Stow, Old South Sea House)  
 Losh, G. and W. and J. Robinson, Newcastle, ironmonger. (Speeding, Temple)  
 Lacey, J. Whirby, shipbuilder. (Roffer, Kirby street)  
 Leigh, R. Brampton, cooper and timber merchant. (Walker, Exchequer Office of Pleas, Lincoln's Inn)  
 Lord, W. Shipton on Stour, druggist and grocer. (Kinderley, Long and Ince, Symond's Inn)  
 Lewis, T. Great Tower Hill, merchant. (Fager, Lacey, Stedman and Wall, Bread street hill)  
 Lovley, T. J. Piccadilly, haberdasher. (Shepherd and Adlington, Gray's Inn square)  
 Mackenzie, J. Pope's Head alley, and Bernard street, Russell square, wine merchant. (Pringle and Wabrough, Greville street)  
 More, R. Haffeworth, linen draper. (Swain and Stevens, Old Jewry)  
 M'Miken, A. St. Luke, Chelsea, victualler. (Holloway, Chancery lane)  
 Morison, A. Walbrook, merchant. (Swain and Stevens, Old Jewry)  
 Mefnard D. Shad Thames, dealer in corn. (Harman, Wine Office court)  
 Mofs, John, Salisbury, ironmonger. (Clarke and Edwards, Chancery Lane)  
 Morris, J. hn, Sharples, Whitster, [Boardman, Bolton]  
 M'Kinlay, D. and A. Mindes Belesario, Sice lane, merchants. (Dann, Threadneedle street)  
 M'Alpine, W. in partnership with P. Debrauwer, firm Debrauwer and Co, Aldersgate street, merchant and broker. (Adams, Old Jewry)  
 Nuttel, J. Kingston Hall, batter. (Sykes and Knowles, Bofwell court)  
 Nixon, J. Princes street, Hanover square, ironmonger. (Taylor, Mortimer street)  
 Owens, J. Cardiff, tanner. Brown, Cardiff  
 Orme, E. Southwark, cheese monger. (Gregson, Angel court, Throgmorton street)  
 Okell, T. Great Queen street, Lincoln's Inn fields, linen draper. (Burdon, St. Andrew's court, Holborn)  
 Pearce, M. Little Elbow lane, cheese monger. (Fitzgerald, Lemon street)  
 Reynolds, R. Whitechapel, wine merchant. (Williams and Sherwood, Bank buildings)  
 Row, R. Exeter, linen draper. (Luxmore, Red Lion square)  
 Rushworth, C. High Holborn, coach maker. (Langley, Plumtree street)  
 Ridgway, J. and J. Kearsley, Bolton, cotton manufacturers. (Meddowcraft, Gray's Inn)  
 Smith, T. Stratford under the Castle, Felt maker. (Millet and Son, Gray's Inn)  
 Stephens, J. Liverpool, merchant. (Wiatt and Forrester, Liverpool)  
 Stubbs, R. Wykeham, Yorkshire, [Roffer, Kirby street]  
 Scott, J. Dowgate Wharf, London, and G. Losh, Newcastle, Factors, firm J. Scott and Co. (Gregson, Angel court, Throgmorton street)  
 Stewart, D. Old Bailey, baker. (Macdougall and Hunter, Lincoln's Inn)  
 Solomon, M. Little Alie street, Goodman's fields, merchant. (Isaacs, George street, Minorities)  
 Sherman, J. R. Ingram court, ship owner and broker. (Atcheson, Ely place)  
 Stoney, W. and J. Smith, York, grocers. (Batty, Chancery lane)  
 Stevenson, R. Fetter lane, cutler (Kearsey, Temple)  
 Sutton, H. New Sarum, clothier. (Millet and son, Gray's Inn lane)  
 Smith, L. Portsmouth, draper. (Adams, Old Jewry)  
 Tappy, M. late of Silver street, now of Long Acre, bookbinder and bookfeller. (Stokes, Upper James street, Golden square)  
 Thompson, F. Bow lane, warehousen. (Willis, Warnford court)  
 Townsend, B. and R. Hatley, Old Change, leather sellers, &c. (Swain and Stevens, Old Jewry)  
 Taylor, W. jun. formerly of North America, now a prisoner in the King's Bench prison. (Adams, Old Jewry)  
 Tabart, B. Bond street, bookfeller. (Eaton, Birchin lane)  
 Turton, J. Wych street, trufs maker, &c. (Betham, Bouverie street)  
 Upton, J. Red lion street, Clerkenwell, pocket book maker. (Eaton, Birchin lane)  
 Vinn, T. Bull lane, merchant. (Egerton, Gray's Inn)  
 Vaughan, W. Pall Mall, Taylor, and A. Gerrard, Gloucester street, Mary le bone, merchants. (Brown, Little Friday street)  
 Walkey, T. Liverpool, merchant. (Manley and Lowes, Temple)  
 Wicks, W. Middle Row Holborn, haberdasher. (Nind, Great Prefcot street)  
 Weaver, W. B.W. lane, warehousen. (Swain and Stevens, Old Jewry)  
 Well, T. Cannon street, butcher. (Williams and serwood, Bank street)  
 Wilton. Birmingham, grocer. (Richardson, Monument yard)  
 Wrygate, W. Fenchurch street, wine and brandy merchant. (Farry, I have's Inn)  
 Williams, E. Birmingham, factor. (Bolton, Savage and Spike, Temple)  
 Ward, R. R. Collingham, merchant. (Allen and Exley, Furnival's Inn)  
 Webster, J. T. High street, Borough, hofier. (Dawes, Angel court, Throgmorton street)  
 Wharam, J. Baywater place, manufacturer of patent springs for stirrups. (Nelson, Maddox street)  
 Weightman, T. Newgate street, mercer. (Bodfield, Lawrence lane)  
 White, T. Southwark, haberdasher. (Field, Friday street)

## DIVIDENDS ANNOUNCED

Anderfon, R. Guildford street, and Old Pay Office, merchant, Nov. 26  
 Adamfon, J. Cateaton street, factor, Dec. 9

Abbott, J. and M. Palmer, Monkwearmouthshire, fall-makers, Dec. 7  
 Boyn, D. Great Winchester street, merchant, Nov. 12  
 Beedler, J. Market Deeping, brazier, &c. Nov. 19  
 Beaumont, W. Shrewsbury, draper, Nov. 26  
 Brennan, T. Hayes court, Soho square, linen draper, Nov. 26  
 Binns, T. and J. Brown, Tottenham street, engine manufacturers, Nov. 26  
 Blakeway, J. Shrewsbury, woolen draper, Dec. 5  
 Berriman, J. Brewer street, Fulmo, Bristol, Dec. 14  
 Brachin, R. partner with A. Arbuthnot, Philpot lane, London, and Birmingham, merchant, firm Alex. Arbuthnot and Co. and R. Brachin and Co. Dec. 24  
 Carr, G. Jun. Friday street, Shaftordshire warehouseman, Nov. 26  
 Corbett, R. and S. A. flock, Liverpool, merchant, Nov. 30  
 Carter, T. Jun. Waltham Cross, corn chandler, Nov. 26  
 Cooper, W. Dalby, iron founder, Dec. 3  
 Curtis, J. Oxford, wine merchant, Dec. 6  
 Campbell, M. and W. Teatdale, Manchester, grocers, Nov. 30  
 Coulchad, J. Shawe, Cumberland, dealer, Dec. 9  
 Cox, J. Leighton Buzzard, corn and flour merchant, Dec. 17  
 Davies, P. Blackfriar's road, hatter, Dec. 6  
 Evans, R. City road, umbrella maker, Nov. 22  
 Emmett, G. J. Manchester, grocer, Dec. 2  
 Freeman, W. St. Martin's, Stamford Baron, Nov. 21  
 Furtado, R. South street, Finsbury square, Jan. 17, 1804  
 Goring, J. F. and Elizabeth Johnstone, St. Mary Axe, merchants, Nov. 29  
 Garrod, S. Saxmundham, taylor and draper, Dec. 6  
 Holmes, W. Kidley, drysalter, Nov. 21  
 Hambly, W. Falmouth, and Great Bell Alley, London, merchant, Nov. 26  
 Hayte, M. Newington, haberdasher, Nov. 26  
 Hodges, R. Shrewsbury, druggist, &c. Dec. 5  
 Holmes, S. Thomas street, Southwark, merchant, &c. Dec. 10  
 Horlock, I. Webb, W. Anderson, and C. Jones, Bath, bankers, Dec. 1  
 Holland, T. New South End, builder, &c. Jan. 14, 1804, final  
 Halfhide, J. sen and Jun. and E. H. F. H. Merton, calico printers, separate estate, of E. W. H. Dec. 6  
 Heuchan, J. Liverpool, dealer in muslin, &c. Dec. 12  
 Jones, T. Old Passage route, Aust, vintner, Dec. 9  
 Jackson, T. Shalford, lbookkeeper, Dec. 6, final  
 Jones, D. Commerce row, baker, Dec. 6  
 Jeffrey, G. New Bond street, goldsmith, Dec. 20  
 Kerland, J. New City Chambers, merchant, Dec. 3  
 Kirkpatrick, T. Church passage, Gateaton street, merchant, Nov. 19  
 Keeves, John, Chandos street, Covent Garden, dealer, Nov. 29  
 Kempson, S. Fleet street, linen draper, Dec. 17  
 Loves, D. and J. H. Riggs, Hart street, Covent Garden, rectifiers, &c. Dec. 13  
 Mathews, G. and T. Turnbull, Budge row, merchants, Nov. 15  
 Moore, W. Richmond, stable keeper, Dec. 6  
 Murray, J. Sherbone lane, merchant, Nov. 29  
 May, S. Norwood, Great St. Helen's, merchant, Nov. 22  
 Marriott, S. Paul's head Tavern, vintner, Dec. 3  
 Mitchell, J. Long Acre, cheesemonger, Dec. 13  
 Marshall, J. Workington, linen draper, Nov. 29  
 Nesbitt, J. E. and J. Nesbitt, Jun. Aldermanbury, merchants, separate estate of Nesbitt, sen. Nov. 26  
 Norton J. Drury lane, victualler, Jan. 21, 1804, final  
 Porter, R. Great Driffield, spirit merchant, &c. Dec. 5  
 Priestley, J. sen. and Jun. Fieldhead, Amelia Priestley, Upper Clapton, and J. Priestley, Great St. Helen's merchants, Nov. 19, final  
 Paine, J. Birmingham, upholsterer, Dec. 12  
 Palmer, W. Holbeach, draper, Dec. 12  
 Richardson, R. J. London street, merchant, &c. Dec. 17  
 Sutton, W. Sadler's hall court, merchant, Nov. 26  
 Solomon, S. New street, Bishopgate street, merchant, Nov. 26  
 Stone, J. Liverpool, victualler, Nov. 30  
 Simpkins, R. L. Leicester, hofier, surviving partner under the firm of F. Orton, and R. Law Simpkins, joint and separate estate of Simpkins, Nov. 30  
 Steane, W. Anley, maltster, Dec. 2  
 Sircum, R. Bristol, looking glass manufacturer, Dec. 6  
 Sack, L. Hatton Garden, merchant, Dec. 6  
 Skinner, G. Liverpool, mariner, Dec. 9  
 Spraggon, J. and W. Gravendon, fupellers, Dec. 6  
 True, T. Stamford, draper, &c. Nov. 21  
 Thompson, W. Jun. Woolverhampton, grocer, Nov. 15  
 Tanner, G. Bristol, Hardwareman, Nov. 14  
 Tatlock, J. Finch lane, broker, Nov. 16  
 Tredwell, H. Wolvercote, dealer, Nov. 30  
 Turnbull, W. late of Fenchurch street, now of Bell Savage yard, dealer, Dec. 3  
 Taylor, J. and J. Parker, Marsh, Wigmore street, linen drapers, Jan. 3, 1804  
 Whalley, T. and J. Wilkinson, Friday street, warehousemen, separate estate of Whalley, Nov. 19  
 Winter, T. Brewer street, optician  
 Watton, J. Lynn, druggist, Dec. 10  
 Wall, E. Shrewsbury, inn keeper, Dec. 5  
 Williams, T. and M. Field, Auerfate street, packers, &c. separate estate of Williams, Dec. 3  
 Wright, J. and P. Beavis, Bristol, linen drapers, Dec. 17  
 Wilmor, T. Woolwich, linen draper, Dec. 13  
 Williamfon, T. Holbeach, grocer, Dec. 12

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

Raw Hides.	1st Week		2d Week		3d Week		4th Week.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Best Heifers & Steers, pr ft.	3 8	to 4 0	4 0	to 4 2	3 8	to 4 0	3 8	to 4 0
Middling	3 4	to 3 6	3 4	to 3 6	3 4	to 3 6	3 4	to 3 6
Ordinary	0 0	to 3 0	3 0	to 3 2	3 0	to 3 2	3 0	to 3 2
Market Calf	10 6		10 6		10 6		10 6	
Eng. Horse	14s	to 16s	14s	to 16s	14s	to 16s	14s	to 16s
Sheep Skins	3 0	to 5 6	3 0	to 5 6	3 0	to 6 0	3 6	to 6 0
Lamb Skins	2 0	to 4 0	2 6	to 4 0	2 6	to 4 0	2 6	to 4 0
<i>Prices of Hay and Straw.</i>								
St. James's—Hay	5 4	0	4 17	6	5 1	6	5 5	0
Straw	1 7	0	1 9	3	1 10	0	1 10	0
Whitech.—Hay	5	— 0	5 5	0	5	— 0	5 5	0
Clover	6 10	0	6 10	0	6 7	0	6 10	0
Straw	1 14	0	1 12	0	1 6	0	1 12	0
<i>Newbury.</i>								
Wheat	—s	to —s	44s	to 64s	48s	to 65s	48s	to 63s
Barley	—s	to —s	23s	to 26s	23s	to 27s	23s	to 27s
Oats	—s	to —s	20s	to 25s	22s	to 25s	20s	to 26s
Beans	—s	to —s	—s	to —s	—s	to —s	—s	to —s
New ditto	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Peas	—s	to —s	—s	to —s	—s	to —s	—s	to —s
<i>Salisbury.</i>								
Wheat	—s	to —s	48s	to 54s	48s	to 54s	50s	to 54s
New ditto	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Barley	—s	to —s	24s	to 26s	23s	to 27s	24s	to 26s
Beans	—s	to —s	—s	to —s	—s	to —s	—s	to —s
Oats	—s	to —s	22s	to 26s	22s	to 25s	22s	to 26s
Peas	—s	to —s	—s	to —s	—s	to —s	—s	to —s

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

Price of Hops.	First Week		2d Week		3d Week		4th Week	
	s.	s.	s.	s.	s.	s.	s.	s.
<b>Bags.</b>								
Kent — —	90 to 108	90 to 108	90 to 108	90 to 108	80 to 105	90 to 105	90 to 105	90 to 105
Suffex — —	86 to 100	90 to 104	90 to 104	90 to 104	80 to 100	90 to 100	90 to 100	90 to 100
Essex — —	86 to 100	90 to 104	90 to 104	90 to 104	80 to 100	90 to 100	90 to 100	90 to 100
<b>Pockets.</b>								
Kent (new) — —	96 to 120	100 to 120	100 to 120	100 to 120	100 to 120	100 to 120	100 to 123	100 to 123
Suffex — —	96 to 112	100 to 112	100 to 112	100 to 112	100 to 114	100 to 114	100 to 116	100 to 116
Farnham — —	160 to 180	140 to 189	140 to 189	140 to 189	160 to 180	160 to 180	140 to 189	140 to 189
<b>Seeds.</b>								
Red Clover per cwt. —	40 to 100	40 to 105	40 to 105	40 to 105	40 to 100	40 to 100	40 to 100	40 to 100
White Clover, ditto —	70 to 112	70 to 110	70 to 110	70 to 110	70 to 110	70 to 110	70 to 112	70 to 112
Trefoil, ditto —	18 to 46	20 to 48	20 to 48	20 to 48	16 to 50	30 to 56	30 to 56	30 to 56
Carraway ditto —	40 to 45	40 to 45	40 to 45	40 to 45	60 to 65	60 to 65	60 to 65	60 to 65
Coriander ditto —	16 to 18	16 to 1	16 to 1	16 to 1	16 to 17	16 to 17	16 to 17	16 to 17
Turnip, (per bushel) —	20 to 26	20 to 26	20 to 26	20 to 26	20 to 28	20 to 28	20 to 28	20 to 28
Canary Seed (per bushel.)	74 to 78	74 to 78	74 to 78	74 to 78	74 to 78	74 to 78	20 to 28	20 to 28
Rye Grass, (per quarter)	— to —	— to —	— to —	— to —	— to —	— to —	— to —	— to —
Cinque Foil, ditto —	— to —	— to —	— to —	— to —	— to —	— to —	— to —	— to —
Rape Seed, (per last) —	361 to 381	361 to 391	361 to 391	361 to 391	371 to 401	371 to 401	371 to 391	371 to 391
<b>Meat at Smithfield,</b>								
To sink the offal, p. st. 8lb.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.
Beef — —	4 0 to 5 2	4 0 to 5 4	4 0 to 5 4	4 0 to 5 4	4 0 to 5 4	4 0 to 5 4	4 0 to 5 8	4 0 to 5 8
Mutton — —	4 0 to 5 4	4 6 to 5 4	4 6 to 5 4	4 4 to 5 4	4 4 to 5 4	4 4 to 5 6	4 4 to 5 6	4 4 to 5 6
Veal — —	5 0 to 6 8	4 8 to 6 0	4 8 to 6 0	5 0 to 6 6	5 0 to 6 6	5 0 to 7 0	5 0 to 7 0	5 0 to 7 0
Pork — —	4 0 to 5 0	3 4 to 4 8	3 4 to 4 8	3 0 to 4 4	3 0 to 4 4	3 8 to 4 8	3 8 to 4 8	3 8 to 4 8
Lamb — —	4 0 to 5 4	4 0 to 5 8	4 0 to 5 8	4 0 to 5 4	4 0 to 5 4	4 0 to 5 0	4 0 to 5 0	4 0 to 5 0
Head of Cattle—Beasts about	2,400	2,500	2,500	2,500	2,500	2,500	2,500	2,500
— Sheep and Lambs	17,000	11,500	14,500	14,500	14,500	15,000	15,000	15,000
<b>Price of Leather.</b>	d.	d.	d.	d.	d.	d.	d.	d.
Butts, 50lb. to 56lb. each	10 to 21	19½ to 21	19½ to 21	19 to 21	19 to 21	20 to 21	20 to 21	20 to 21
Ditto, 60lb. to 65lb. each	22 to 23	23 to 24	23 to 24	22 to 23	22 to 23	22 to 24	22 to 24	22 to 24
Merchants Backs —	— to —	20 to 21	20 to 21	20 to —	20 to —	20 to 20½	20 to 20½	20 to 20½
Dressing Hides —	20 to 21½	19½ to 20½	19½ to 20½	20 to 21½	20 to 21½	20½ to 21½	20½ to 21½	20½ to 21½
Fine Coach Hides —	21 to 23	21 to 22½	21 to 22½	21½ to 23	21½ to 23	22 to 23	22 to 23	22 to 23
Crop Hides for cutting	20 to 21½	20½ to 22	20½ to 22	20 to 21½	20 to 21½	20½ to 22	20½ to 22	20½ to 22
Flat Ordinary —	19 to 20	19 to 20	19 to 20	19 to 20	19 to 20	19 to 20	19 to 20	19 to 20
Calf Skins, 30 to 40lb. p. doz.	24 to 32	24 to 32	24 to 32	28 to 32	28 to 32	28 to 31	28 to 31	28 to 31
Ditto, 50lb. to 70lb. do.	27 to 33	27 to 33	27 to 33	27 to 31	27 to 31	27 to 30	27 to 30	27 to 30
Ditto, 70lb. to 80lb. do.	26 to 27	26 to 27	26 to 27	26 to 28	26 to 28	26 to 28	26 to 28	26 to 28
Sm. Seals (Greenland)	42 to 45	42 to 45	42 to 45	42 to 45	42 to 45	42 to 45	42 to 45	42 to 45
Large do.	51 to 71	51 to 71	51 to 71	51 to 71	51 to 71	51 to 71	51 to 71	51 to 71
Tanned Horse Hides	18s to 28s	18s to 28s	18s to 28s	18s to 30s	18s to 30s	18s to 28s	18s to 28s	18s to 28s
Goat Skins per doz.	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
<b>Price of Tallow.</b>	s.	d.	s.	d.	s.	d.	s.	d.
St. James's Market —	4	9½	4	10	4	9½	4	10
Clare Market —	4	10	4	9½	4	9½	4	10
Whitechapel Market —	4	9½	4	8	4	8½	4	8½
Per stone of 8lb. Average	4	9½	4	9	4	9	4	9½
Town Tallow — —	80	6	80	6	81	6	81	6
Russia ditto (Candles) —	77	0	77	0	78	0	76	0
Russia ditto (Soap) —	71	0	71	0	72	0	71	0
Melting Stuff — —	65	0	65	0	65	0	65	0
Ditto rough — —	44	0	44	0	44	0	44	0
Graves — — —	14	0	14	0	14	0	14	0
Good Dregs — — —	12	0	12	0	12	0	12	0
Yellow Soap — — —	84	0	84	0	84	0	84	0
Mottled ditto — — —	92	0	92	0	92	0	92	0
Curd ditto — — —	96	0	96	0	96	0	96	0
Candles, per dozen, —	12	6	12	6	12	6	12	6
Moulds — — —	13	6	13	6	13	6	13	6

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AVERAGE PRICES OF CORN, by the quarter of eight Winchester bushels; and of OATMEAL, per boll, of 140 pounds Avoirdupoise: From the Returns received in the Week, ended NOVEMBER 19, 1803.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Middlesex	58	11	26	6	27	8	29	4	39	3	44	10		
Surrey	60	8	43	0	2	6	28	10	38	6	42	6		
Hertford	55	6	35	9	23	6	25	4	35	9	38	3		
Bedford	55	5	34	8	22	5	24	3	38	2				
Huntingdon	53	13			21	6	22	0	31	3	38	4		
Northampton	53	2	31	0	22	8	22	10	33	9	37	6		
Rutland	58	0			25	0	21	6	37	6			57	3
Leicester	58	1			25	10	25	3	38	7	37	8	37	9
Nottingham	61	0	38	0	29	2	27	8	40	0				
Derby	62	0			30	10	28	0	42	0	46	0		
Stafford	57	5			30	11	28	3	37	4			37	2
Salop	51	16	37	6	27	0	25	10			42	9	63	7
Hereford	47	4	32	0	25	6	25	0	43	9	43	4	59	3
Worcester	48	6	36	2	28	2	28	6	43	7	44	1		
Warwick	55	7			29	0	28	5	43	11	52	8	45	0
Wilts	52	10			25	2	24	8	43	4	39	0		
Berks	59	9			26	4	27	3	40	4	41	4		
Oxford	53	6			23	8	23	10	36	0	38	4		
Bucks	55	2			24	11	26	0	36	3	42	3		
Brecon	51	2	32	0	26	0	21	4			37	4	36	0
Montgomery	48	0					18	1			43	2	42	5
Radnor	48	10			27	5	23	6			37	4	67	10

Maritime Counties.

Essex	59	8	35	0	27	10	30	7	35	4	38	6		
Kent	60	4	46	0	29	6	31	4	39	6	41	6		
Suffex	54	4			30	7	29	8	43	6				
Suffolk	54	3			23	9	25	14	30	11	38	0	51	10
Cambridge	52	10			21	2	20	3	31	0	35	0		
Norfolk	51	6	32	8	23	5	23	5	33	5	35	2		
Lincoln	52	11			26	1	23	2	36	3				
York	53	4	37	2	26	6	24	4	40	8	58	8	42	8
Durham	50	3			26	8	22	11						
Northumberland	48	10	38	0	22	9	23	4					18	6
Cumberland	54	5	36	0	26	10	22	2						
Westmorland	58	4	44	6	27	8	24	2						
Lancaster	59	3			28	8	28	8	40	11			23	10
Chester	54	9			30	6	28	4					24	9
Flint	56	2			30	2								
Denbigh	58	4			30	4	20	11	51	3	41	8	40	8
Anglesea					20	0	18	6						
Carnarvon	58	0			24	10	18	3					44	6
Merioneth	57	9	48	0	28	0	20	8			40	0	34	11
Cardigan	51	4			20	0	16	0						
Pembroke	48	0			20	0	16	0						
Carmarthen	58	8					16	0						
Glamorgan	55	11			25	10	22	4						
Gloucester	49	8			24	4	24	5	41	2	44	0		
Somerset	55	4			27	11	22	8	40	1				
Monmouth	53	0			24	6								
Devon	57	9			23	11	22	6						
Cornwall	56	10			28	6	23	9						
Dorset	53	5			25	6	26	0	45	0				
Hants	52	11			25	11	25	1	39	7				



## TO OUR CORRESPONDENTS.

**T**HE concluding observations in the intelligent letter from P. J. will be noticed in the usual list at the end of the volume.

The Letter from Chorographus is received and postponed.

We wish our correspondents to take notice, that those communications which are not received at the office, on or before the 18th of the month, cannot be introduced into the number preparing for publication. However desirable we may be to comply with the wishes of those who contribute to our assistance in this undertaking, we are obliged to introduce this restriction with respect to time, to prevent indiscreet haste in the conduct of the work.

We have to return our thanks to Veterinarius for his communication introduced into the present number; and also for his kind intentions of giving us future support, but we cannot admit the conclusion of his first paragraph to be precisely correct, that the insertion of his first letter forms any thing like an engagement, to insert his future ones. Their introduction must depend not only on their merit, but upon their suitability to the nature and design of our publication.

An article we have introduced under the title Manufactures and Useful Arts in our last number, might have excused our inserting the Letter from F. G. if we had not been unwilling to disappoint the wishes of a new and intelligent correspondent, whose communications will always be very acceptable.