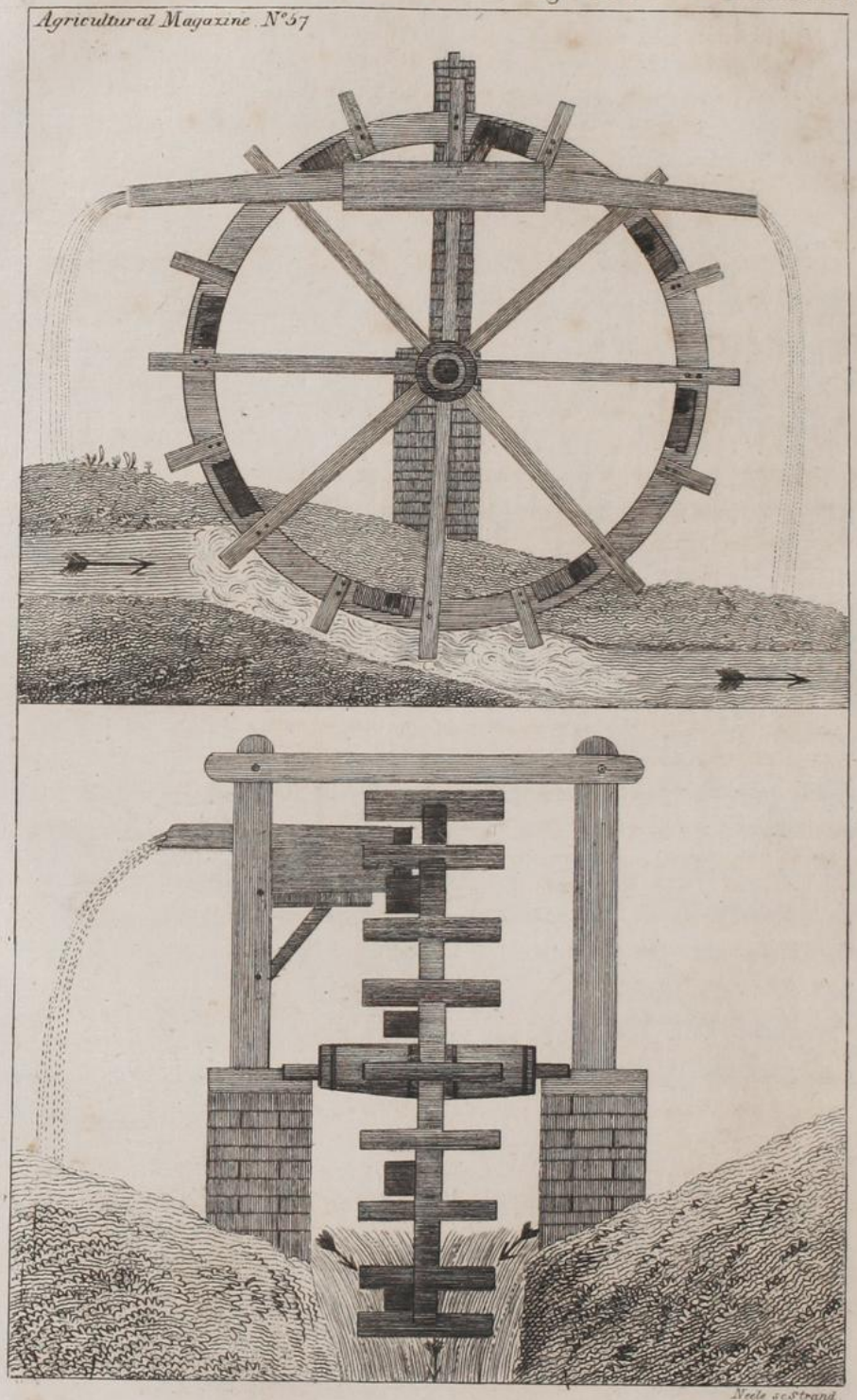
Section & Front View of the German lifting Wheel used in America.



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DESCRIPTION OF A MACHINE FOR THE PURPOSE OF IRRIGATION, WITH REMARKS ON CERTAIN OBJECTIONS MADE TO THE EXPEDIENT OF FLOATING LANDS.

[WITH A PLATE ANNEXED.]

To the Editor of the Agricultural Magazine.

Sir,

An infinity of contrivances have been resorted to for the purpose of raising one of the most important and useful of the elements, water; if, indeed, under the present improvements in the art of Chemistry, we may be permitted to speak of water, even in a popular way, as an elementary principle. Whatever other arts or sciences have conduced to the improvement of Agriculture, it will be universally acknowledged, that hydraulics, or that part of statics which considers the motion of fluids, has been in a very small degree consulted to facilitate the increase of vegetable productions, and yet it is certain, not only from the observations of the modern, but from the discoveries of the ancients, that it may be extensively applied to multiply these gifts of Nature. You, Sir, have not wholly neglected the theory of this science as applicable to the purposes of agriculture; many sections of your work contribute valuable instruction on this subject, and in the 303d page of your second volume, you have introduced a plate of the Persian Wheel for floating meadows, which no doubt both has deserved and received the attention of your readers. It might have been explained in that paper, that it was a machine most conveniently adapted for the purpose of raising water, because it required neither men or animals to turn it, and working in the stream by the impetus the water alone supplied, it fulfilled the purpose intended under the most advantageous circumstances. With the present communication I have accompanied a drawing, which I think worthy the ingenuity of your artist; it represents a wheel of a similar kind, under two views, but more suitable in the form, and more easy in the expence. It has been frequently called a lifting wheel. It may be constructed at a very trifling charge, from an old cart wheel which is no longer adapted to the design for which it was made. It may be made of common deal, oak, or any other boards, nailed together in

the readiest way: the object is, to approximate such material to the shape of a circle, whose diameter is equal to the perpendicular height of the summit level to which you would raise your water at a single operation; allowing for so much thereof as should dip into the stream to fill your buckets, and so much as should pass above the uppermost trough to discharge the water from them.

This shape is then reduced to an exact circle, by the means of a line and chalk extended from its centre, and the surplus plank being hewn down to the scribe of the circle, an axis of about two feet six inches in length is fitted to it, with arms of the same plank, and two small iron gudgeons to turn upon. Flutters are then fitted on with the saw, and cleated at convenient distances; with a close box between every second and third of them, nailed upon the rim of the wheel. These buckets (by some termed gaining and losing buckets) have two apertures or holes for receiving and discharging the water; and as the bucket is immersed in the stream below, by the power of this little rapid acting upon the incussive flutter-boards, the water is taken in at one hole, and discharged out of the other, as the wheel revolves it over the trough above.

No doubt the chain-pump, the sucking, forcing, or lifting pump, or the massive wheel of Archimedes, would answer the same purpose, but the question most material is, not how water should be raised, but what is the expedient by which it may be elevated at the smallest expence, and with the least proportion of labour. In some of your papers, Sir, you have expressed indignation at the enormous charge for farming-engines; and in one of your late numbers, you have favoured us with a contrivance of a Scottish carriage, which may be built at one sixth of the expence of the carts commonly used in agriculture, I am therefore to suppose, that you include in your consideration the cheapness as well as the utility of farming machinery, in order that any beneficial invention may be both generally known, and as generally employed.

You have, in the course of your work, endeavoured to naturalize the practice of intelligent foreigners, and with this view you have explained the knowledge they have acquired from the peculiar circumstances of climate and situation under which they live. A short illustration from the principles by which you are actuated, is applicable to the hydraulic wheel, which is the subject of the present paper. It is used in America, principally by the emigrants from Holland and the Low Countries. When a Dutchman penetrates into the wide regions of the western world, to seek an establishment for himself and his family, his first object is to discover a good situation for a water-mill, and for his hydrostatic machinery, and the meadow ground to which it may be applied. He is con-

vinced, that with these acquisitions the means of subsistence are secure; a fall from a large stone of eight or ten inches, is, by the application of his skill, soon converted into a cataract of as many feet, and nature is rendered subservient to his wishes.

As I shall probably send for insertion a few papers on the subject of irrigation, as practised in different districts, I shall apply the remainder of this article to the consideration of some of the objections which have been made to the practice. Among these objections, it has never yet been asserted to be an innovation. Both ancient and modern nations have resorted to it, and it is one of those inexplicable riddles in the complication of human affairs, that it has been so much neglected in this country, where practical farming is supposed to be better understood than in any other.

Would it be believed, that in England, where one-fourth of the land is waste and unproductive, we should be such great niggards of the soil as to object to irrigation, because the drains and trenches required for it occupy a minute portion? For this trifling sacrifice, the remaining ground is converted into a hot-bed, and the quantity of produce is trebled and quadrupled.

But it is expensive.

Agriculture is defined in one of your papers, as the art of producing the highest balance of profit in favour of the cultivator. The question then is, not what are the expences incurred, but what ratio do these charges bear to the ultimate produce?

But the hay produced under irrigation is not good.

It is a vulgar proverb, that the best proof of the pudding lies in the eating, and although the experiments that have fallen within my notice are not numerous, yet, as far as I can judge from these, I am inclined to think the objection is not founded in correct observation, and that it is one of the fallacies which the prejudices of those have supplied who are too often the determined enemies of every species of improvement.

A more rational objection is, that proprietors and renters of streams are occasonally to be paid for the use of the water employed. This charge is no doubt to be placed against the increased produce, and I think it will be seldom found to exceed one twentieth part of the benefit to be derived from it. It is among the great advantages of the present pursuit of canal speculations, that a portion of the water by which the country is thus intersected in every direction, may be conveniently applied for the purpose of irrigation, and thus a handsome and unexpected rental will be acquired by the adventu-

rers in those schemes, and an abundant source of wealth will be given to the intelligent farmer.*

Not to intrude further on the limits of your miscellany, I shall subscribe myself, with the warmest wishes for its success,

Yours, &c.

Exeter, April 2, 1804. D. Y.

* Those who are acquainted with the history of Canals, in France, are informed of the extensive emoluments from this source, in the grand Canal of Languedoc.

ON THE CULTURE OF POTATOES FROM SEED AS PREFERABLE TO SETS.

To the Editor of the Agricultural Magazine.

SIR,

THE season is approcahing for planting the main crop of potatoes. Professed gardeners, and others, curious to produce early potatoes, will risque to plant even in the month of February, and so on, to the present time; but I have reason to be of opinion, that the entire month of May is *generally* the prime season for a full crop. The plant being an exotic, brought originally from the vicinity of the tropical lines, is impatient of our spring frosts, and requires, as near as may be, a temperature resembling its own.

Somewhat about the beginning of May, I think, therefore, would be the earliest period, with perfect safety, in this variable climate, to commence the culture. More than twenty years experience and observation have also confirmed me in the opinion.

The unnatural, but convenient, and perhaps, indispensible, mode of propagation, by the offsets of the bulb, or cuttings, seems calculated to induce a diminution of vegetative vigour, for it is well known, but not as genarally as it ought to be, that after a few years, perhaps ten or twelve, these cuttings, from any given species, very obviously decline in produce, and progressively, till they become not worth the culture. Hence the propriety of the practice adopted in Lancashire, and in some few other instances of frequent recurrence to the *seed*, by which the objection is not only obviated, but new varieties, almost next to infinite, are produced, which, by attentive selection not unfrequently exceed the original stock in every valuable property. The most important criterion of *value*, I take to be the greater quantity of farina, or flour, contained in any assigned portion or weight of the bulb, which I have known to vary, in different species, from nearly one-third part to one-ninth; the remainder, consisting of a

large proportion of water *(not glutenous,)* and a small quantity of fibre.

The proportions of the better sorts might then be thus expressed:

30 parts farina
65 —— water
5 —— fibre

100

The *seedling* plants and the cuttings, not many removes from them, are found universally to be highly productive, *i. e.* in number of bulbs; for the size or weight of these depends much, of course, on the nature of the soil, of the season, and of the culture.

From failure of the crops in these parts the last remarkably dry season, and I apprehend it was in a great degree general, the price of potatoes is at this time excessively high. By comparison with the price of wheat, I persuade myself they are of more than double the price of bread.

This seems to be a very striking and important fact, and calculated, I would hope, to induce a system of œconomy, namely, as much as may be to substitute bread for the potatoe, in order that a quantity of the latter might remain for an extensive breadth of planting in the ensuing season, as well as in some degree to reduce the present price; for many, I fear, will be unable to plant from the extravagant cost, who otherwise would be under every suitable circumstance for planting.

I have mentioned May as the principal month for planting; April, however, in such favourable seasons as are free from sharp frosts may be equal; and even June, when copious showers succeed, may be equal to either. I have sometimes planted in the latter part of June with good effect; and from planting of about the middle, I have obtained crops as abundant as from that of any other period.

To some persons it may appear to be an extraordinary observation, but I consider the present low price of wheat to be matter of regret. It is an *extreme*, oppressive to the cultivator, and which, at no very distant period, will be apt to beget its *opposite—both* alike injurious to the permanent interests of society. The legislature, with the purest and most benevolent motives, interpose regulations to preserve an equitable mediocrity between the grower and consumer; nevertheless, we experience the extremes of too high and too low in alternate succession.

Bath, I remain, Sir, your obedient Servant,
Apr. 9. 1804, NEHEMIAH BARTLEY.

ON THE CULTURE OF TURNIPS, AND ON SOME IMPROVEMENTS IN COOKE'S DRILL.

To the Editor of the Agricultural Magazine.

SIR, *Fakenham, April* 14, 1804.

THE late communications of your spirited and judicious correspondent A. Northumbriensis, have altogether removed from my mind prejudices which I acknowledge I have for years fondly indulged in favour of the method so long pursued by the natives of this county in the cultivation of turnips; and however mortified I may feel at the discovery, I heartily agree with A. N. that the once celebrated Norfolk is no longer such *on that score*, and must yield the palm to her northern brethren of the plough. Even if mere argument in favour of raised ridges for turnips had failed to convince me, (which by the bye I think my former communications to you, Mr. Editor, will prove I held in high estimation, even before I heard or read of such practice being in existence,) the assertions of A. N. have perfectly satisfied me; and being told that such practice is pretty general in the north of England, and southern parts of Scotland, I feel confident that actual experience has taught them the superiority of it above the common mode, and that it must be an eligible plan for all occupiers of similar soils. I beg, however, to ask your correspondent, whether the carting and spreading the dung upon raised work, or, more properly speaking, into the open furrows by fork or shovels previous to the splitting back the ridges upon the manure, does not add considerably to the expence? I tried the experiment last year upon two acres only, and found this process a very tedious one indeed, compared with the expedition practicable upon a flat surface. If the farmer who has to sow upwards of two hundred acres were to pursue this plan throughout, and had none of his land manured till the sowing season had commenced, I cannot understand how he would be able to dispatch the whole in proper season. If I err, I hope your next will set me right, as any further information on this subject would very much gratify me. The probable success of my experiment of last year was, unfortunately, never ascertained; for the turnips which were of the Swedish sort, fell a sacrifice to the rapacity of flies, in common with, perhaps, three-fourths of all the turnips sown in this county. A. N's observations on the difficulty of drawing straight furrows with the double-breasted plough with expanding wings fully accord with my own experience; nevertheless, the dispatch with which the work is ridded makes full amends for other inconveniences.

One more question, and I have done, (for I perceive that the objection I am about to propose is not noticed amongst

several others which your correspondent has very ably and satisfactorily answered in your Magazine for December last.) Are not the turnips which grow on raised ridges, more exposed to, and injured by severe frosts, than those which are produced in the common method?

By way of return to the civility which P. J. has shewn to all your *practical* Readers, by recommending a peculiar form of coulter for drilling on flag-lands, I beg leave to ask that gentleman if he has yet seen the method adopted in this neighbourhood to prevent what we here call the *clouding* or uneven appearance of barley, or other grain, at its first rising, when viewed across the drills. It is this: to fasten a bit of thin board across the mouth of the funnel by way of inclined plane; by which means the grain, which would otherwise have fallen down *in clusters* from the cups situated perpendicularly to the orifice of the tin tubes, now falling on this inclined board, is well scattered, and no longer forms knots of blades, but lies in the most regular manner.

This, with *tin-joints* to the funnels, in lieu of canvas or leather, and a small *tracing-stick*, having an iron end in form of a little mattock, instead of the usual clumsy log or slade, I consider as useful improvements upon Cooke's original invention. I am, Sir, yours, &c.

AGRICOLA NORFOLCIENSIS.

P. S. I am truly concerned to announce to your Readers, the death of a gentleman whose name has lately been mentioned in your work as the author of a pamphlet on Tithes. I allude to the Rev. Mr. Howlett, Vicar of Dunmow, Essex. I had flattered myself, that he would one day have seen himself cited in your Magazine to defend some assertions which are contained in his pamphlet: but he is no more; and the position "that tithes are advantageous to agriculture," remains to be supported by surviving, but I will venture to add, not *more able*, disputants.

THE ESTABLISHMENT OF A FLOCK OF SHEEP PRODUCING WOOL OF THE SPANISH QUALITY IN THE VICINITY OF BOTANY BAY.

To the Editor of the Agricultural Magazine.

SIR,

AS I am confident you are desirous of making your Magazine the vehicle of every important article of intelligence respecting agriculture, I shall submit the following particulars to your attention.

It is not generally known, that near Botany Bay, about 40 or 50 miles from the coast, a flock of fine woolled sheep has for many years been gradually increasing, so that it now is

augmented to the number of 4000. The wool in every respect is equal to that you have so frequently described in your work, of the Spanish breeds. This flock has been formed with a view to a commercial speculation, under the direction of Captain M'Arthur, sometime since engaged on military duty in New Holland, but who, in consequence of a rencontre with Governor King, when the latter was wounded, was about a year since sent under arrest to this country.

What may be the merits of these gentlemen in regard to this dispute, I do not pretend to determine, but I can speak with the most positive assurance and satisfaction on the deserts of Captain M'Arthur, as concerned in this valuable experiment for the supply of the British manufactures with the staple material.

Let it not be supposed that the freight of the commodity will be so extravagant as to disappoint the expectations of the projector; it is a matter of serious consideration to the ships destined to Botany Bay to procure a freight in return, and by these means it may be advantageously supplied.

It will deserve the attention of your able correspondent Mercator Tarraconensis, that this remote speculation has become the basis for the establishment of a new trading institution. Government, it seems, has not considered it right, that by the employment of the public territory, an individual, however meritorious, should enjoy the exclusive opportunity of acquiring an immense fortune in a short period; we understand, therefore, Mr. M'Arthur has been induced to offer his flock at 5*l.* a-head, and that a public company is to be established, in which the new house of Messrs. Hullet and Co. and the ancient house of Maitlands and Co. successors to Sir Robert Fludyer, will be principally interested.

Such are the facts which are stated to me as correct, and I shall be happy to hear them confirmed through the medium of your connections.

I do not wish that this new enterprize, however successful, should interfere with the endeavours of Mr. Nehemiah Bartley, and others who correspond with your work, to introduce the quality of Spanish wool on our British pastures. I am sure that the extensive demand for English cloths, which I see by the last estimates from the north, have exceeded in quantity any prior year, ought to afford them sufficient encouragement. The remote settlement to which I have adverted in the strange vicissitudes of the present day, must be exposed to a thousand contingencies, but whether it be preserved or destroyed, British industry will supply room enough to reward the labours of every competitor.

I am, Sir, yours, &c.

London,
April 16, 1804.

G. S.

ON THAT SPECIES OF PERSONAL TITHES CONNECTED WITH COMMERCIAL AND TRADING PROFITS. IN REPLY TO CLERICUS.

To the Editor of the Agricultural Magazine.

SIR,

YOUR Correspondent Clericus, in the last Number, introduces some free and manly observations on my letter respecting Tithes, in your preceding volume. I wish, Sir, that every disputant would, with the same boldness, declare his sentiments, as it would often tend to shorten controversy and to discover truth. "These are days," says this writer, "when the mania of revolution is invading all the ancient establishments, and when its fury and rapacity is peculiarly directed to the subverson of the rights of the sacred order. It is not, then, a time, when the maxims of sound wisdom should incline us to barter away those privileges which we have obtained from the piety of mankind. Let the Laity be satisfied with the forbearance of the Clergy, in not asserting their rights, lest, if the seculars should press us indiscreetly on this subject, we should think it prudent to resist their hostility, by availing ourselves of the weapon which the laws of our country have, on the most obvious principles of state policy, confided to our hands."

What, Sir, is this weapon, which the humanity of the Clergy has admitted to remain inactive? We are told in the preceding paragraphs, that it is the tithes on the exports from this country, amounting to "fifty millions sterling," and on the internal commerce, which (Clericus says) "from its extent and magnitude, seems to defy the calculations of the political arithmetician."

It is not my intention to alarm the Clergy by multiplying the statements already given of the revenues of the Church, but I should terrify both the Clergy and Laity, if I were to detail, from the ordinary calculations on the trade of this nation, the millions that would devolve to the Church annually, from this claim of personal tithes so confidently asserted.

I should, Mr. Editor, be extremely sorry to make your useful practical miscellany, the vehicle of juridical disquisitions on subjects of this nature, but as you have, in compliance with the wishes of your correspondents, occasionally introduced them, you will, I am sure, pardon me for adding a few concise observations.

Clericus has alluded to the Act of the 2d and 3d Edward VI. c. 13. What were then called personal tithes, rest upon the 7th and 8th section of that statute. The 8th is a sort of pleonasm; I shall therefore omit it. The former is couched in

the following terms. " And be it further enacted, by the authority aforesaid, that every person exercising merchandizes, bargaining and selling, cloathing, handicraft, or other art or faculty, being such kind of persons, and in such places, and heretofore within these forty years, have accustomably used to pay such personal tithes, or of right ought to pay, (other than such as have been common day-labourers) shall yearly, at or before the first day of Easter, pay for his personal tithes, the tenth part of his clear gains; his charges and expences, according to his estate, condition, or degree, to be therein abated, allowed, and deducted."

Such is the parliamentary foundation on which this demand of Clericus and his sable fraternity is supported. It is of the nature of a declaratory law, and it will become your correspondent to attend to the construction on this Act, before he trusts to the weapon which he says the laws of his country has, on the most obvious principles of state policy, confided to his hands.

In the first place, declaratory laws impose no new restraints, establish no new regulations, but to prevent licence being substituted for law *in perpetuum rei testimonium*, announce what is, and shall be the law of the land, and remove the doubts and difficulties attending the explanation of the designs of the legislature.

The 2d and 3d of Edward VI. does not allow the Ordinary to examine the parishioner on oath, with respect to these personal tithes.

It has been determined, that an inn-keeper is not chargeable for such tithes in regard to the profit made by the sale of wine and beer; nor any person for the gain of money put out to interest. A copper-mill, a fulling-mill, a shaving-mill, and a glass-house, &c. pay no tithes, on the ground that the profits arise from the mere labour and industry applied in these undertakings. What is fatal to the pretensions of Clericus is, that on the same principle, the profits of every manufacture have been held not to be titheable; and thus all his aerial castles, with grand portals decorated with the sacerdotal arms, and crowned with the episcopal mitre, vanish from his view.

But before he relies for defence on this favourite weapon, let him also recollect the terms of the 7th section of the statute he has adverted to, whereby the payment of this distinction of tithes *is confined to such persons and places, by whom and in which the same have been accustomably used*, and ought to have been paid. Clericus should not be ignorant on this critical point, that it has been judicially determined, these are not due of common right like predial tithes, but where

they have not been usually paid they are not to be levied.*

What is most important for the notice of Clericus is, that he should consult his Diocesan, before, in the name of the sacred order, he ventures to proclaim a right which has been for centuries abandoned as untenable. It has been long considered as neither founded in law, justice, or policy; and if a few of his brethren were to be guilty of the same imprudence, and adopt the same extensive means he has resorted to of circulating the pretension, they would more rapidly conduce to the abrogation of all tithes, than the whole herd of discontented and querulous cultivators. I will conclude with referring to the language of Lyndwood. "Sic dictæ quia potius respectu personæ solvunter quam rei, utpotè de artificio, negotiatione, et militiâ."

I am, Sir, yours, &c.

April 7, 1804. AGRICOLA MERIDIONALIS.

* Bun. 73. 2 Rol 84. 1 Rol 405. 3 Bul 212.

METHOD OF PREPARING VINEGAR FROM THE REFUSE OF BEE-HIVES.

To the Editor of the Agricultural Magazine.

Sir,

In your last volume, page 256, you were kind enough to insert a paper I sent you on the Economy of Bees, wherein I said, that information on this subject was to be collected most advantageously "from the practice and experiments of learned foreigners, who have improved their knowledge of the economy of this insect by consulting the theories of Reaumur, Schirach, De Tigny, and the celebrated naturalists of Geneva." To the instruction of M. Lombard, in the Bibliotheque Physico-Economique, I am indebted for the following method of making vinegar with the refuse of bee-hives.

When the honey is extracted from the combs by means of pressure, take the whole mass, break and separate it, and into each tub or vessel put one part of combs and two of water; place them in the sun, if the rays possess sufficient power, or in a warm place, and cover them with cloths. Fermentation takes place in a few days, and continues eight or twelve days, according to the higher or lower temperature of the situation in which the operation is performed. During the fermentation, stir the matter from time to time, and press it down with the hands, that it may be perfectly soaked. When the fermentation is over, put the mass to strain upon sieves or strainers. At the bottom of the vessels will be found a yellow liquor, which must be thrown away, because it would

soon contract a disagreeable smell, which it would communicate to the vinegar. Then wash the tubs, put into them the water separated from the other matter; it immediately begins to turn sour; then the tubs must again be covered with cloths, and kept moderately warm. A pellicle or skin is formed on their surface, beneath which the vinegar acquires strength; in a month's time it begins to be sharp; it must be left standing a little longer, and then put into a cask, of which the bung-hole is left open, and it may then be used like any other vinegar.

Lewes, I am, Sir, yours,
April 12, 1804. COLONUS.

ANSWER TO VETERINARIUS ALTER, ON AGRICULTURE AS CONNECTED WITH CHEMISTRY, THE CARBONIC PABULUM, AND ON THE FRENCH, ENGLISH, AND DUTCH SCHOOLS.

To the Editor of the Agricultural Magazine.

SIR,

VETERINARIUS ALTER, whom I, to avoid the "more stately tone," shall abbreviate to V. A. has written a letter with great spirit and good humour, in answer to two of mine which appeared in Nos. 53 and 54 of your publication. He begins with saying, on the authority of a French chemist in the Annales de Chemie: "That it is out of the power of chemistry, in its present state, to confer any new or practical benefits on Agriculture." This is one of the boldest assertions that any of your correspondents have ventured to introduce into your work; and V. A. referring to a desultory production in 50 volumes, has not condescended to give us the article by which it is supported. Is he ignorant of a recent production of Lord Dundonald, professedly written to shew the connection between these two arts? Is he unacquainted with the periodical pieces of the highest merit teeming from the French press, which demonstrate the closest alliance? Are the numerous papers in your Miscellany, with which he corresponds, entirely to escape his observation, the labour of which is to expose this important fact: that Agriculture is founded on the principles of the Chemical art, and that without its assistance, the country would revert to that barbarism and infertility, which prevails in the regions of Louisiana!

Surrounded, Sir, as we are by this cloud of witnesses, shall I select a single fact to maintain the converse of his position? Shall I not rather appeal to the history of science in Europe, to the enquiries of all the learned philosophers and naturalists of Germany, France, and Britain, to oppose this hardy assertion? If it be true, the pages of your work are replete with

absurdity, you, Mr. Editor, must recur to your horn-book, you must retrace the steps you have taken through life, and commit your library to a similar conflagration to which that of the hero of La Mancha was exposed.

V. A. proceeds: "The carbonic matter, it seems, was unknown to Bergmann; but there was nothing on earth to prevent his grandfather from knowing it, excepting its new name. But what if otherwise? Has Hassenfratz *proved* it the food of plants? Not to me. The world never has, probably never will, profit by experience."

The ease and freedom of this gentleman's style will be some apology for me, if I treat him with the same familiarity, and converse with him in my night-gown, without the parade of the flowing perruque, polished sword, and amber-headed cane of the profession. With some writers, the leading object is, to excite surprise, and they attain success in this endeavour, by contradicting those fundamental truths which the universal consent of mankind has established. The concluding sentence of this quotation is of that kind, and I believe all your readers will concur with me when I affirm the exact reverse. The world ever has, probably ever will, profit by experience, and experience is the only master by which it will condescend to be instructed.

V. A. alludes to the pneumatic medicine, and I am therefore to presume, he is not uninformed on the modern system of pneumatic philosophy. The British parent of this system, is now a wanderer and an exile in the wilds of America;* the French patron fell beneath the axe of the revolution. It is in consequence of their discoveries, that carbon was correctly analized; and my "grandfather," and all his predecessors, were as ignorant, both of the name and the thing as a vegetable food, as they were of the new veterinary fraternity.

In answer to my observation in favour of the French school, V. A. says, that the veterinary art may be more successfully acquired "from the principles and practice of two or three of our best writers, the disciples of Boerhaave, whom they did not disgrace, and whose merits the lectures of modern professors have not been able to obscure." And he proceeds, "Any veterinary professor or lecturer professing a moderate previous share of knowledge, would easily, and without any great exertions of genius, have been able on such base, to have founded an English veterinary course."

It is curious to observe, how persons of considerable acumen, in the heat of argument, and foaming with the violent spirit of disputation, expose themselves unguarded, in the endeavour to assail their adversary. It will appear singular to

* Since this article was sent to the press, the melancholy intelligence of the death of Dr. Priestley has arrived in Europe. E.

your readers, that while this medical gentleman is waving his magic wand over the map of science, and pointing to England as the fit centre of the veterinary art, he refers for its origin to a Dutch professor, and instead of distinguishing for our notice any ray of genius which emanated from that centre, he for a moment forsakes the bogs of Holland, and states it as a *mere possibility*, that the disciples of Boerhaave, who have alternately partaken of his gin and physic in those morasses, *might have founded* an English veterinary course.

I am sure, Sir, I should deviate from the general design of your work, if I were to enter into a comparison of the ancient and modern pharmacopœia. Your correspondent, V. A. is in the daily habit, unavoidably from the duties of his profession, of employing the latter; I am, therefore, astonished at the preference he has assigned the other. Perhaps in the Medical Journal, I might have made some observations on his tutty and the viper's fat with which it is commixed, in his favourite systems and nomenclatures, and shew why I consider the substitution of simple liniment of oil and wax preferable; but here, only, by the one, I would intimate the smoothness and urbanity with which all literary controversy should be conducted; and by the other, the close adhesion to those principles which are essential to public utility and happiness.

I shall not conclude without returning thanks to V. A. for his frequent and familiar reference to my honoured grandam, to whom I acknowledge myself indebted, both for the better and for the major part of my education: he will permit me to remind him of the admonition on this subject of one of the best and wisest of mankind, for the language of which I need make no apology to a student in the school of Hippocrates.

"Τες τε γονεις τιμα, τες τ'αγχις' εκγεγαωτας."

Warwick-Lane,
April 3, 1804.

I am, Sir, yours, &c.
LUCAS MEDICUS.

THE ART OF HATCHING DOMESTIC FOWLS BY MEANS OF ARTIFICIAL HEAT.

To the Editor of the Agricultural Magazine.

Sir,

NOTHING can be more just, than an observation I have met with somewhere in your Miscellany, on the gross and palpable neglect of natural history in this country. In my letter which you were kind enough to introduce, page 33, of your present volume, I adverted to a subject of this kind, and I will now refer to a paper of an ingenious Frenchman, Monsieur Reaumur, which, as early as the year 1749, was submitted to the attention of the members of the Academy of Sciences at Paris. The contents of this do-

cument will shew the patient and laborious attention which that naturalist paid to a curious and useful subject of enquiry, that has been despised in this country.

Bermè, in the Delta, is about 20 leaugues distant from Cairo in Egypt: the method of hatching and cherishing domestic fowls, by means of an artificial heat, has there for centuries been understood and practised. For this purpose they have contrived ovens which are capable of containing from 40,000 to 80,000 eggs. The number of these in the middle of the last century, was 386, and the time of working them about six months, so that at 20 days for each brood, they might have eight broods, and from the whole 386 ovens, 3,088 broods. The attendant is only required to give two-thirds in live chickens from the eggs with which he is supplied; so that each brood may be taken at 30,000 birds, and of course the annual produce of the ovens at 92,642,000.

What seems most necessary, in order to transfer this art into Europe, is to procure the proper heat to operate on the vital principle of the egg. All birds, and even all quadrupeds, have nearly the same degree of skin-heat, viz. about 32 of Reaumur, or 96 of Fahrenheit's thermometer. This being ascertained, we have only with caution to apply it, and the consequence is so beneficial in Egypt, according to Sicard, that this wholesome and valuable sustenance may be acquired for almost nothing: a thousand eggs may be obtained at 2s. 6d. of our money. In this country, some of our hens are not inclined to set every year; and many that are, are thus disposed at inconvenient seasons. The time a hen is so employed, and afterwards engaged in attending on her chickens, consumes a period of three months. These are serious impediments to the multiplication of the species of this valuable domestic animal. But the fastidious observer may say, that this scheme is perverting the designs of nature, and that man always frustrates his own wishes when he disappoints her evident intentions. Such is not a correct view. We should be very indifferently provided with wines, fruits, and those herbs which seem necessary to human subsistence, if we were to leave nature unassisted by the ingenious expedients of art. Man has diffused a garden over the waste, and what is applicable to vegetable, is not less applicable to animal life.

Pliny relates, that the Empress Livia hatched a chicken in her bosom; and the story is familiar to many, of a lady who gave existence to the eggs of a Goldfinch, after imparting vital heat in the same way for a period of ten days.

The vapour constantly exhaling from dung interferes with the hatching, although the heat be preserved by the assistance of the thermometer, with the utmost correctness. M. Reaumur, for a long time, did not discover this impediment:

at last he introduced his eggs into a cask, and the obstruction was removed. The cask should be lined with tin, but even plaister, or thick paper, will, for a considerable time, prevent the ingress of the steam. The vessels he employed were half hogsheads, and the dung of horses, cows, or sheep, were found equally effectual, even heaps of weeds thrown into the corner of the garden, were frequently found to possess a sufficient degree of heat. The thermometer is an instrument of too delicate a kind for the hands, eyes, or knowledge of rustics: a lump of butter, therefore, of the size of a walnut, melted with half as much tallow, put into a small glass phial, will answer the purpose equally well. If the heat be too great, the mixture will become as liquid as oil: if too small, it will remain in a motionless mass, but if the bed be of the right heat, this unctuous matter, upon inclining the phial, will pass downward like thick syrup.

For convenience, the eggs may be put into the casks in baskets, to the quantity of 150 in each basket, and two of these may be inclosed in the half-hogshead.

If it be necessary to diminish the heat, some of the surrounding dung or bed may be withdrawn; if to be increased, a layer or more of fresh dung may be applied.

We never act with greater security in these delicate operations copied from nature, than when we as closely as possible imitate her own proceedings. It is obvious, that in a nest the external eggs do not receive so much warmth as the interior. The hen seems sensible of this circumstance, and changes the position of her eggs. M. Reaumur made himself accurately acquainted with this expedient, by numbering the eggs in the nest under his birds, and from this he took the hint of changing the position of the eggs in his baskets so as to impart to them all, during the process, an equable heat. Yet it is not found necessary to accommodate this with an extreme degree of exactness: as hens of different sizes, and of various constitutions, impart more or less heat, so a deviation of from 30 to 34 degrees in the thermometer of Reaumur, was found not to be material.

On this curious subject, even the evaporation from the egg, during its progress toward vitality has been correctly determined, and it is found to have lost one-fifth part of its weight by the time the chick is ready to emerge from it's prison. Cover the shell with a varnish, so as to prevent evaporation, and the embrio is never formed; and this explains why the steam from the dunghill prevented the extrication of the animal, for the evaporation necessary to its existence could not take place. So, likewise, if eggs be put in water and the temperature of the liquid, be carefully preserved, the germs of the eggs will never be at all unfolded. The cry of the chickens

may be distinctly heard before we perceive the least aperture in the shell, which proves that they begin to breathe prior to the shell being opened. For these reasons, a free circulation must be kept up, and we must not even admit the moisture from the eggs themselves to interfere with the progress. The hen, when she leaves her nest to take nourisment, instead of obstructing, promotes the multiplication of the species. The air in the nest is in a state of stagnation; it is loaded with vapours from her body, as well as from the humidity of the eggs themselves, but this unwholesome atmosphere is dissipated, and a purer one is supplied during her short absence. Let good housewives recollect then, that when they are administering food to their favourites on the nest, they are interfering with their own designs, and with the purposes of nature.

Such are the observations which, with the assistance of the ingenious naturalist I have named, I have been enabled to lay before your readers: my own experience is not inconsiderable, and I am happy to find it confirmed from such high authority. It will, however, be of little consequence to discover what expedients ingenuity may contrive for hatching domestic birds, if, after life be so given them, we are incapable of preserving it by adopting a method of rearing these orphans in a way suited to their tender constitutions. This, Sir, will be the subject of my next letter, if I may be permitted to infer your concurrence from the insertion of the present communication. I will conclude this paper with the description of the first formation of the little animal.

The chicken is almost a round ball as it lies in its shell, the neck bent and disposed along the belly, and the bill is turned under the wing, as we often see in birds asleep. The chicken, however, in this situation, is to break its shell, and this it performs by strokes of the bill; the first effect of these strokes is, a small crack, for the most part between the middle of the egg and the bigger end; the fore part of the chicken points to that end, and the hind part towards the lesser. The chicken then, by striking the shell with its bill, insensibly turns itself about from the right to the left, and is, accordingly, always turning from right to left, so that it prolongs the crack first made in the shell, till it extends almost quite round the periphery of the circle the bill has described; and it is commonly the work of near half a day for a chicken to extricate itself from its shell. To get out, it pushes its body forward with its feet, and thus it forces the anterior part of the shell to rise up, and so completes the breaking away the shivers that connect that half shell with the inferior one. When it has thus gotten almost out, it draws its head from under the

wing where it had till then remained; it next extends its neck, but is still frequently several minutes attempting before it has strength to raise itself; by little and little, it seems to grow stronger; and when it has, for a while, dragged its legs after it, it at last becomes able to stand upon them, to stretch out and extend its neck, and carry its head erect.

London, I am, Sir, yours, &c.
March 30, 1804. AFRICANUS.

THE PRESENT STATE OF HUSBANDRY IN BENGAL.

To the Editor of the Agricultural Magazine.

Sir,

THE subsequent account of the state of husbandry in Bengal, is by a gentleman who, I understand, is now residing in that country, and whose intimate and minute acquaintance with its whole internal affairs and political economy, as well as his profound knowledge of the laws and literature of the Hindoos, give great weight to his opinions.

It will equally astonish and mortify your readers to observe, that in a country the most remote; which we have hitherto considered as wild and barbarous, the farming, in some respects, exceeds the practice attained in several of our own counties; and if the sense of humiliation should be excited in one single individual, so as to awaken the spirit of improvement, the object for which this paper is pressed upon your attention will not be wholly disappointed.

The regular succession of periodical rains, followed by a mild winter, which exempt from frost, is almost as free from rain; and this, succeeded by great heat, refreshened occasionally by showers of rain and hail, affords its proper season for every production of tropical and temperate climates. Few are altogether unknown in Bengal. Those which actually engage the industry of the husbandmen are numerous and varied. Of these, rice is the most important. Corn, in every country, is the first object of agriculture, as the principal food of the inhabitants; in this, where animal food is seldom used, it is especially important.

The natural seasons of rice are ascertained from the progress of wild rice. It sows itself in the first month of the winter; vegetates with the early moisture at the approach of the rains, ripens during that period, and drops its seed with the commencement of the winter.

A culture calculated to conform to this progress is practiced in some districts. The rice is sown in low situations when nearly desiccated; the soil hardening above the seed, gives

no passage to early showers. The grain vegetates at the approach of the rains, and ripens in that season, earlier or later, according as the field is overflowed to a less or greater depth.

This method is bad, as it exposes the seed to injury during a long period, in which it should remain inert; the practice is not frequent. Common husbandry sows the rice at the season when it should naturally vegetate, to gather a crop in the rains; it also withholds seed till the second month of that season, and reaps the harvest in the beginning of winter; and the rice of this harvest is esteemed the best, not being liable to early decay.

In low situations, where the progress of desiccation is slow, and on the shelving banks of lakes which retain moisture till the return of the rains, a singular cultivation sows rice at the end of the rains, and by frequent transplanting and irrigation, forces it to maturity in the hot season; and in situations nearly similar, sows in the cold season for an early harvest, obtained by a similar method at the commencement of the rains.

In almost every plant, the culture, in proportion as it is more generally diffused, induces numerous varieties. But the several seasons of cultivation, added to the influence of soil and climate, have multiplied the different species of rice to an endless variety, branching from the first obvious distinction of awned and awnless rice. The several species and diversities variously adapted to every circumstance of soil, climate, and season, might exercise the judgment of sagacious cultivators: the selection of the most suitable kinds is not neglected by the husbandman. There is room, however, for great improvement from the future light to be thrown on this subject by the observations of enlightened farmers.

Other corn is more limited in its varieties and its culture. Of wheat and barley few sorts are distinguished. All sown at the commencement of the winter, and reaped at the beginning of the hot season.

A great variety of different sorts of pulse finds its place in the occupations of husbandry. No season is without its apropriate species: but most sorts are sown, or ripen in the winter. They constitute a valuable article in husbandry, as thriving on the poorest soils, and requiring little culture.

Millet and other small grains, though bearing a very low price, as the food of the poorest classes, are not unimportant: several of these grains, restricted to no season, and vegetating rapidly, are useful, as they occupy an interval after a tardy harvest, which would not permit the usual course of husbandry. Maize, which may be placed in this second

class of corn, is less cultivated in Bengal than in most countries where it is acclimated. For common food, inferior to white corn, it has not a preference above millet to compensate the greater labour of its culture.

The universal and vast consumption of vegetable oils is supplied by the extensive cultivation of mustard, linseed, sesame, palma-christi, &c. The first occupy the winter season, the sesame ripens in the rains.

Among the most important of the productions of Bengal, rich in proportion to the land they occupy, valuable in commerce and manufactures, are tobacco, sugar, indigo, cotton, mulberry, and poppy.

Most of these require land solely appropriated to the respective culture of each; they would here deserve full notice, with some other articles, if I were not in this place limited to a general review of the usual course of husbandry, and the implements and methods it employs.

The arts and habits of one country elucidate those of another. The native of the North, may deem every thing novel in India; but if he has visited the Southern kingdoms of Europe, he will find much similarity to notice.

The plough, the spade of Bengal, and the coarse substitute for the harrow, will remind him of similar implements in Spain. Cattle treading out the corn from the ear, will recall the same practice in the South of Europe: where also he has already remarked the want of barns and inclosures, the disuse of horses for the plough, the business of domestic economy conducted in the open air, and the dairy supplied by the milk of buffaloes.

The plough is drawn by a single yoke of oxen, guided by the ploughman himself. Two or three pair of oxen assigned to each plough, relieve each other until the daily task be completed. Several ploughs in succession deepen the same furrows, or rather scratch the surface; for the plough wants a contrivance for turning the earth, and the share has neither width nor depth to stir a new soil. A second ploughing crosses the first, and a third is sometimes given diagonally to the preceding. These operations frequently repeated, and followed by the substitute for the harrow, pulverise the surface, and prepare it for the reception of the seed. The field must be watched for several days to defend the seed from the depredations of numerous flocks of birds. This is commonly the occupation of children.

After the plant has risen, the rapid growth of the weeds demands frequent attention, particularly in the rainy season. For few indigenous herbs vegetating in the dry season, weeding is little if at all required for plants which are cultivated in

the absence of rain. Viewing the labours of the weeders, the eye is not easily reconciled to see them sitting to their work. The short-handled spud which they use for a hoe, permits no other posture: but however familiar that position may be to the Indian, his labour is not employed to advantage in this mode of weeding.

The hook (for the scythe is unknown) reaps every harvest. In this also much unnecessary labour is employed, not merely from the want of a more expeditious implement, but from the practice of selecting the ripest plants, which taught by the harvest of different plants ripening successively, the Indian extends to the harvest of a simple crop. Yet, such are the contradictions of custom, that, while the peasant returns frequently to one field to gather the plants as they ripen, he suffers another to stand long after the greatest part of the crop has passed maturity. He justifies his practice upon circumstances which render it impracticable to enter these fields to select the ripe plants without damaging the rest; and upon the inferiority of crops which mix with ripe corn, a considerable proportion not fully ripened. Though his excuse be not groundless, his loss is considerable by the grain which drops before the harvest in so great a quantity, that if the field remain unsown, it will supply a produce by no means contemptible.*

The practice of stacking corn, intended to be reserved for seed, or for a late sale, is very unusual, the husk which covers rice preserves it so perfectly, that, for this grain, the practice would be superfluous, and the management of rice serving for the type of their whole husbandry, it is neglected by the peasants for other corn. A careless stack which waits the peasant's leisure to thrash it out, serves for a convenient disposition, rather than as a defence from the inclemencies of the weather. With the first opportunity, his cattle tread out the corn, or his staff thrashes the smaller seeds. The grain is winnowed in the wind, and stored in jars of unbaked earth, in baskets, or in twisted grass, formed into the shape of baskets.

The want of roads, which indeed could not possibly be provided to give access to every field in every season, does not leave it in the option of the farmer to bring home all his harvests by cattle; but the general disuse of cattle in circumstances which would permit this mode of transport, is among

* Of this instances are frequent; the remarkable result of one deſerves to be mentioned. An early inundation covered a very extenſive tract, before the rice had been ſown: the landlord remitted the rent, but claimed the ſpontaneous crop, and he profitted by the accommodation, realizing from this harvest a greater amount than the rent he remitted, although, in addition to the common expences, he was at conſiderable coſt to watch the crop, and was probably defrauded of a large proportion of the harveſt.

the facts which show a great disproportion between the population and the husbandry.

Irrigation is less neglected than facility of transport. In the management of forced rice, dams retain the water on extensive plains, or reserve it in lakes to water lower lands as occasion requires. For either purpose, much skill is exerted in regulating the supplies of water. For the same culture, ridges surrounding the field retain water raised by the simple contrivance of a curved canoe swinging from a pole. In other situations ridges are also raised round the field both to separate lands, and to regulate the water on considerable tracts. In some provinces, water raised by cattle or by hand, from wells, supply the deficiencies of rain. Each of these being within their compass, is the undertaking of the peasants themselves. More considerable works, not less necessary, are much neglected. Reservoirs, water-courses, and ditches, are more generally in a progress of decay than improvement.

(To be continued.)

ON THE AGRICULTURE OF THE COUNTY OF CORNWALL.

To the Editor of the Agricultural Magazine.

SIR,

THE letter from your valuable contributor, P. J. introduced into your last number, commences with the following observation. "Though Chorographus has given your very intelligent correspondent Agricola Nolfolciensis and me, a sort of challenge, I do not know that I should have made any remarks on his communication in your last Number, 53, had he not professed himself ashamed to speak of our Norfolk commons."

I can assure P. J. with perfect sincerity, while I am taking leave of his province, that Chorographus is utterly indifferent what motives induce your correspondents in the several counties of England, to make their comments on his crude and hasty disquisitions. All he wishes is, to attract their attention, and to excite their energies, so that his redundancies may be curtailed, and his deficiencies supplied. This has been the fortunate effect with respect to his remarks on Norfolk husbandry, and the latest information has been drawn from the talents of P. J. on some improvements of those districts which are excelled in the knowledge and practice of Agriculture in no part of the civilized world. With this single remark, I shall dismiss my strictures on P. J. although if I were writing for the Gospel instead of the Agricultural Magazine, of Mr. V. Griffiths, I might make some cursory observations on the "athletic sport of *camping*," and the exhibition of

blooming rural beauties on the occasion of that amusement, on the Sunday evening, around the "small neat commons" of the county *.

Three definitions have been given of Agriculture. The first is confined to the art of tilling and cultivating the earth; the second comprehends, not only feeding and the management of cattle, but even the rural sports; the third includes a yet wider scope of enquiry, and admits mines, and other subterraneous phenomena. The subject I have selected for the present letter, requires me to avail myself of the most extensive definition.

The western peninsula of England, denominated Cornwall, is the subject of this communication. This country and Devon were anciently called Dunmonium, from the tin mines with which they abound. Cornwall is joined to the main land by an isthmus of forty three miles in breadth, and the extreme length from Morwinstow to the Land's End, is seventy-eight miles and a half. An accurate estimate has been made of the number of acres, which have been found to be 758,484. Here nature has done a great deal, and man very little. Cultivation has only been attempted, generally speaking, on the shores of the sea, and in the vicinity of the larger rivers, the Faland, the Tamar, the Fawy, the Alan, &c.: the interior, is cultivated in patches, which are surrounded by the works of the miners, and districts of barbarian wildness, where the inhabitants seem to partake of the

* From my travels both in foreign countries and my own, I have been obliged to entertain very different sentiments from those which P. J. seems disposed to indulge on the manners of a country life; and I beg leave to refer him to the compositions of the poet Crabbe, if from his name and turn of thought, he be not too sour for the digestion of your Norfolk correspondent.

"Yet why, you ask, these humble crimes relate?
Why make the poor as guilty as the great?
To show the great, those mightier sons of pride,
How near in vice, the lowest are allied.
Such are their natures, and their passions such,
But these disguise too little, those too much:
So shall the man of power and pleasure see,
In his own slave, as vile a wretch as he;
In his luxuriant lord, the servant find,
His own low pleasures and degenerate mind:
And each in all the kindred vices trace
Of a poor, blind, bewilder'd, erring race;
Who, a short time in varied fortune past,
Die and are equal in the dust at last.
And you, ye poor, who still lament your fate,
Forbear to envy those you reckon great;
And know, amid those blessings they possess,
They are, like you, the victims of distress."

savage character of the country. It is, however, consolatory to notice, that the more inland countries contain veins of rich marle, loams, and clay, which under the present improvement in the science of Agriculture, would ameliorate the poorer soils, and is capable of diffusing fertility and abundance in the most unfriendly portions of this territory.

The real cause why pure Agriculture has been discouraged, is, because the mines afford the more sudden means of acquiring a fortune, than the slow, but certain expedients of Agriculture; yet the number of persons employed in these mines, have this beneficial effect, that a constant market is provided for the growth of the field, so that great and luxurious cities are not necessary to consume its produce.

The mines are either of tin, copper, or lead. The strata in which they are found diverge from the Land's End in an eastern direction, and entering Devonshire, they proceed to the remote extremity of the Dartmoor Hills. This range forms the high ground in the middle of the country, and the strata in which the ores are found consist of the schistus and of granite. The chief emporium of the mining trade at present lies from St. Austle to the western extremity. The principal mines, extend along the northern coast, keeping pretty uniformly the breadth of seven miles. Polgooth, the most considerable of the tin mines, produced on an average, for eight or nine years prior to 1794, about 2,500 blocks annually. Near Penzance, is a tin mine worked under the sea. Even the shafts, through which the miners descend, are nearly one hundred yards below high water mark. The necessity of attending to the embankment, and the danger to which the miners would be exposed by negligence in this particular, must forcibly impress the minds of your readers. The impure, and commixed state in which the ores are extracted, is well known. All tin ores, are (in the provincial phrase) reduced into metal in the county, and formed into blocks of 2 cwt. 2 qrs. or 3 cwt. 3 qrs. These are marked with the arms of the Duchy; and the Prince of Wales in his charcater, as Duke of Cornwall, receives 4s. for each hundred weight. The total produce of tin, for several years prior to 1792, has been 22,000 blocks, on an average, per year, which, at the price of ten guineas, will amount to 331,000l. A very small quantity of native gold has been found intermixed in the mines of this ore.

Of the copper mines, perhaps a tolerably fair estimate may be given by stating the produce at 40,000 tons weight which of pure copper yield about 4,700 tons.

The lead mines are now very little worked; they are principally situated in the neighbourhood of Hull Pool and Hull

Rose near Helstone, and some have been found to contain no inconsiderable portion of silver. A few iron mines are dispersed in the country; and at Endilion is a productive mine of antimony.

The miners have much better wages than the labourers in agriculture, and the competence resulting from this occasions early marriages and large families. On a narrow slip of barren country, where a very few hands would be required for the purposes of farming, a population to the reach of fifty or sixty thousand is supported, exclusively of the merchants, tradesmen, and artificers, which occupy Penzance, Redruth, Falmouth, Penryn, Truro, and St. Austle.

Every change in the condition of the miners of Cornwall, from the competition of Wales, must be severely felt by the farmers, for as I have hinted, the agriculture depends upon the markets, the markets upon the population, and the population on the state of the mines. Some instances of remarkable success might be adduced. Hull Virgin, in Guenap, in five weeks, threw up copper to the value of more than 15,000l; and the expence of labour very little exceeded 200l. in that period: yet there are many more blanks than prizes in this lottery of human affairs.

It would, Sir, be inconsistent with the nature and design of your work, were I to enter into more of these particulars, on which the fortune-hunter and the mineralogist would, perhaps, be equally inquisitive. You will, I fear, have thought it high time that I should proceed to those subjects which are comprized within the more narrow definition of agriculture.

Through the higher lands of this country, the superficial soil is a light black earth. On the tops and sides of mountains, it is very shallow, and the natural produce is a thin stunted heath. The second stratum is a cubical quartz; and the sub soil, is a whitish or yellowish loamy clay. Happily, by mixing these three strata, a soil is capable of being formed, suited to the growth of every species of grain. It is very desirable, that the miners should be encouraged to pursue this rational scheme of improvement on these grounds: their subterranean employment only occupies six or seven hours, they have, therefore, much leisure time, which cannot be more advantageously employed than in this direction of their natural industry.

In the vales adjacent to these high lands, are bogs, vulgarly called moors, that contain the rich sediment from the mountainous parts, which might be converted into valuable meadows. The observation does not rest on conjecture, Mr. Praed, of Travethoe, has adopted these improvements on a large scale, which will in time receive

the attention, and attract the admiration of the adjacent country.

Besides the above, there is a shelly or slatey soil, which is composed of the detritus of the softer species of schistus; and a great part of the county has soil of this kind. It produces good wheat and barley, and at Clowance, the seat of Sir John St. Aubin, it has been found to make a useful compost, when combined with the viscuous earths. In the district skirting Bodmyn Downs, and extending to the banks of the Tamar, this species of soil prevails, mixed with strata of reddish and hazle loams; and it is found very fertile, particularly as they are able to assist it by procuring lime from Plymouth, a facility they do not enjoy in the northern parts. The north, however, on the banks of the Alan and Camel, towards Padslow, and to the north-east toward Lanteglos, is justly esteemed the granary of Cornwall. A very rich tract of land may be discovered from Tregothan, the seat of Lord Falmouth; and Trewithen, the estate of Sir Cæsar Hawkins. Another on the river Hel, of the same character, will not escape the attention of the intelligent traveller.

The climate of Cornwall is mild, it is cooler in summer, and warmer in winter, than most other parts of England. Ice is so unusual in the latter season, that the refectories of the luxurious are often unsupplied for many successive years with this dainty of the epicure. Cornwall, from its situation, being open to the Atlantic, without the intervention of land to the coast of America, receives the whole force of the south-westerly winds, which have been observed to continue in England during four-fifths of the year. Hence it is difficult for plantations to thrive in exposed situations, but myrtles and many other plants, which in most districts are seldom seen out of the green-house, flourish here in the open air.

Every student in English history is informed of the Duchy of this county, conferred on Edward the Black Prince, with limitation afterwards to the first begotten sons and heirs apparent of the British Monarch. Hence has arisen a peculiarity in the tenures, which is more suited to discussion with the archaiologian than with the farmer. Passing over this subject, therefore, I shall only notice, that few private gentlemen possess a landed rental in this county of more than 3,000l. Some of your opulent correspondents will smile, when I assert, that 10l. or 15l. a year is an ordinary rent for a farm; and that 40l. a year is deemed a large interest. The leases are generally on lives: in the mining districts, they are mere cottage holdings, but some concerns of unusual magnitude, extend to 100l. and even to 200l. a year. What would these petty farmers think of the tenants of the Pelham

family in Sussex, twelve of whom pay annually 1,000l. a year each for the land they occupy.

Until the latter part of the reign of Elizabeth, the art of farming was unpractised and unknown in this county. The graziers of Devon and Somerset drove their beasts to the huts of these subterraneous savages, and supplied the people with the cattle thus fattened at their own doors. It will not, therefore, appear wonderful, that the improvements in agriculture should not have been so rapid as in other situations; but it is, perhaps, unaccountable, that the produce is at this time inferior to what it was when Camden, the famous Cornish antiquary, flourished. Perhaps the easiest way to resolve this difficulty, is by supposing some error in the account he has given, as he could not obtain the same assistance we now derive from political arithmetic and statistical disquisition.

The rotation of crops deserves little attention. Wheat is succeeded by barley or oats, as long as the land will bear grain: seeds are sown with the latter when it will sustain it no longer; and in grass it continues, according to the degree of its fertility, for five, six, eight, or ten years. For the wheat, they pare and burn the surface; the land is then dressed with the ashes, and a compost of sea-sand, earths, and road-drift. To this they throw straw, to collect the soil and moisture; and they add dung obtained from the farm-yard, or from the adjacent towns. When the land, from negligence or avarice, is urged too far by the corn-crops, it is reduced to a dry gritty substance, and is abandoned to furze and brambles for five and twenty or thirty years. The best farmers only take one crop of barley or oats, and then they lay the land down with grass-seeds, dressing it with dung and earth; and after three or four years it may be broken up again with considerable advantage. By cultivators of this description, turnips are often sown after wheat: these are manured as before noticed, and are succeeded by barley and grass-seeds. It is amusing to observe, into what gross mistakes some of your new, hot-headed projectors have fallen. Paring and burning, which is so often mentioned as a new discovery, has been long practised in Cornwall, and for 300 years has been the common expedient in the neighbouring county. I beg Mr. Editor, that when Katterfelto, and other wonder-working correspondents, shall offer to amuse us in your miscellany with these *discoveries*, you will have the goodness to exercise your wonted discretion, and reject their communications.

The farming implements in this county are of the most ponderous kind; and I am sorry to say, that Sir John St. Aubin, and even Mr. Praed, have conduced to this error. The former has an enormous plough, to which fourteen oxen and seven horses are attached, suited to the employment to

which the Roman Emperor devoted an instrument of this kind in the streets of Jerusalem. With this he mercilessly enters the bowels of the earth, to the depth of twenty or twenty two inches; and sometimes leaves her lacerated form unfit for the purposes of vegetation. The strong plough of Mr. Praed, is designed to throw on the surface the quartz stones of the sub-soil. Whenever it is necessary to exercise this sort of instrumental violence, the end would be much more conveniently attained by two operations, performed with different implements, and such is the method resorted to by the miners in the cultivation of their little crofts. Mr. Grosette, near Truro, has introduced the Yorkshire shim, which throws up the wood, and levels the ground with great expedition. Carts are neither used here, or in the neighbouring county for the purposes of agriculture; the manure and the produce is conveyed on the backs of mules and horses.

With respect to manures, I have already intimated, that from Plymouth lime may be conveyed to all convenient distances: this they burn with culm from Wales, as a preparation for wheat. But the manure which is peculiar to this county, is of a most excellent kind. It is a compost of sea-sand, bruised and decayed pilchards, and of bay-salt condemned by the officers as unfit for use. This, therefore, consists of salt, putrified fish and oil, and is sold to the farmers on very reasonable terms. After a dressing from this compost, ninety Winchester bushels of barley per acre, has frequently been produced; and seventy-five bushels is considered an ordinary crop.

I had, Sir, intended to make some further observations on potatoes, turnips, and many other articles of occasional produce in this county, but in the hope that some of your Cornish friends, who are better acquainted with the farming of particular districts than I can be, will afford information on these articles, I shall here conclude my observations.

I am, Sir, yours, &c.

April 12, 1804. CHOROGRAPHUS.

ON COWS AND MILK IN THE VICINITY OF THE BRITISH METROPOLIS.

To the Editor of the Agricultural Magazine.

SIR,

THE writer in your last Number, on the Agriculture of Westmoreland, makes a remark, *en passant*, on the London cow-keepers, which is not perfectly correct. I am sure, from the love of accurate information he possesses, he will not only excuse, but be thankful to me for setting him right on this subject. The error, such as it is, is the more

easily pardoned, because it was not necessarily connected with the object of his enquiry, and was only introduced, as I conceive, from his desire to impart every article of useful information with which he is acquainted.

The object of this paper is, to convey to your readers some intelligence on cows and their produce, in the county of Middlesex; and the sources from which the communication is supplied, are the productions of Messrs. Foot and Middleton, on the Agriculture of the County of Middlesex; and some observations, which are the result of my own practical experience.

The following is a pretty correct list of the number of cows, and the situation in which they are supported in the vicinity of the capital.

MIDDLESEX.		Brought forward,	7200
Tothill-fields, Knightsbridge	205	KENT.	
Edgware Road	550	Deptford, Rotherhithe, Greenland Dock, New Cross, Bermondsey	681
Paddington, Tottenham-court-road, Battle-bridge, Gray's-inn-lane, Bagnigge-wells, Islington	3950	SURREY.	
Hoxton	150	Lambeth, South Lambeth, Kennington Bridge, Coldharbour, Peckham, Peckham-Rye, Newington, Camberwell	619
Ratcliffe	205		
Mile-end	406		
Limehouse	180		
Poplar	70		
Bethnal-green	200		
Hackney	600		
Bromley	160		
Bow	100	Total	8,500
Shoreditch, Kingsland	200		
Odd cows	224		
	7,200		

The subsequent account of the treatment of this numerous collection of productive animals, must be interesting to every enquirer on the means of public subsistence in great capitals.

During the night, the cows are confined in stalls. About three o'clock in the morning, each has an half-bushel basket of grains. From four o'clock to half past six, they are

milked by the (retail) milk-dealers, who contract with the cow-keepers for the milk of a certain number of cows, from sixteen to eighteen-pence for eight quarts.* When the milking is finished, a bushel-basket of turnips is given to each cow; and very soon afterwards, they have an allotment, in the proportion of one-truss to ten cows, of the most grassy and soft meadow-hay, which had been the most early mown, and cured of the greenest colour. These several feedings are generally made before eight o'clock in the morning, at which time the cows are turned into the cow-yard.† About twelve o'clock, they are again confined to their stalls, and served with the same quantity of grains as they had in the morning. About half past one o'clock in the afternoon, the milking commences in the manner as before described, and continues till near three, when the cows are again served with the same quantity of turnips, and about an hour afterwards, with the same distribution of hay as before described.

This mode of feeding generally continues during the turnip season, which is from the month of September to the month of May. During the other months in the year, they are fed with grains, cabbages, tares, and the foregoing proportion of rowen, or second-cut meadow hay, and are continued to be fed and milked with the same regularity as before described, until they are turned out to grass, when they continue in the field all night; and even during this season, they are frequently fed with grains, which are kept sweet and eatable a considerable length of time, by being buried it pits made for that purpose. There are about ten bulls to a stock of three hundred cows. The calves are generally sent to Smithfield market at one, two, or three days old. Good milkers are kept four, five, six, and some times even seven years, and are then dried and fatted by the same kind of food as was given to them while they gave milk, and are then sold off to the butcher.‡

Some further remarks will be acceptable, perhaps, on the produce of cows, and the consumption of milk under the peculiar circumstances of this neighbourhood.

From the facts adduced in the preceding article, it appears that there are about 8,500 milch cows kept, for the purpose of

* The price varies with the distance, as, close to the town, eighteen pence; at a mile, or a mile and a half, seventeen pence; two or three miles, sixteen pence.

† The ground-work of cow-yards ought to be of lime rubbish, chalk, &c. which makes a sound bottom, prevents the cows from poaching the yard, and is easily scraped and kept clean.

‡ I remember hearing a cow-keeper say, about the year 1780, that he gave linseed jelly and distiller's wash, as part of the diet of his fattening cows.

supplying the metropolis and its environs with milk; and, according to the information received, the quantity given by each cow, on an average, is nine quarts a day, equal to, per annum, 3,285 quarts.

The calf takes part of the milk for the first two or three days, during which time it would not be saleable; and there is a falling off for a few days before the cow calves: these things occasion a deduction of about eighty-five quarts, leaving the saleable produce of each cow 3,200 quarts, which, at the medium price of seventeen pence, for eight quarts, amounts to..... £28 6 8

To which sum add for a calf, at two or three days old, from 20s to 30s. the medium is about..... 1 3 4

And it gives the total annual produce per cow.... £29 10 1

which on 8,500 cows, amounts to 250,750l. per annum.

The cow-keepers feed their cattle very high, in order to their producing the greatest possible quantity of milk.

The expence is nearly as follows:

Turnips, 14 bushels per week each cow, at 2¼d per bushel, is.....	0	2	11
Grains, 7 ditto, at 2¾d per bushel	0	1	7¼
Hay, 1 truss, at 4-10ths per ditto, at 1s. 9d. per truss	0	2	*5¼
	0	6	11½
Et cæteras	0	0	0½
The expences of keeping a cow one week, is....	0	7	0

And per annum, 18l. 4s. which taken from 29l. 10s. (the produce, as before stated) leaves 11l. 4s. for interest of stock, losses in cattle, the hire or support of horses and waggons, rent of buildings, attendance and profit.†

The consumers pay three-pence halfpenny per quart to the retailers. If the latter were to sell the milk pure and una-

* This may, perhaps, be deemed a low price to put the hay at, but it will not appear to be so, if we take into the account, that the cow-keepers mow their land two or three times in a season, as their object is to procure the most grassy and soft hay they can. Hay of this kind would scarcely be saleable at market.

† The late Mr. Harper, of Bankhall, near Liverpool, made the following remark on the produce of a cow, and the expence of keeping her. "I have been informed by an industrious cow keeper in Liverpool, that his cows average nine quarts of milk per day all the year through, which is sold at two-pence per quart, with the advantage of selling cream. But then, he says, there is a discount to be made: as, when the summer months come in, there is often a great flow of milk comes out of the country, which reduces

dulterated at this price, it would yield them a profit of 64l. 14s. per cent. But, in order to discover the actual profit of the retailers, we must add six-pence for short measure and the extraneous articles mixed with it, which increases 2s. 4d., the usual price of eight quarts, to 2s. 10d; and, as it costs them only 1s. 5d., there remains for labour and profit 100 per cent. Thus the retailers clear 28l. 6s. 8d. by every cow. On the whole, they divide among them the unreasonably large sum of 240,833l., and the sum paid for milk amounts to 481,666l.

When the families of fashion are in town for the winter season, the consumption and consequent deterioration of milk are at the highest. During the summer months, when such families are, for the most part in the country, the milk may, probably, be of rather a better quality. The cream is taken from so much of it as remains unsold, and made into fresh butter for the London markets. The butter-milk is given to the hogs.

The milk is always given in its genuine state to the retail dealers; and as it is sold to them by the cow-keepers after the rate of two pence and one-eighth of a penny *per* quart, and is retailed by them at three pence halfpenny *per* quart, the profit is surely so large as ought to prevent even the smallest adulteration. But, when it is considered how greatly it is reduced by water, and impregnated with worse ingredients, it is much to be lamented that no method has yet been devised to put a stop to the many scandalous frauds and impositions in general practice with regard to this very necessary article of human subsistence *.

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reduces the average both of milk and cream to two-pence per quart the year through.

To 3235 quarts of milk, at two-pence per quart –			£27 7 6
To the average keep of a cow in grains, &c. for one year, at 4s. 6d. per week – –	11 14 0		
To 160 ſtone of hay, at 8d. per ſtone –	5 6 8		
To 16 weeks grass, at 3s. 6d. per week –	2 16 8		
Together			19 16 8
Remains			£7 10 10

for interest of stock, losses in cattle, and profit."

By this account it appears, that the difference of the profit of a cow at Liverpool or London, is not greater than might be expected. The account states the produce at nine quarts per day all the year round; and I think the produce in London will at least be as high as at Liverpool.

* Not ſatisfied with the profit here stated, which, conſidering the difference of meaſure, is above 100 per cent. It is a common practice with the retailers of this uſeful article to carry the milk firſt home to their own houſes, where it is ſet up for half a day, when the cream is taken from it, at leaſt all that comes up in that time, and it is then ſold for new milk; by which means, what is delivered in the morning is no other than the milk of

Five or six men only are employed in attending near three hundred cows. As one woman cannot milk more than eight or nine cows twice a day, that part of the business would, necessarily, be attended with considerable expence to the cow-keeper, were it not that the retailer, as before observed, agrees for the produce of a certain number of cows, and takes the labour and expence of milking on himself.

Every cow-house is provided with a milk-room (where the milk is measured and served out by the cow-keeper,) and this room is mostly furnished with a pump, to which the retail dealers apply in rotation, not secretly, but openly before any person that may be standing by, from which they pump water into the milk vessels at their discretion. The pump is placed there expressly for that purpose, and, indeed, is seldom used for any other. A considerable cow-keeper in Surry has a pump of this kind, which goes by the name of the *famous black cow*, (from the circumstance of its being painted black) and is said to yield more than all the rest put together.

Where such a pump is not provided for them, things are much worse; for, in that case, the retailers are not even careful to use *clean* water. Some of them have been seen to dip their pails in a common horse trough, and what is still more disgusting, though equally true, one cow-house happens to stand close to the edge of a stream, into which runs much of the dung, and most of the urine of the cows; and even in this stream, so foully impregnated, they have been observed to dip their pails.

A cow-keeper informs me, that the retail milk dealers are, for the most part, the refuse of other employments; possessing neither character, decency of manners, nor cleanliness. No person could possibly drink of the milk were they fully acquainted with the filthy manners of these dealers in it.

The same cow-keeper suggests a remedy for these abuses, that it would be highly proper for every retail milk dealer to be obliged to take out an annual license from the magistrates; which license should be granted only to such as could produce

the preceding afternoon deprived of the cream it throws up by ſtanding during that time. By this means a farther conſiderable profit accrues to the retailer, and the milk is greatly reduced in point of ſtrength and quality. This cream, poor as it is, they again mix with flour, chalk, and, perhaps, more baneful ingredients, and yet it finds a ready market in the metropolis. It is a matter of ſurprize, that in the city of London, ſo long and ſo deſervedly famous for the attention and vigilance of its magiſtrates in the conduct and regulation of the markets, no notice has hitherto been taken of, or any means adopted to prevent, the abuſes ſo generally and juſtly complained of in an article, the conſumption of which, in London and its environs, is greater than in half the cities of Europe. Milk has always been a favourite part of the food of Britons, and, in a great and populous city, it is highly conducive to the health of the inhabitants.

a certificate of good conduct, signed by the cow-keeper and a certain number of their customers; and also of their being sworn to sell the milk pure and unadulterated.

Such are the facts which have been collected on this subject, and the remarks which they have very naturally suggested. Probably, when your correspondent Chorographus shall treat us with an account of the agriculture of Middlesex, these explanations will save him some trouble. He concludes his last letter with an extract from a fugitive piece I before quoted, in which he tells us,

"I measure time by its employment,
"And only value life for life's enjoyment."

When this volatile correspondent of yours has attained my graver years, and has discovered how much of the bustle and activity of life terminates in vacuity and disappointment, he will, probably, acknowledge some other criterion by which he will estimate the pleasures of existence, than merely the comparative velocity with which objects are reflected on the pellucid mirror of the mind.

I am, Sir, yours, &c.

April 15, 1804. TOPOGRAPHUS.

ACCOUNT OF AN EXPERIMENT ON THE GENERATION OF YEAST, MADE UNDER THE INSPECTION OF THE COMMITTEE OF CHEMISTRY OF THE SOCIETY OF ARTS, MANUFACTURES, AND COMMERCE, &c.

To the Editor of the Agricultural Magazine.

SIR,

THE Society of Arts, Manufactures, and Commerce, had given notice of a reward for a method of generating yeast. The subsequent particulars are from one of the most successful experiments, made under the inspection of the Committee of Chemistry of that Society. I have supposed, from some late papers which have appeared in your Magazine on this subject, that you would consider the matter deserving a place in your useful work.

Four quarts of ground malt were put into a new stone-ware vessel, and mashed, with about an equal quantity of hot water, in the usual manner for brewing.

When the mash had stood about an hour, the wort was drawn off, and three quarts of boiling warter poured on the grains; when this had stood a due time, the liquor was suffered to run off, and the whole liquor boiled half an hour; being then set to cool, it was poured clear from the sediment, and then put in a room where the heat was regularly kept up to summer heat, or nearly 80 of Fahrenheit's thermometer.

It stood in this degree of heat till some signs of fermentation appeared on the surface; which came on in about three days.

Another brewing was then made, as above described; and when of a due heat, stirred into the former liquor. In about twenty four hours, some yeast appeared, and another brewing was then made; and, when of a due heat, mixed with the two former ones and well beat in, the heat being still kept up to the degree abovementioned; in about two days more, five ounces of excellent yeast were collected from the surface of the liquor.

Some of this yeast being mixed with a proper proportion of flour, water, and salt, answered all the purposes intended for bread; and might certainly have been equally well applied to brewing in the common method. In fine, being pure and good yeast, it will answer all the intentions of that useful article.

Adelphi,
April 7, 1804.

I am, Sir, yours, &c.

P. C.

VETERINARY ART. LETTER VI.

ON THE POLL-EVIL, IN CONTINUATION; ON THE SLOW AND SPEEDY CUT, SAND-CRACKS, FALSE QUARTERS; AND THE RUNNING-THRUSH.

To the Editor of the Agricultural Magazine.

SIR,

I CONCLUDED my last letter with a new method of treatment under the Poll-evil; I will now explain the usual way, and make some observations on the comparative merit of these two modes of cure.

POLL-EVIL.

When repellants are ineffectual, and the tumour, from its external appearance, indicates the formation of matter, ripening poultices (to which I have before adverted) must be used until the swelling burst of itself, or the knife be safely and dexterously applied. Now the farrier must attend to the quality of the matter emitted, for if it flow in great quantities, resemble glue, and be of an oily consistence, it will require a second incision, especially if any cavities be discovered with the probe. After this, the following wash should be used hot, which may be made sharper by adding more of the vitriolic ingredient; yet, if the flesh be luxuriant, it should be pared down with a knife before the wash is employed.

R.—Vinegar, or spirit of wine, half a pint; white vitriol dissolved in spring-water, half an ounce; tincture of myrrh, four ounces; when this has been used, the aperture may be filled up with tow soaked in it.

It is obvious, that the employment of the knife, which may be here necessary, is very dangerous in unskilful hands, and yet it must be resorted to if the tumour do not quickly burst, for the matter will acquire a most ichorous, coroding quality, and will produce one of the largest and most sordid fistulous wounds with which the animal can be afflicted, and even the vertebræ of the neck will be sometimes affected by this powerful solvent. By the seton, which was the method first recommended, this peril is avoided. The precise time of using the seton is not very material, but the exact day when the tumour should be opened, is of great consequence, for the whole object of the operation may be disappointed if it be neglected. Some skill in the anatomy of the animal is likewise required, for the greatest care must be taken to avoid injuring the tendinous legament that runs along the neck; and when the abcess extend on both sides, two apertures must be made, that the ligament may remain undivided. Another inconvenience in the latter method is, that to the form and situation of the incision the operator does not properly attend. It is commonly opened the whole length of the tumour on the upper part, hence the matter within it cannot be discharged, but being retained in the bottom of the wound, is exposed to external air, and the destructive qualities of this corosive fluid are increased, and may soon become fatal. In the former method, a constant discharge is procured, in a situation most likely to assist the exit of the matter from the seat of the disorder.

I will only mention one objection further to the last method, and then give an example in which both expedients have been resorted to.

According to the latter mode of treatment, I have noticed a great quantity of fungous flesh is soon produced, that requires to be repeatedly extirpated with the knife, which not only exposes the horse to excrutiating torture from the frequent indiscretion of the operator, but occasions the beast to be greatly disfigured, so as to be rendered unfit for any purpose of amusement or parade, and to be for ever consigned to starvation and drudgery. The loss of substance sustained by cutting away so much of the flesh, neither decreases his powers or lessens his spirit, but entirely deprives him of that beautiful exterior, on which these unfortunate animals depend so much for the blessings of existence.

Mr. Clarke of Edinburgh attended the coach-horse of a nobleman in that neighbourhood, which had been afflicted with the poll-evil. The tumour had been opened on one side in a very superficial manner, by a farrier in the country, before the matter in it was sufficiently digested. After applying a few emollient poultices, in order to ripen it, a strong seton-

needle was introduced at the upper part of it, almost close to the mane, passing it through the bottom of the tumour, which was very deep, the needle was brought out through the sound muscular parts below the tumour, in order to procure a sloping orifice for the matter to run freely off. The same operation was likewise performed on the opposite side, beginning near the mane and finishing in the same manner. In a few weeks the cure was completed. The horse ran for several years in the nobleman's carriage, without the smallest vestige of his former disorder.

THE SLOW AND SPEEDY CUT.

Inflammation, swelling, and lameness, are often occasioned by an awkward trick acquired, or some natural defect in the animal, by which he strikes the shoe of one leg against the fetlock or knee of the other. When he wounds the fetlock, it is called the slow-cut; when the knee, the speedy cut; and both are very often caused by mismanagement in the shoeing. The hoofs by this injudicious shoeing, are suffered to grow too large and broad, the shoe often projects over the inside edge of the hoof; and the rivets of the nails frequently rise above the surface of the horn. But sometimes a natural defect is the cause of this evil. Some horses cross their legs in trotting; some have the clownish form, and turn in their toes; others turn them outwards, and stand upon their limbs, as the jockies phrase it, like a dancing master. In these cases, horses will be liable to cut, and where we have to counteract nature, the cure is very difficult. But the habit of cutting most commonly proceeds from the mismanagement to which I have alluded; or from another sort of inattention, equally blameable, the animal being over weighed, or over fatigued, or, in the stable phrase, worked down. As the cure in such cases depends on the discretion and humanity of the owners, I shall recommend those qualities to them; and in addition to these, give the best general rule with which I am acquainted for checking this habit in horses, viz.

"To keep their hoofs round and short at the toes, and from growing too large and broad; to observe that the shoe does not project over the inside edge of the hoof; that the clenches or rivets of the nails on the outer surface or crust are smooth; and above all, that the shoe be made light, well-worked, and properly proportioned to the size of the foot."

SAND-CRACKS AND FALSE QUARTERS.

Both these disorders being much of the same kind, I shall make no division of the subject where so little difference exists; indeed they may be only considered as denoting various degrees of the same complaint. It is a chink in the side of the hoof, usually taking the direction of the horny fibres, and

generally extending from the coronet to the base. This disorder is frequently treated as of little consequence; yet the fact is, that no radical cure can possibly take place. Nature being deprived of her support, it is necessary to give her artificial assistance, and what is called a bar-shoe is provided, to support the weight of the animal, without pressing too violently upon the seat of the complaint. When the horse is employed on the road, sand and gravel enter the cavity, and are extremely difficult to be extracted, but if they are not carefully withdrawn, corosive matter will be formed underneath the hoof, and a most inveterate ulcer will be produced. The first step necessary is, to endeavour to keep the part perfectly clean, and if, in consequence of any neglect, an extreme tenderness should appear (of which the horse will not fail to convince the person who examines him, on the application of the probe) an emolient poultice must be applied, if in consequence of the use of the knife, to render the crack smooth, and thereby to prevent the lodgment of sand and gravel, proud flesh should be generated; this luxuriance may be corrected by applying to it the following preparation.

R.—Blue vitriol burnt, two drams; corrosive sublimate, one dram, rubbed into powder.

RUNNING THRUSH.

This disorder is usually called by farriers the running frush; and instead of being, as the last complaint, in the quarter, it is situated in the middle of the frog; but like the last, it must be generally considered incurable. Sand cracks are usually confined to one foot, but this, although more commonly affecting the fore feet, as it arises from a foul constitution, frequently infects all the feet, and then the only consolation under the complaint is, that it may assist in draining off corrupt humours. Those who have carefully observed the foot of this animal, have seen the utility of the division of the heel, which nature has provided. When the horse presses his heel upon the ground, the frog expands and the heel widens, and by this means his step is rendered firm and secure. It is one of the advantages of the new method of shoeing I have before recommended, that the facility of this expansion is preserved; but in the old method, the heels are constantly confined, by which the frog is pressed on both sides, by the crust of the heels being forced into the state of contact, and this is almost the constant cause of the complaint. When the disorder proceeds from heels which are contracted, either by nature or mismanagement, no cure can be expected without removing the original cause. The hoofs should be kept moist and cool, flat shoes should be used, from which the hoofs at least can receive no bad shape, and the frog must be permitted

to enlarge and rest upon the ground. To counteract the effect of bad shoeing, in this case, it will be sometimes sufficient to turn the animal to grass for three or four months without shoes, but when he returns again to usefulness, the utmost care should be taken that no injudicious shoeing renew the complaint.

Under the disorder of the running thrush, internal remedies must not be neglected. Bleeding should first be resorted to, and afterwards a course of aperients, whether purges or diuretics will be necessary. When the horse returns home from his work, the diseased frog must be washed perfectly clean, and the following dressing, which has been called Mel. Egyptiacum, should be applied.

R.—Verdigris, in fine powder, 2 oz.; honey, 6 oz.; vinegar, 4 oz.; boil them over a gentle fire till they have acquired a reddish colour.

The ignorance of persons who undertake the cure of horses, has occasioned them frequently to mistake a greasy exudation from the protuberances of the heels for the running thrush. The cure of the former, although not within my present subject of enquiry, is familiar to every practitioner of the new school, whilst the most skilful professor ineffectually applies all the resources of his art to the complete and radical cure of the latter.

Westminster,
April 9, 1804.

I am, Sir, yours, &c.
VETERINARIUS.

ACCOUNT OF EXPERIMENTS IN CULTIVATING RICE IN THE VICINITY OF LONDON. BY SIR JOSEPH BANKS.

To the Editor of the Agricultural Magazine.

SIR,

RICE is an article of so much consequence, that I think any experiments upon it deserving attention. The following were made by Sir Joseph Banks, at an estate in the vicinity of London, on which he succeeds my uncle. A short description of the plant may, perhaps, facilitate the comprehension of a subject which has become more curious, because rice has been considered too tender to be produced in these northern countries, without the assistance of artificial heat.

Rice, or oryza, in Botany, is a genus of the hexandria digynia class. Its characters are these: the chaff is small, acute-pointed, having two valves, nearly equal, inclosing a single flower; the petal has two valves, which are boat-shaped, ending in a beard or awn; it has a two-leaved nectarium, and six hairy stamina, the length of the petal terminated by summits, bifid at their base, and a turbinated germen,

supporting two reflexed hairy styles, crowned by feathered sigmas; the germen afterward becomes one large, oblong, compressed seed, having two channels on each side, sitting on the petal of the flower.

"The dry or mountain rice, which I received last year from the Board of Agriculture, for trial, had been procured at a considerable expence by Sir John Murray, from the neighbourhood of Serinagar, a city in India, situated at the foot of Mount Imaus, where snow lies till late in the Spring; and where the climate has been supposed to resemble that of England sufficiently to make it probable, that the vegetable productions of the one, would equally succeed in the other country; I consider it as a duty owing to the patriotic exertions of Sir John, to give your Lordship and the Board, some account of the result of the trial of it, made by me at Spring-Grove, near Hounslow, in Middlesex.

"It was not till near the end of May, when the samples, being of six sorts, were delivered out by the Board, and they were sown immediately, on the 21st day of that month, on six small beds in a garden, under the shelter of a pale, in a South exposure.

"The grains were sown very thin, in order that the progress of their vegetation might be better noted; in a very few days they appeared above ground. The season being warm, with a moderate supply of rain, it was seldom necessary to water them; however, when they appeared to flap, which generally happened after three or four dry days had taken place, they were well sprinkled with a watering pot.

"In less than a month, they had grown several inches high; each sort had acquired an appearance very different from the rest; some were pale green, and had broader blades; some were deeper coloured, and narrower in the blade; and one sort had a brown hue on the whole plant; and the bases of the leaves in this kind were nearly black.

"During the month of August, they tillowed much more than I have observed any other corn to do; so much so, that although they had been sown very thin, they became a dense, compact bed of plants; the blades in some of the kinds standing as close or closer to each other, than the thickest sown barley ever does.

At the close of the month, the blades were from a foot to eighteen inches high; the plants continued to tillow, each root having by this time produced from ten to twenty off-sets, but no symptom of a rising stem was at all observable.

In the middle of September, they had still continued to tillow, and the blades to lengthen, so that some of them were at least two feet long. As the frosts of the Autumn were nearly now approaching, it became an object of some import-

ance to examine the state in which the plants really were, in order to ascertain the probability of their having produced ears, or possibly of their having ripened corn, if they had been sown a month or two earlier. The most careful inspection was therefore made by dissection, but no traces could be found of the rudiment of a joint beginning to form itself on the crown of the root, or of the embryo of the glumes of the ear, which in all kinds of corn, are first discernable in that part.

"About this period I was taken ill, and obliged to desist from observing their future progress; but a frost soon after followed, which cut the blade down to the earth, and at once destroyed all hopes of these kinds of rice producing grain in our climate; the quantity of the blade was however so uncommonly great, that it is not impossible it might be advantageous to sow it as food for cattle, for a very large proportion of stock might certainly be maintained upon an acre of it.

"Before the frost set in, I had ordered a tuft of each kind of the rice to be transplanted into a pot, and placed in a hothouse, in order, if possible, to ascertain the natural period of this grain; whether, like winter corn, it requires eight or nine months to come to perfection, or, like our Lent corn, arrives at the same period in five or six; but all of these died, notwithstanding great attention was paid to them: some seed, however, which I had given to Mr. Lambert, succeeded better; it was sown in his hot house in the month of June, where it throve well, but did not produce ears till near Christmas, a period of seven months, from whence it is probable the grain would have ripened in less than two months from the time the ear appeared. It is easy to deduce, that in the neighbourhood of Serinagur, these kinds of rice are either sown as winter corn, or the climate there is far better suited to promote the quick progress of vegetation than ours is. It was, when it produced ears, about three feet and a half high, and some of the stems had five joints, including the radical one: had it been in a more suitable climate, it would certainly have grown taller, for the flowers dropped off without producing seed.

I am, Sir, yours, &c.

J. D. C.

Little Smith-street,
College-street, Westminster,
April 6, 1804.

OBSERVATIONS ON THE SELECTION OF ANIMALS FOR LABOUR, AND OTHER MATTERS. IN REPLY TO AGRICOLA NORFOLCIENSIS.

To the Editor of the Agricultural Magazine.

SIR, *March* 31, 1804.

I HAVE this day received your Magazine for last month, in which it is stated by Agricola Norfolciensis, that Agricola Meridionalis and I have worked our horses and oxen "to the bone in the dreadful contest for superiority, and that it is high time to unyoke," and my two last letters on animal labour, will shew that *with respect to "unyoking,"* my opinion is not much at variance with his. I must, however, beg leave to observe, that his assertion, that I have "worked my horses to the bone" is not well founded, for during the whole of the contest, I contend, that they were continued in good health and condition—vigorous and full of mettle—*and that two of them performed more work on much less food, and were much more profitable, both to their owner and the country, than my adversary's oxen, allowing him either two, four, six, or eight of them to a team.* After considering this, Sir, and your correspondent's words, "that A. M. and I have left the subject where we found it," your readers will be enabled to form a just opinion as to the *correctness* of his statement or the *fulfilment of his prophecy.* Perhaps I do not give to the words in the last quotation that interpretation he intended them to bear, and will, therefore, be glad if he will explain them, and point out such parts of my comparative statement as he deems incorrect; for though it may be high time for A. M. and I to "unyoke," yet as he (A N.) expressly admits the importance of the subject, and seems to entertain an opinion, that the controversy is still undecided, it may be equally expedient in him to employ those abilities with which he is blessed, in pointing out our errors in the contest, and in forming our judgment on the comparative merits of horses and oxen in farm labour. If I am not mistaken, you stated in your number for August last, that this subject could not be too much investigated. In your Magazine for January, Chorographus says, "I shall see with pleasure its revival in your Miscellany." I am, therefore surprised, and rather dissatisfied, that you have not published the letter you say you have received from "a Northern Farmer," for I am anxious to see the opinions of new advocates in the cause; and as I presume Norfolciensis would not have given you his statement relative to the contest between A. M. and I, without being ready and willing to advance *new* arguments, as well as to point out our errors, I have to request that you'll publish this letter from the new advocate, ("a Northern Farmer") as soon as you can. Between

him and A. N. there may be a clashing of opinions, and your readers will probably be enlightened by the emission of sparks from the collision. It has been asserted by some *critics*, that when farmers sit down to write, their ideas are confused by the diversified scenes they so frequently notice in the course of their business; such as the thundering of the thrashing mill, the bellowing of the cattle, the grunting and yelling of the swine, the bleating of the sheep, the movements of the ploughs, harrows, &c. &c. And, Mr. Editor, without the trouble of enquiring as to the *reasons*, it is a deplorable truth, evinced by the writings of too many of the fraternity, that we too frequently labour under a *crowd* of ideas, and wander from the subject of discussion. See what Norfolciensis has stated as to A. M. and I: "Seriously," says he, "both parties have wasted their time and paper on much irrelevant matter," and "taken up that room in your collection which might be filled with more valuable matter." Here, however, I beg to remark, that the subject I investigated was, the ox and horse question, *connected with the corn trade, and other important matters within the scope of an agricultural publication*; and that, perhaps, the "irrelevant matter" is not so great as he at first sight imagined. In its defence, I offer no remarks; but that introduced by my oponent was able, entertaining, and instructive, much more so, indeed, than that part of your Magazine called "National Transactions," for which newspapers are the most proper vehicles: and I cannot avoid observing, that A. N.'s letters do not furnish so great a supply of "more valuable matter" as would fill the chasm occasioned by omitting both that article and the controversy regarding horses and oxen.

When the time arrives, Mr. Editor, (and probably it is at no great distance) that the communications of your correspondents are too numerous for publishing in proper time, you will no doubt request that they will shorten them; that they will "wander" less, or introduce no "irrelevant matter." Then, Sir, perhaps, you will have reason to notice the latter description of matter, not only to A. M. and I, but likewise to Agricola Norfolciensis—*to that very gentleman who is rather too keenly censuring others.* As a proof that there will be occasion for this, *if his future letters do not differ from the past*, I must take the liberty of making a few remarks on those in your last, and your October number. In one of these, he begins with the New Farmer's Calendar, and expresses his displeasure at the severity of Mr. Lawrence on "the petty prejudices of our plain and honest forefathers, &c.; next he arrives at "Mr. Marshall's miraculous barberry bush in Norfolk;" then he enters upon the mill-dew in wheat, and its deplorable effects in that county last year. After dwelling for some time

time upon this, which is the principal subject of his letter, he wisely concludes his remarks upon it, by stating the position of the bush, and that of the damaged wheat; by stating the *fact*, without "daring" to comment upon it. He then, unmercifully mounts my horses, *which he says had been worked to "the bone;"* and enquiring as he passes along, whether a shim is a parallelogram or a triangle, and calling upon Mr. Lester for the aid of his implements, rides as fast as they could carry him from "the direction of the (dreadful) blast" of the Norfolk bush, through the fens and hedges of Cambridge and Lincolnshire, to the city of York, where he gives excellent advice to the celebrated Dr. Hunter, touching the satire of "Democritus," and hopes that he will permit his valuable opinions on agriculture, compost and other manures, to be widely disseminated for the advantage of mankind. In the other, *in one letter*, he writes on drill machines, shims, patents, the price of drill machines, lucerne, sain-foil, vetches, Mr. Sanders and his pigs,* (which would be more dreadful and injurious than Bonaparte and his whole army) the cultivation of Swedish turnips, mildew on wheat, *but not on the miraculous "barberry bush,"* and on tithes. From the pens of others, perhaps, A. N. would have reckoned the matter in these letters a *farrago*, and a poor contribution towards compensating your Readers for their "eighteen pence." From his own, however, he doubtless deemed it important "information;" and in truth, Sir, it is neither the importance of the matter he sends you, nor his manner of communicating it, that I am calling in question, for I have read his letters in your Magazine with pleasure and advantage, and consider him as a valuable and able correspondent. I am merely endeavouring to show, that he has imputed to Agricola Meridionalis and I, *and censured us for*, conduct similar to that he has himself pursued, and that he has not attended to the precept of the great master in morals, who said, "cast out first the beam out of thine own eye, and then shalt thou see clearly to pull out the mote that is in thy brother's eye." *Ardently* requesting that you will publish this letter in your next Magazine,

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

* In this part of the country there are already far too many of these animals, and if Mr. Saunder's mode of breeding them in millions upon millions, and of feeding them almoft entirely on *air* were purfued, the prices of beef, mutton, and grain would fpeedily decline upwards of 50 per cent. from which the most ruinous consequences would flow. For God's fake, Sir, take no part in publishing his *fcheme* under the preſent circumſtances of the country.

ON THE ALNWICK ESTATE, &c.

To the Editor of the Agricultural Magazine.

SIR, *April* 10, 1804.

YOUR Correspondent, "A Caledonian," has stated that "I reside in the neighbourhood of Alnwick Castle, among the opulent farmers, tenants of the Duke of Northumberland." He is, however, mistaken as to my place of residence, and I am sorry to say, that I believe he has likewise been misinformed as to the opulence of the occupiers of the vast estate of that wealthy and worthy nobleman. There are among them a considerable number who are highly respectable in every point of view, but as *a body*, they are not distinguished for opulence.

There have been many warm and important disputes among rural and political economists, concerning the comparative advantages of large and small farms, and of leases and tenants at will, but even those who have contended for the superiority of these tenants and small farms, *in a national point of view*, have, always, I think, admitted that under such circumstances, farmers cannot enjoy the advantage of "opulence;" and when "A Caledonian" is informed that his Grace of Northumberland's tillage farms are generally small, and in the occupation of tenants at will, he will, probably, retract his opinion as to their wealth. The mode pursued on this estate, of letting by written proposals, is also unfavourable to the tenantry, and will, I conceive, be, ultimately, detrimental to the landlords and the community in any situation.

Any person possessing a great stake in a country must be anxious for its prosperity *on the score of interest alone*; but, Sir, the Duke of Northumberland's anxiety for the prosperity of the British empire, proceeds principally from a nobler source—*from patriotism*. It was this which led him, *when heir apparent to the greatest fortune in the kingdom*, into actual service in the army, in the seven years war, and to cross the Atlantic to fight the battles of his country in America, where he was very actively engaged in much important service; and at this momentous period, it ought to be written in letters of gold in every city and town in the British dominions, that he now supports two regiments of excellent volunteer infantry and one of cavalry, without any expence to Government, except that for arms and ammunition. His benevolence is great in proportion to the wants of his fellow-creatures, and he has frequently distributed from five to seven thousand pounds a year in charity. A warm and indefatigable advocate for the cottage system, he has caused great numbers of houses of this description to be erected in or near almost every village in

the wide range of his vast domains; the quantity of land assigned to each house is from about one to five acres, on moderate terms. On the excellence and vast importance of this system, in promoting the comfort and happiness of great numbers of the lower orders of the people, and in increasing the population and real strength of the kingdom, it would be a waste of words to expatiate. I must, however, take the liberty of remarking, that when his Grace extended his arm to the married servants of farmers (three-fourths of whose wages are, in most situations in this part of the country, paid in corn, milk,* wool, potatoes, and cabbage,) he perhaps extended it farther than was consistent with the convenience of his tenants, and the proper management of his lands. Brought up a soldier, his Grace is extremely regular, accurate, and methodical in all his concerns, and much more the man of business than of pleasure. What then, it will be asked by a numerous and respectable body of rural economists, is the reason that his vast estate is so ill managed *as to be divided into small farms, and let to tenants at will?* In this happy country, every man has the power of conducting his affairs in the manner he most approves; and, I trust, enough has already been stated to shew, that the mode pursued by the Duke of Northumberland is that which his Grace deems best calculated to promote the interests of his country. It is a great misfortune to the County of Northumberland, that this distinguished nobleman has long laboured under so severe an indisposition (principally gout) as to be totally incapacitated from paying that attention to rural affairs, to which I have heard he is much inclined. If his health had permitted him to persevere in that system which he adopted about ten or twelve years ago, of residing principally at Alnwick Castle, and frequently viewing almost all parts of his estates, and the adjoining country, his judgment and penetration would soon have enabled him to discover the defective system pursued in their management, and that he has been misled by the suggestions of *theorists*; and, perhaps, in some measure, by some *arbitrary* landholders. A more striking proof of the mismanagement of his estates cannot be adduced, than that obtained by comparing their present and past rentals with those of other *large* estates in the county, particularly those of the Earl of Tankerville and Sir Henry Grey, Bart.† *which have long been let in large farms to able and substantial tenants, under the security of leases for twenty one years.* Within

* A cow, (sometimes two) and a swine and poultry, are allowed to each family; also a small garden.

† Only brother of General Lord Grey, the father of that inflexible and able patriot, the celebrated member for Northumberland, who will probably inherit this fine estate.

a space of time not much exceeding fifteen years, the two latter have increased in value, in the ratio of about 6 to 10, if not in that of 1 to 2, whilst those of the Duke of Northumberland have increased in about that of 3 to 4, *if my information can be depended upon,* and I believe it is pretty correct.

Within the last four or five years, rents have increased in this quarter of the kingdom in a still greater proportion, as the table below will prove.

Farms.	Late Rents.	Term let for.	Present Rents.	Term let for.
	£		£	
1	350 *per an.*	21 years	700 *per an.*	21 years
2	270 ——	21 ——	630 ——	16 ——
3	200 ——	21 ——	600 ——	21 ——
4	300 ——	21 ——	900 nearly	21 ——
5	300 ——	21 ——	800 ——	21 ——
6	360 ——	21 ——	1160 ——	21 ——
7	300 ——	21 ——	1000 ——	19 ——
8	270 ——	21 ——	1100 ——	21 ——
9	300 ——	21 ——	1200 ——	19 ——

These farms are situated within a circle of about 15 to 20 miles broad, or little more, comprising part of the counties of Northumberland, Berwick, and Roxburgh, they are all large, and at the expiration of the late leases were not divided and subdivided according to the custom of too many proprietors, but nearly all let without diminution in the quantity of land. In most of them, the best soils cost the tenants from 40s. to upwards of 50s an acre, and the inferior lands in proportion,* though the greatest part is subject to tithe of almost all kinds, and to parliamentary and parochial taxes, &c. and though the prices of grain in the district are generally a good deal lower than in any other in the kingdom. How far farming can become "opulent" under these circumstances (the soil being much below the first quality) your experienced readers will easily determine; and I presume, that if they can attain that state, your correspondent, "A Caledonian," will believe their merit very great, and that their landlords and the community will owe them a vast debt of gratitude. It appears, however, from what he has stated as to "these large *engrossers* of English territory," &c. that he considers large farms detrimental to the interests of the country, and that, *as I some time ago expressed an opposite opinion,* he has thrown the *gauntlet* at me.

* One of these farms is, on the average, 43s. an acre.

The subject, Sir, is an important one, and if the letters I have lately addressed to you on the rotation of crops and summer fallowing, do not bring forward such a discussion as may render the necessary attention to him inconsistent with my avocations, *I accept the challenge.* I am decidedly of opinion that English farms are frequently *much too small*, and that if they were enlarged, and occupied under the security of leases for fifteen to twenty-five years, much greater capital and abilities would be employed in our agriculture, and that all parties concerned, the landlord, the tenants, and the community, would be benefited in a much greater degree than under the present systems. The ancient Caledonians, Mr. Editor, were the only people in Europe who withstood the mighty forces of ancient Rome. Their descendants not only inherit the valorous and unconquerable spirit of their ancestors, but are eminently distinguished for knowledge in the important art of rural economy; I should, therefore, hesitate extremely to contend with one of *that race* either in the field of Mars or Ceres, were I not *confident* of the superiority of my cause, that this Caledonian differs from most of his countrymen respecting large farms, and that I shall be able to draw such materials from the *practice* of the northern side of the Picts wall, as well as from that of several landholders in various parts of England, as will be highly conducive to my success in the contest.

That this gentleman is really a Caledonian, I must not doubt: I cannot help stating, however, that after reading that part of his letter contained in p. 102 of your last number, I was forcibly struck with its similarity to the stile and manner of your correspondent Agricola Meridionalis, and glancing at the word "Lanerk" in the opposite page, e're I saw the signature, I immediately concluded that he had quitted the south, and driven to the north for the purpose of viewing the excellent *Lanerkshire Horses* I lately had occasion to recommend to his notice.

The "little peasantry of Ireland, Wales, Scotland, and many parts of England, which your correspondent is pleased to say I have forgotten, have not been driven to the necessity of forcing their ploughs along the furrow with "a lean cow, an ass and a goat yoked together,"* their situation is comfortable when compared with that of the same class of people in most other parts of Europe, but even those circumstances by which he says "the labours of the farm are suspended, and the favourable season irremediably lost," tend to shew the *danger*

* See Mr. Guthrie's Geographical Grammar.

to which we should be exposed, if the cultivation of our lands was intrusted *in the degree contended for by the advocates for small farms*, to a "little" tenantry. I admit the advantages which would flow to the kingdom from cottages with *small* quantities of land, *provided that system were not too far extended.* But, Sir, if this mighty nation were to depend for its "daily bread" on the crops raised by the "little farms," which some of our visionary rural *theorists* would universally introduce, all of us would speedily have occasion to say *most heartily*, from such cultivators, *good Lord deliver us.* Not pale faced death, but *destructive famine* would spread its ravages throughout the country.

From the "crazy carts" of these peasants I turn with pleasure to those so accurately described by "A Caledonian." Several times I have beheld with surprize the vast loads brought in some of them from the port, and *up* the beautiful "walk of Leith," to our northern metropolis, *with only one or two horses in a cart*, and when I advert to the number of huge horses so generally used in the carriages in the city of London, *for drawing loads not much heavier*, I observe a conclusion much in favour of our *northern management of teams.* The carts in the neighbourhood of Edinburgh are not only strong and cheap, but better culculated for dispatch, in yoking, &c. than any other I ever saw.

I am, Sir, yours, &c.
AGRICOLA NORTHUMBRIENSIS.

ENUMERATION OF PATENTS LATELY ENROLLED.

Jan. 10, 1804. JOHN WOOD, of Manchester, in the county palatine of Lancaster, Machine-maker; for his new-invented improvements or additions to machines for spinning cotton, silk, and wool.

—— 19, John Slater, of Huddersfield, in the county of York, Surgeon; for his new-invented improved method of manufacturing and fabricating of cables, shrouds, stays, and other articles for the rigging of ships, of materials never before used for that purpose.

—— 26, George Alderson, of Carnaby-street, in the parish of St. James's, Westminster, in the county of Middlesex, Lead-pipe-manufacturer; for his new-invented manufacture of metal pipes, the same being lead, lined with tin, in a manner and by a process entirely new, to be used in all cases to which lead pipes are applicable.

Feb. 7, Mr. Edward Thompson, of Birmingham, Button and Ivory-manufacturer; for an improved mode of making pikes.

—— Marcus Hymans, of Exeter-street, Covent Garden,

in the county of Middlesex; for a composition for shaving without the use of razor, soap, or water.

Feb. 7, William Hyde Wollaston, of Buckingham-street, Fitzroy-square, in the county of Middlesex; for an improvement in spectacles, by the application of concavo-convex glasses to them.

—— Thomas Parsmore, of Doncaster, in the county of York, Machine-maker, for an improved machine for chopping of straw and for splitting beans, crushing oats, and grinding malt and barley.

CRITICAL CATALOGUE.

An Inquiry into the Rot in Sheep, and other Animals; in which a Connection is pointed out between it and some Obscure and Important Disorders, in the Human Constitution. By Edward Harrison, M. D. F. R. A. S. ED. *Member of the Royal Med. and Royal Phys. Soc. Ed. of the Med. Soc. London, &c.* 8vo. pp. 56. Bickerstaff. 1804.

THIS tract, which is dedicated to Sir Joseph Banks, contains some very useful and important observations. "Hitherto," says Dr. Harrison, "little has been attempted towards combining the scattered principles of animal physiology and pathology into one grand and comprehensive science. Such an undertaking would lead to great practical improvements; for since a chain of connexion is extended through every part of animate nature, the unfolding of it could not fail materially to enlarge our views, and multiply our resources, for the benefit of afflicted mortals. Even the peculiarities of each individual arising from his habits, œconomy, anatomical structure, and employments, would contribute in no small degree to elucidate the constitutional functions of other beings. These observations first suggested themselves to my mind, by an inquiry concerning the rot. When I first entered upon the examination, I supposed that it was confined exclusively to sheep; but I soon discovered, that several others of the brute creation are equally exposed to this dangerous malady, and that it bears a striking resemblance to some complaints in the human body. Strongly impressed with the importance of these facts, I became more solicitous to prosecute the subject, from a desire, by this means, to benefit more effectually my own profession."

The great prevalence of dry weather, our author informs us, during the two last summers, has materially obstructed his plan, and obliged him to defer its completion to a future season; but in the mean time, he has ventured to deliver his opinion of the cause and method of preventing the rot; with a view to excite the observations of medical practitioners, and ingenious agriculturists. A design so laudable we would willingly promote to the extent of our means. "In every point of view," observes our author, "the numerous complaints of sheep seem to be entitled to a very particular consideration. Through them," continues he, "we may be enabled to clear up several important matters relative to agues, remittents, the yellow fever, dysentery, cholera morbus, &c. and probably, on further inquiry, the

Egyptian ophthalmia will be found to reſemble the blindneſs with which ſheep are ſometimes afflicted in ſummer."—In a work devoted ſolely to the intereſts of agriculture, it may perhaps appear to be going ſomewhat out of our way, to notice ſpeculative diſcuſſions on a ſubject ſo remote as the ophthalmia; but as the ſubject is highly intereſting, as Dr. Harriſon has alluded to it, and as his hypotheſis reſpecting it is extremely ingenious and probable, we truſt that we ſhall be excuſed for inſerting the following obſervations, which he has preſented in a note.

"It may be thought a bold meaſure in me," ſays Dr. Harriſon, "to aſſociate the blindneſs in ſheep, with a malady ſo little underſtood, as the ophthalmia of Egypt; nor do I preſume to offer more than conjecture and hypotheſis, with reſpect to either of theſe diſorders. Both affections are ſometimes attended with inflammation and ſuppuration of the eyes, which terminate too frequently in perpetual blindneſs. Whoever takes the trouble to make himſelf thoroughly acquainted with the ſevere ſufferings of our brave countrymen in Egypt, will, I think, be inclined to impute the ophthalmia among them, to noxious vapours, rather than to particles of floating ſand, to ſolar reflection, or the intruſion of unſeen inſects. Mr. Power, who has paid great attention to this ſubject, remarks, that the night pickets frequently returned from duty, with inflamed eyes, and ulcerated fauces.

"An officer of engineers informed me, that, when riding on military duty in Egypt, he felt a ſudden ſhock in both eyes, and that ſevere ophthalmia was the immediate conſequence of this impreſſion.

"From the ſymptoms appearing ſo ſoon after expoſure, the occaſional cauſe, whatever it may be, ſeems to produce its effects by a primary action upon the parts, and not through any impreſſion on the general habit. This is ſo contrary to our experience, with rerpect to contagious influence in general, that I ſhould be diſinclined, from anology alone, to join in an opinion, that the ophthalmia is ever produced or propagated by infection. Were the diſorder of a contagious nature, it would not, I conceive, have been confined ſo entirely to one of the tents belonging to Hompeſch's huſſars; but from the free intercourſe that it obtains among ſoldiers, it would have ſpread itſelf through the army in all directions. On the contrary, from its appearing chiefly in the Delta, where, from the nature of the ſoil, and the numerous ſtreams of water, which flow through the country, the low grounds are poachy and wet, we have more reaſon to impute it to miaſmata. Admitting this to be the true cauſe, we ſhall be at no loſs to account for its appearing ſo frequently among the cultivators of rice, or the lower inhabitants at Cairo and Alexandria, ſince the poor generally reſide in moiſt and dirty places. In both cities the exhalations are greatly multiplied, by the cuſtom in Egypt of watering the ſtreets, and their operation is rendered ſtill more certain, from ſleeping at night on terraces, in the open air. It is important to repeat, that a great proportion of men employed on the night duty before Ghiza, returned to their quarters with ophthalmia and ulcers in the fauces. Though we ſhould have great difficulty in explaining this fact, from any of the cauſes to which this diſorder has been attributed, we can eaſily reconcile it to our notions of miaſmata; ſince

it has been obſerved in all countries, that exhalations are moſt powerful and dangerous in the night. With the nature of effluvia, we are at preſent ſo little acquainted, that, for aught we know to the contrary, the human body is expoſed to as great a variety of noxious emanations, as of peſtilential contagions."

Part the Firſt of the pamphlet before us is appropriated to "an enquiry into the nature of the ſoil, and the circumſtances which induce and prevent the rot; in which it is attempted to prove, that *marſh miaſmata* are equally the cauſe of agues, remitting fevers, &c. in the human ſubject, and of the rot in animals."—That *miaſmata* are uniformly the primary cauſe of the rot in ſheep, is the poſition, to the eſtabliſhment of which the whole of Dr. Harriſon's arguments tend. He enumerates twelve ſpecies of animals, *viz.* ſheep, cows, horſes, aſſes, hogs, deer, hares, rabbits, geeſe, pidgeons, turkies, and poultry, which are ſubject to the rot; conſidering, alſo, that dogs are not entirely free from it. "Poor clayey and loamy lands," he obſerves, "are moſt ſubject to rot," the water ſtagnating on them, and being only removed by evaporation. "Grounds," he ſays, "that are always dry, or always under water, and ſuch as are wet enough to preſerve a continual run and circulation, were never known to ſuffer from the rot."—"Grounds newly laid down for paſture, or ploughed fields, exhauſted by repeated crops, where the ſward is thin, and the water remains in plaſhes for want of proper outlets, are peculiarly ſubject to rot. In ſuch ſituations there is nothing to ward off the gleams of the ſun's rays. Evaporation is therefore copiouſly performed, and probably ſome of the water is decompoſed, ſo as to generate in combination with other ſubſtances, the poiſonous effluvia, called *miaſmata paludum*, which occaſion the rot in animals."

Dr. Harriſon objects to an opinion holden by ſome, that the rot is cauſed by a vitiated dew, on the ground that, if it "were occaſioned by the dew, it ſhould appear equally on all lands; but ſince it is only to be found in certain places, and under peculiar circumſtances," he thinks it cannot be attributed to this cauſe.

Conſidering that ſoft and continued rains are much more dangerous to ſheep than violent ſtorms, our author alſo oppoſes the idea, that the rot may be occaſioned by ſwallowing the *gruſt*, which adheres to the graſs after wet weather, or the overflowing of running water. He can eaſily believe, that particles of the ſoil may be ſwallowed by the ſheep with their food, but does not conceive that ſuch particles can deſtroy the texture and fabric of the liver.

As this diſorder is confined excluſively to certain grounds, Dr. Harriſon is of opinion, that it cannot depend upon any change of vegetation, or originate from the luxuriant and quick growth of plants, in hot moiſt ſeaſons.

Againſt the notion that the rot is produced among ſheep by their grazing upon certain herbs, Dr. Harriſon contends, that ſeveral of the animals which are ſubject to this diſorder refuſe the plants alluded to, and he inſtances the important fact, that ſheep have been known to acquire the diſeaſe by remaining only ten minutes on wet lands, a time too ſhort for them to have taken any great quantity of the ſuſpected vegetables. He thinks alſo, that if the diſorder were pro-

duced by feeding upon plants, it would occur moſt in Spring or Summer, when the ſheep are in the greateſt vigour.

From a variety of points, which our author's profeſſional knowledge has enabled him to diſcuſs at conſiderable length, he is inclined to believe, that *flukes* are never the cauſe of the rot, though they are commonly to be found in its advanced ſtages.

The following paſſage, alluding to a friend of the author, ſeems to throw conſiderable light on Dr. Harriſon's hypotheſis:

"Mr. Harriſon reſides upon a conſiderable inheritance, which was formerly tenanted by his father, and grandfather. It conſiſts of high and low lands of a loamy and tenacious nature. While a brook which runs through the farm remains overflowed, and the water continues upon the adjoining flat grounds, his ſheep never ſuffer any inconvenience, though they are frequently obliged to wade for their proviſions. As ſoon as the flood is ſubſided, the ſheep can at any time be tainted in a quarter of an hour, while the land retains its moiſture, and the weather is hot and ſultry. The butchers are ſo well acquainted with the importance of this fact, that when my friend has diſpoſed of any fat ſheep, they are uſually turned upon his rotten ground to make them thrive faſter.

"Mr. Harriſon has by judicious management laid the greateſt part of his farm completely dry, and is now little troubled with the rot, unleſs when he wiſhes to give it to ſome particular animals. His neighbours, who have been leſs provident, are ſtill ſevere ſufferers by it, nor are their misfortunes confined to ſheep alone. Pigs, cows, aſſes, horſes, poultry, hares, and rabbits, become rotten in this lordſhip, and have flukes in their livers.

"Many years ſince, the grandfather of this gentleman removed ninety ſheep, from a conſiderable diſtance, to his own reſidence. On coming near to a bridge, which is thrown over the Barling's river, one of the drove fell into a ditch, and fractured its fore-leg. The ſhepherd immediately took it in his arms to a neighhouring houſe, and replaced the limb. During this time, which did not occupy more than one hour, the remainder were left to graze in the ditches, and lane. The flock were then driven home, and in a month afterwards, the other ſheep joined its companions. The ſhepherd ſoon diſcovered that all had contracted the rot, except the lame ſheep; and as they were never ſeparated upon any other occaſion, it is reaſonable to conclude, that the diſorder was acquired by feeding in the road and ditch bottoms."

Our author preſents ſome judicicus obſervations relative to the *prevention* of the rot, concluding the *firſt part* of his performance with the following paſſage.

"I am of opinion, that the generation of noxious exhalations may be reſtrained in ſome meaſure by judicious huſbandry, and by covering the ground with marl or lime. Whether the ſame object can be effectually obtained by animal manures or other means, is a matter concerning which I am not ſufficiently informed; but ſince judicious drainage conſtitutes the baſis of agriculture, and contributes eſſentally to the preſervation of animal life, I would recommend this ſyſtem to be vigorouſly proſecuted, in all moiſt ſituations."

The ſecond part of the pamphlet before us exhibits a *History of the*

Rot in Sheep, which, on account of the uſeful information which it contains, we ſhall take the liberty of preſenting to our readers. It is as follows:

" When in warm, ſultry, and rainy weather, ſheep that are grazing on low and moiſt lands, feed rapidly, and ſome of them die ſuddenly, there is reaſon to fear that they have contracted the rot. This ſuſpicion will be further increaſed, if a few weeks afterwards the ſheep begin to ſhrink, and become flaccid in their loins. By preſſure about the hips at this time, a crackling is ſometimes perceptible. Now, or ſoon afterwards, the countenance looks pale, and upon parting the fleece, the ſkin is found to have exchanged its vermilion tint for a pale red; and the wool is eaſily ſeparated from the pelt. As the diſorder advances, the ſkin becomes dappled with yellow, or black ſpots. About this time, the eyes loſe their luſtre, and become white and pearly, from the red veſſels of the tunica adnata, and eyelids, being contracted or entirely obliterated. *To this ſucceeds debility and emaciation, which increaſe continually till the ſheep die; or elſe aſcites, and perhaps general dropſy, ſupervene, before the fatal termination. Theſe ſymptoms are rendered more ſevere, by an obſtinate purging, which comes on at an uncertain period of the diſorder. In the progreſs of the complaint, ſheep become what the graziers call chockered, *i. e.* affected with a ſwelling under the chin, which proceeds from a fluid contained in the cellular membrane, under the throat.

" In five or ſix days after contracting the rot, the thin edge of the ſmall lobe of the liver becomes a tranſparent white or bluſh colour, and this ſpreads along the upper and lower ſides, according to the ſeverity of the complaint. Sometimes it does not extend more than an inch from the margin. In ſevere caſes, the whole peritoneum inveſting the liver is diſeaſed; and then it commonly aſſumes an opaque colour, interſperſed with dark red lines or patches. The upper part of the liver is ſometimes ſpeckled like the body of a toad, to which it is ſaid to bear a ſtriking reſemblance: round the ductus communis choledochus, and hepatic veſſels, a jelly-like matter is depoſited, which varies according to the ſeverity of the attack, from a table ſpoonful, or leſs, to five or ſix times that quantity. Upon boiling,

* When the ſhepherd determines to examine the eyes of a ſheep, which ought to be done frequently, he ſhould place it between his thighs, and hold the head with both hands. He then proceeds to raiſe the upper and depreſs the under eye-lid; by which means, the blood-veſſels of the tunica albuginea are brought into view. When they are red, and in great numbers, the ſheep is ſuppoſed to be in good health. The canuncula lacrymalis, and inner ſurface of the eye-lids, ſhould be as red as the veſſels on the eye-ball. If they are pale, and the veins are in ſmall quantities, and faint-coloured, or livid, the ſheep is in a debilitated ſtate, or afflicted with the rot. In all caſes, where the blood-veſſels have entirely diſappeared, the mutton is bad. By frequently examining the eyes in dangerous ſeaſons, I conceive, ſhepherds might always diſcover the rot, before their ſheep begin to ſhrink, and, conſequently, in time to prevent any material injury to their profits. Where the demand is conſiderable, and the market is not far diſtant, the grazier may always turn the rot to his advantage, by keeping the tainted ſheep while they continue to feed, and taking care to kill them immediately after they ceaſe to thrive.

the liver loſes its firmneſs, and ſeparates into ſmall pieces in the water, or remains ſoft and flaccid.

"Several graziers and butchers, with whom I have converſed at different times, having obſerved that ſheep are much diſpoſed to feed during the firſt three or four weeks after being tainted, omit no opportunity of producing it to increaſe their profits. When the firſt ſtage is over, flukes begin to appear in the pori biliarii, the ductus communis choledocus, and in the gall-bladder. At firſt, the quantity of theſe creatures is ſmall; but as the diſeaſe advances, they increaſe, and before death are often very numerous. In the laſt part of the complaint, they are ſometimes to be found in the ſtomach, as well as in the inteſtines and liver. This, like the viſceral diſorders of the human body, may terminate in reſolution—effuſion—ſuppuration, or ſchirrus.

"1ſt, The complaint is ſaid to terminate in reſolution, when the inflammatory action goes off, without deſtroying the ſtate and texture of the parts. However, I am ſtrongly inclined to believe, that every conſiderable inflammation in the human body, and in other animals, although it ends in reſolution, leaves behind it ſome remains, which may be diſcovered by an experienced anatomiſt. When the veſſels are thrown into inflammatory action for a few days only, effuſion commonly takes place, and the coats become thicker, and aſſume a buffy colour. Theſe changes in the ſanguinary ſyſtem often continue through life, and lay the foundation of many chronic and incurable diſorders. Sheep that recover from the rot, exhibit very different appearances after death, according to the ſeverity of the attack; but the taint is ſeldom or never entirely removed. I was deſired, within theſe few days, to look at the liver of an old ewe, that died fat, and contained fourteen pounds of ſuet in her body. The back part of the ſmall lobe was dappled with whittiſh ſpots; the coats of the ductus communis and pori biliarii were conſiderably thickened, and more ſolid than uſual. In colour, they reſembled the human aorta in old people, and were full of flukes: in other reſpects, the liver appeared to be ſound and natural. The butcher aſſerted, that the variegated appearance and alteration in the ducts, were occaſioned by a ſlight taint of long ſtanding, which had not been conſiderable enough to diſorder the œconomy, or impair the health of the animal, ſufficiently to prevent its feeding.

"2dly, When ſheep die ſuddenly in the firſt ſtage of the diſorder, an effuſion of ſerum, or of wheyiſh coloured fluid, may be commonly diſcovered, in the cavity of the abdomen, and then the peritoneum ſurrounding the liver is generally covered with a membrane or coat of coagulable lymph. This form of the rot has been frequently confounded with the reſp or red water, though it differs from the latter diſorder, in the colour of the effuſed liquid, in being much leſs diſpoſed to putrefaction, and in ſeveral other particulars.

"3dly, Abſceſſes in the liver exhibit another termination of this malady. They are ſeldom conſiderable enough to kill immediately; but, in conſequence of the abſorption of purulent matter from them, the ſheep frequently waſte away, and die heptical or dropſical. When the collections are ſmall, ſheep will recover ſufficiently to bear lambs, for three or four ſeaſons, and afterwards become tolerable mutton.

"4thly, The moſt common termination is in ſchirri, or what the ſhepherds call knots in the liver. I have ſeen the whole ſubſtance of this important viſcus ſo full of ſmall roundiſh lumps, or ſchirrous bodies, that it was difficult to find any ſound part in it. The firſt attack is unfortunately ſo very inſidious, that the diſorder is ſcarcely obſervable, before the animal begins to waſte and loſe fleſh. In this advanced ſtate, it is ſaid to labour under the rot or pourriture *, from overlooking the commencement of the diſorder.

"Hydatides are obſerved to affect ſchirrous and purulent livers more frequently than others. When livers are much diſeaſed, the butchers carefully conceal them from the public eye. To me, it is always matter of ſurprize, to find the mutton ſaleable in theſe ſevere caſes. It ſhews, in an extraordinary manner, the accommodating power of living matter, which is able to maintain life, and increaſe corpulence, under ſuch unfavourable circumſtances. Shepherds and breeders, who make it a general rule to kill every ſheep that becomes indiſpoſed, from an opinion that very few of them ever recover from any illneſs, would do well to examine the livers and other viſcera of ſlaughtered ſheep. By ſuch a practice, they would ſoon be convinced, that ſheep are able to endure a great deal. I am perſuaded, that the uniform mortality among them, proceeds more from ignorance, or erroneous treatment, than the inevitable tendency of their diſorders. This inquiry would point out in a forcible manner, the neceſſity of encouraging ſome medical perſon of good reputation, and conſiderable experience, to turn his attention to the numerous maladies of theſe uſeful animals. The diſeaſes of horſes have of late years been regularly ſtudied in moſt parts of Europe; but to Britains, ſurely no veterinary object is more deſerving of encouragement than the management and health of ſheep, with which our unrivalled commerce and national glory are ſo inſeparably connected. "Les plus grands medecins doivent rechercher avec ſoin la cauſe et le remedè d'un mal, qui menace de détruire des animaux utiles à toutes les nations; et principalement à celles qui ſavent employer la laine pour les plus beaux ouvrages." DAUBENTON.

* See Obſ. et Inſt. ſur les Malad. des Animaux Domeſtiques.

HISTORY.

National Transactions.

GREAT BRITAIN.

THE hacknied rumours of invaſion are ſtill afloat, but it is conjectured by many, that the convulſed ſtate of the interior of France will ſo far divert the attention of Bonaparte, as to induce a postponement of the attempt. The Volunteer Bill has at length paſſed the Houſe of Lords, and been returned to the Commons with ſeveral verbal amendments. In its progreſs, it has met with an uncommon degree of oppoſition, almoſt every clauſe having been conteſted in the Committee, and the Houſe having frequently divided upon it. Government has expreſſed a wish, that the ſeveral

Volunteer Corps ſhould go on permanent duty for a certain time. Some of the Corps will, from the neceſſary avocations of the members, be unable to comply with this requeſt; but ſeveral of them have endeavoured to accede as nearly as poſſible to it, by binding themſelves, under ſome fines, to attend drill for ſome hours each day, during a certain period. Many reports relative to a change of Ministers, are in circulation, but no definitive plan has been mentioned.

IRELAND.—The depreciation of the ſilver currency in Ireland, and the enormous rate of the exchange againſt that country, have lately excited much attention; but the Privy Council has at length adopted the meaſure of iſſuing ſilver tokens, of the intrinſic value of 11d. for ſhillings, which has allayed the irritations of the public mind. His Majesty has been empowered by Parliament to accept the offers of the Irish Militia; and a Bill is in its progreſs to raiſe an equal number in that quarter of the kingdom to ſupply the place of thoſe who ſhall be removed. Mr. Corry has stated to the gentlemen who expreſſed their intention of becoming bidders for the Irish loan, that the loan for Great Britain this year would not exceed 10,000,000l. and that for Ireland, 6,000,000l. except in the event of invaſion or ſome other extraordinary occurrence.

FRANCE.—Arreſts, relative to the reported conſpiracy againſt the Firſt Conſul, continue to take place in every department of the Republic, and alſo through the vaſſal ſtate of Germany and Holland. A counter-revolution is much ſpoken of. On the morning of March 15, a party of French troops, who had paſſed the Rhine at Kehl, on the evening before, ſeized the young Duc d'Enghien (ſon to the Duke of Bourbon, and grandſon to the Prince of Condé) at the village of Ettenheim, in the Electorate of Baden, and hurried him off to the caſtle of Vincennes, where he was immediately put on his trial before a military commiſſion appointed to try the conſpirators. The charges againſt him were, that he had borne arms againſt France, that he had offered his ſervices to England, and had been employed by her, both in procuring intelligence, and in endeavouring to excite commotions in the interior of France; that he was at the head of a body of emigrants paid by England, and forming in the diſtricts of Friburg and Baden; that he had fomented intrigues for a riſing in the departments around Straſburgh; that he was one of thoſe concerned in the conſpiracy planned by the Engliſh for the aſſaſſination of the Firſt Conſul, and intended, in caſe of the ſucceſs of that plot, to return to France. On all theſe charges he was found guilty by his judges, on the 21ſt of March, and at two o'clock in the morning of the following day, he was ſhot in the foreſt of Vincennes. The King of Sweden, it appears, was at Baden, when the arreſt of this unfortunate Prince took place; and he immediately diſpatched a courier to Paris, inſtructing his Miniſter there, conjointly with the whole Diplomatic Corps, to preſent a ſtrong remonſtrance to the Conſul in his favour. This was accordingly done, but it failed of the intended effect. The arreſt of the Duc d'Enhien, in a neutral territory, his ſummary trial, and immediate execution, have excited equal ſurpriſe and indignation wherever the accounts of the tranſaction have reached. On the 24th of March, the Grand Judge of France made a report, developing to ſecret correſpondence, pretended to have been carried on between Mr Drake, the Engliſh Miniſter at the Court of Bavaria, and an agent of his in France. According to this report, Mr. Drake had drawn up certain inſtructions for this agent, and commiſſioned him, beſides obtaining intelligence, to procure the deſtruction of the powder-mills, and foment inſurrections againſt the Conſular Government. The agent, we are told, pocketed Mr. Drake's money, and amuſed him with a ſhew of intelligence, but communicated the whole buſineſs to the Police at Paris. Of the truth of all this, there is not a ſhadow of proof; but the official Report bears ſtrong marks of fabrication; and, by the language of the Chancellor of the Exchequer, in the Engliſh Houſe of Commons, can be conſidered in no other

light than as a forgery. The anſwers of the different diplomatic agents at Paris, to the circular letter which has been tranſmitted to them by Talleyrand, with a copy of the correſpondence, are very curious documents. Thoſe of the Powers immediately under the rod of France, expreſs vehement indignation at the condnct of Mr. Drake; while thoſe who are leſs under the yoke, confine themſelves to ſome general reflections on the criminality of abuſing the diplomatic character. It is ſaid, that Buonaparte has inſiſted on the perſonal ſeizure of Mr. Drake: it is reported, alſo, that the Bavarian Miniſter at London has been inſtructed to demand that Gentleman's immediate recall; or, in the event of experiencing a refuſal, to demand paſſports for his own return. Mr. Drake is daily expected in England. According to the *Moniteur*, General Pichegru, who had been ſeized as a conſpirator, and was confined in the Temple, precipitated his own death, on the 5th of April, by twiſting a ſtick ſo very tightly in his cravat as to ſtrangle himſelf. That Pichegru is really dead, no doubt can be entertained; but, that he killed himſelf, is univerſally diſbelieved. That man muſt be worſe than a madman, who would prefer an ignominious death by his own hand to an honourable one which awaited him. Aſſaſſination has been at work.

SWITZERLAND.—Several departments of this unhappy and oppreſſed country, have recently exhibited ſymptoms of commotion.

EAST-INDIES.—The Mahratta war has taken a turn moſt deciſively favourable to the Engliſh. The reſpective armies under the command of General Welleſley and General Lake, have been completely ſucceſsful. Some ſplendid victories have been obtained; the enemy, having ſuſtained immenſe loſs, has been compelled to ſue for a ceſſation of hoſtilities; the Mogul, the deſcendant of the mighty Tamerlane, has been reſtored to his former dignities; and it is thought, that by this time peace has been fully eſtabliſhed. We have to regret, however, the loſs of a number of meritorious officers and intrepid ſoldiers.

CEYLON.—In Ceylon we have experienced a happy reverſe of fortune. The King of Candy, having with his main army attacked a body of our troops poſted at Hangwelle, has been defeated with prodigious ſlaughter, and forced again to take refuge in his woods and mountains. Enraged at his defeat, he maſſacreed ſeveral of hie principal officers; and, in his retreat, ſet fire to the foreſts, which had even hitherto been held ſacred by the former monarchs of Candy, and conſidered as their beſt fortifications. His principal magazines and ſtores, collected at Rowanelle, have been taken, as well as his whole train of artillery, and the Laſcars who acted as engineers.

Agriculture.

AGRICULTURAL REPORT.

Extract of a Letter from Northumberland.

IN this part of the kingdom, the weather, after having continued very dry for many months, ſet in *wet* in the firſt week of November laſt, almoſt immediately after more than the uſual quantity of wheat ſeed had been committed to the ground under the moſt favourable circumſtances. It continued rather wet from that period till the beginning of December, when the farmer had ſcarcely finiſhed the ploughing of his turnip-fallows, till he had the mortification to behold his grounds covered with deep ſnow, which with moderate froſts, continued till about Chriſtmaſs. The ploughing of ſtrong and graſs lands then commenced; the weather was generally wet, but very mild, and the paſtures exhibited a verdure ſeldom obſerved at that ſeaſon. About the middle of January, all field operations were again inter-

rupted by frosts and snow, and the farmer could scarcely employ his men and horses otherwise than in carting dung from the fold yards to the fields, where it is generally thrown up by forks, &c. to the height of five or six feet, no carts being taken upon the dung hill, as that practice retards, and sometimes totally prevents, fermentation. From that time, to the present date, the weather has generally been unfavourable for agricultural operations; a few days of frost and snow having been succeeded by heavy rains and sleet, in almost regular alternation; and till within the last week, the frosts have been so intense in some of the rather elevated parts of the country, as to prevent ploughing till afternoon. In the last week of February and beginning of March, we frequently had a *glimpse* of the sun, and under his genial influence, got some wheat sown upon patches of dry turnip-land. In most parts of the country, however, spring wheat could not be committed to the ground, and the *clean* fallows, which were too strong and retentive for turnips, and which were intended for drilled beans or pease, have, till within the last few days, been in a state altogether improper for the ploughs or harrows. The season being now too far advanced for beans, some farmers are preparing the driest parts of them for early gray pease; of these I last year had about ten acres drilled, and the spring and summer having been favourable for preparing and horse-hoeing, the land was brought into a proper state for wheat. I am now putting a few acres under the same management, but owing to this untoward spring, am apprehensive that, unless the summer prove uncommonly favourable for horse hoeing, the land will not be sufficiently cleaned and pulverized for wheat next autumn. Perhaps I may find that a crop of wheat after a bare fallow, would have been more valuable than the peas, and wheat after them. Scarcely any barley is yet sown in this quarter, and even on the driest lands, the sowing of oats is not finished. On strong and wet soils much of that grain is yet unsown, and, like great part of that already committed to the ground, will probably be poached in, in such a manner, as will be highly unfavourable to the succeeding crop, besides leaving a foul stubble. We cannot reasonably expect an early harvest, and in a late one, the cultivators of Scotland and the northern counties of England never reap a productive crop. Having had a few drying, though extremely cold, days, we anxiously hoped that the farmers of strong and wet lands would still be enabled to commit the remainder of their seed to the ground in middling condition. Unfortunately, however, the weather has again set in wet, and "the hope of the husbandman has failed;" this country now exhibits a dreary appearance. Turnips having become scarce, their prices rose to a height unparalleled in modern times, except in 1799 and 1800; and with a view of saving the lives of the ewes and lambs, almost all the new grasses and meadows, as well as the pastures, have been stocked, and are now reduced to a very brown state. This, together with the drough of last summer, which prevented the growth, and even the vegitation, of much of the clover and rye grass, will, in all probability, greatly affect the crops and prices of hay next season. The loss of lambs from the long woolled sheep, in the improved and inclosed parts of the country, has happily been but small; but as the sheep on the highlands (which are nearly all of the cheviot breed) have been much reduced in condition by the wetness and severity of the weather for the last four months, a very great loss will be sustained by our stock farmers, if the weather, during the lambing season (which will commence within a few days (does not prove uncommonly favourable. In most parts of the country, fodder is scarce, and it seems probable that lean stock will meet a heavy sale at our fairs in the beginning of next month. Owing to the scarcity of turnips and the general want of food, our weekly market at Morpeth (which, I believe, is either the second or third in the kingdom for fat stock) has, for some weeks past, been extremely full, and prices have, in consequence, fallen considerably. Mutton, about a month ago, was at 8d. to 8½d. per lb. sinking the offal; now it will scarcely bring

9d. and beef has fallen from 8s. and 8s. 6d. to 7s. 7s. 6d. and 7s 9d. per ſtone of 14lb. *ſink.*

It ſeems the general opinion, however, that theſe articles will be ſcarce and high in price in May and June. Swine have been long, and ſtill are, almoſt unſaleable. The prices of wheat and oats advanced a little in our markets a few weeks ago; at preſent they are not quite ſo briſk.—Wheats are 5s. 3d. to 5s. 9d. and ſome particular ſamples 6s.—Oats, 2s. 6d to 2s. 10d.—Barley, 2s. 4d. to 2s. 6d. and ſome 2s. 8d.—Peaſe, 4s. to 4s 6d. and Rye, 3s. to 3s. 4d. per Wincheſter buſhel. The ſtock of grain in the hands of farmers is not great, but that in the granaries of the corn merchants is ſuppoſed to be very conſiderable. Except for oats and peaſe, theſe prices are much below what the growers can now afford to ſell for; and even if they could obtain 6s. 8d. to 7s. 6d. per buſhel for wheat, and 4s. to 4s. 4d. for barley, I am of opinion, that in moſt ſituations, they could not (after charging legal intereſt for their capital) make a profit of much, if any thing, above five per cent per annum, which is much lower than that obtained in mercantile and manufacturing concerns, and certainly ill calculated to retain the preſent, much leſs to attract additional capital to the firſt and moſt important of all the arts.

Pray, Sir, be ſo good as to inform us what has become of all thoſe *heaps* of bank notes which the reſtriction on caſh payments at the Bank of England was to raiſe in all parts of the country, to enhance the price of proviſions, and whether you can deviſe any means of getting a greater part of them into the hands of thoſe "*raſcally* farmers, corn-merchants, millers, bakers, monopolizers, and fore-ſtallers," who, by their wonderful, or magic power, (*according to the news-paper writers in Great Britain and Ireland,*) can raiſe the prices of grain to any pitch they pleaſe; for though farmers do not wiſh to ſee corn higher than about one half of the enormous prices obtained a few years ago, yet we are *very anxious* for ſuch as will enable us to make a fair and reaſonable profit, after payment of the *extreme high rents, taxes, wages, &c. &c. &c.* with which we are burthened. Vaſt numbers of farmers believed, on the renewal of the war, that grain would immediately advance rapidly in price. But Sir, when they advert to the preſent ſtate of the corn-markets, and to the circumſtances of butchers meat having attained the higheſt price *during the late interval of peace*, they are now pretty generally of that opinion, which their inferior crops ought to have confirmed before; namely, that the adverſe ſeaſons of 1799 and 1800, and not the war, &c. cauſed the high prices obtained in theſe years.

The news-papers convey to all parts of the country much ſooner than your publication; the intelligence in thoſe parts of your Magazine, called national tranſactions, and liſt of bankrupts, &c. I therefore beg leave to ſuggeſt the propriety of omitting them, and to offer *a ſuccedaneum.*

I humbly conceive, Sir, that this letter, notwithſtanding its imperfections, will be more intereſting to agriculturiſts in general, than the articles I have mentioned; and I ſhould be glad to find that ſome of the Eaſt Anglians, and your other correſpondents, would employ a leiſure hour in adding a half a quarter ſheet to their letters, rather than in cenſuring other friends to your valuable work for taking too much room in your collection,

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

KENT SOCIETY,

FOR THE ENCOURAGEMENT OF AGRICULTURE AND INDUSTRY.

At a general meeting of this Society, holden at the Fountain Tavern, in the City of Canterbury, on Saturday the 31ſt of March, 1804,

HENRY GODFREY FAUSSETT, Eſq. V. P. in the Chair.

Reſolved, That this Society do, in general approve of the Reſolutions of the *Eſſex Agricultural Society*, paſſed at a meeting held at the Shire Hall Chelmsford, on the 25th of February laſt, "*for the purpoſe of taking into conſideration the effect of the high duties on barley; the preſent operation of the Corn Act of the 31ſt of his Majeſty, and other matters relative thereto;*" and that the furthar conſideration of the ſame be deferred to the anniverſary.

Reſolved,—That the following premiums be given at the enſuing anniverſary.

Class I.—*To Servants.*

To *two married* and *two ſingle Servants in Huſbandry*, who have lived with good characters the greateſt number of years (not leſs than five) and *ſtill continue* with the ſame maſter or miſtreſs, and ſhall produce ſatisfactory certificates.—*Two Guineas* each premium.

To *one Female Servant in Huſbandry*, who ſhall have lived in the ſame ſervice the greateſt number of years (not leſs than five) and on the ſame conditions.—*Two Guineas.*

To *one Boy in Huſbandry*, who has lived in the ſame ſervice (being his firſt) the greateſt number of years (not leſs than five) and *ſtill continues*, and ſhall produce a ſatisfactory certificate.—*One Guinea.*

Class II.—*To Labourers.*

To *Three Labourers in Huſbandry*, who have worked for the ſame maſter or miſtreſs, the greateſt number of years (not leſs than five) and *ſtill continue* to do the ſame, and ſhall produce ſatisfactory certificates.—*Two Guineas* each premium.

Class III.—*To Cottagers.*

To *three Labourers in Huſbandry*, who have brought up the greateſt number of their own legitimate children (not leſs than ſix) to the age of ſix years, in *habits of honeſt induſtry*, with the leaſt *aſſiſtance* from their reſpective pariſhes.—*Two Guineas* each premium.

Reſolved,—That the ſum of *Three Guineas* be given to the owner of the *beſt Cart Stallion* (bred in Kent) and produced at the anniverſary; and that *Two Guineas* be given to the owner of the *ſecond beſt* produced.

Reſolved, That the ſum of *Three Guineas* be given to the owner of the *beſt Bull* kept for ſervice in Kent, and produced at the anniverſary, and that *Two Guineas* be given to the owner of the *ſecond beſt* produced.

N. B. The Premiums will not be given without more than *two* of each ſort are produced, unleſs they appear to the Judges appointed, to be highly deſerving of them; and the owners of the above Horſes and Bulls will be required to engage to keep them *for public ſervice* during *one year* from the time of their receiving the premium.

Claimants for the above premiums are to ſend notice in writing to the Secretary, at leaſt ten days prior to the day of ſhew, which will be on the 25th of May next.

Certificates for the *three firſt claſſes* to be ſent to the Secretary alſo ten days prior to that day (blank forms of which may be had on appiication to the Secretary) accompanied by a recommendatory letter from a member.

The limits of this Society extend to all parts of the county of Kent.

Allen Grebell, Sec. K.A.S.

Peterborough Agricultural Society.

At the annual meeting of this Society, holden at the Angel Inn, on Wedneſday the 4th inſtant, the following premiums were offered for the year enſuing, to perſons reſident within 20 miles of the city of Peterborough, viz

	£.	s.	d.
For the beſt two-ſhear rams — —	5	5	0
For the beſt ſhearling ram — —	5	5	0
For the beſt theave — —	2	2	0

For the beſt two-year old draught ſtallion — 7 7 0
For the beſt ſtallion for hunters — — 5 5 0
For the beſt ſtallion for cart-horſes — 5 5 0

Theſe premiums will be diſpoſed of on Wedneſday the 6th day of June next; and perſons intending to become candidates, are deſired to give ten days notice in writing to the Secretary.

The two laſt mentioned premiums will be confined to horſes attending Peterborough market for the ſeaſon.

For the beſt bull not more that two years old when ſhewn, and having been in the poſſeſſion of the owner for ſix months at leaſt, previous to his being ſhewn — — £. 7 s. 0 d. 0

For the beſt boar, not more than twelve months old 2 2 0

To the labourer in huſbandry who has brought up the moſt numerous family without parochial aſſiſtance — 3 3 0

To the labourer in huſbandry who has worked for one maſter, or on one farm, the longeſt time — — 2 2 0

To the female ſervant who has lived the longeſt time with any one maſter or miſtreſs in huſbandry — — 2 2 0

Theſe premiums will be decided on Wedneſday the 7th day of November next.

To the perſon who ſhall hollow-drain, with ſtone, the greateſt number of acres, previous to the next Eaſter meeting 10 10 0

To the perſon who ſhall hollow drain, with *bruſhwood*, the greateſt number of acres, previous to the next Eaſter meeting 5 5 0

No claim to be made for leſs than 20 acres of land benefited thereby. Notice to be ſent to the Secretary on or before the firſt of March, 1805.

For the beſt fat two-ſhear weather ſheep — 3 3 0
For the beſt fat ſhearling ditto — — 3 3 0

The four laſt premiums to be diſpoſed of at the next Eaſter meeting. The ſheep to have been fed with graſs, hay, cole, or turnips, and not to have had corn or oil. To be ſhewn by perſons who have bred and fed them, and to be ſhorn, killed, and weighed on the day. No two ſhear-ſheep weighing leſs than 30 lbs. per quarter, and no ſhearling leſs than 24lbs. per quarter, to be entitled to the premium.

By order.

Peterborough, April 17, 1804. J. Hook, Secretary.

Agricultural Experiments.

Advantages of deep ploughing for potatoes at Michaelmas, 1802. Mr. Gardiner, of Boldre, took poſſeſſion of about eighty acres of arable land that had been exhauſted by a tenant. Sixty acres had been under white corn ſucceſſively for five years; the laſt crop, principally wheat, ſlight enough as may be ſuppoſed, and a full crop of every ſort of trumpery. The ſoil is naturally of a deep ſtrongiſh loam. As ſoon, therefore, as rain enough has fallen to alloy the plough to go to the deſired depth, Mr. Gardiner broke it up full ten inches deep, burying by means of ſkim-coulter, all the ſtubble and trumpery. In this ſtate, forty acres of it were left till the beginning of April. The ground was crumbled quite fine, and there was not a very full appearance of weeds. It was laid in four boat-lands of about ſix feet. The ſecond week in April, a double mould board-plough was run along the centre of each ridge, and had cuttings of the white globe potatoe, ſet about 9 inches apart, by women and children following the plough. All the dung that could by any means be ſcraped together, was taken from out of a cart that went down the intervals, and was ſpread with a prong lightly and ſparingly over the potatoes, and covered with earth, by a common light plough.

About a hundred cart loads of dung, (of thirty buſhels each,) covered in this manner, about thirty acres, together with twelve buſhels of potatoes an acre to plant it. For the remaining ten acres, Mr. Gardiner

had no dung, and therefore planted them the ſame way without it. During the ſummer, he three times ploughed the ſix feet intervals, run the ſcufflers twice down them, and once hand-hoed the rows of potatoes. Notwithſtanding the dryneſs of the ſummer, the haulm continued green and vigorous, and in the whole forty acres few weeds was to be ſeen. Having propoſed a pit to ſtore them up the laſt week in September, and continued ſo doing until the firſt week in November. They were dug up with prongs, for which, and for picking, he paid 2s. per bag, and ſold them at 6s. per bag, for the whole crop, great and ſmall.

The thirty acres dunged, produced on the average, ninety-ſeven bags per acre, or 291 buſhels. The ten acres undunged produced to Mr. Gardiner's ſurpriſe, eighty-two bags per acre, or 246 buſhels.

Mr. Gardiner adds, that in the middle of December laſt, the whole forty acres were as clean as a garden drilled at 11½ inches with wheat, and then in a very promiſing ſtate.

The profit on theſe forty acres was 815l. 4s. 6d. which is more than 20l. per acre. Mr. G. attributes the great ſucceſs almoſt entirely to the deep winter ploughing, and deep and good ſoil formerly marled.

On Friday, the 20th of April, a market was opened in North-Shields, for the firſt time, and a very conſiderable quantity of grain was expoſed for ſale, which brought advanced prices, viz. wheat 48s. to 52s.; fine 54s.; oats 24s. to 26s. per quarter; fine flour 40s. per ſack. A ſample of fine Frieſland oats was ſold at 25s. per quarter. Although the day was unfavourable, yet a great variety of wares were exhibited for ſale, and the market numerouſly attended. At noon, a ſalute of cannon announced its full eſtabliſhment.

William Thatcher, Eſq. of Whackland, in the Iſle of Wight, has nine ewes, which have this ſeaſon brought twenty-eight lambs, all alive, in one week.

Mr. Meadows, of Salcey Foreſt, Northamptonſhire, has now in his poſſeſſion an ewe, that has yeaned fifteen lambs in four years; in 1801, ſhe had three; in 1802, four; in 1803, four; and on Saturday, the 21ſt. of April ſhe yeaned four more, all heathful lambs.

Mr. John Chriſtian Curwan, of Cumberland, has made very extenſive experiments on the uſe of ſteamed potatoes as a ſubſtitute for hay for cattle, which has been found to anſwer his moſt ſanguine hopes. This gentleman has brought the method of ſteaming potatoes to conſiderable perfection, and for two ſeaſons has fed ſixty horſes upon them, with the addition of a very ſmall quantity of ſtraw. The horſes during the whole time were in the moſt excellent condition. He has alſo given ſteamed potatoes to milch cows and other cattle. This method of feeding is of very great importance, both for its cheapneſs, in compariſon with hay, and as a ſubſtitute in caſe of a failure in the hay crop. The proceſs for ſteaming the potatoes, and the advatages attending this method of feeding, may be found deſcribed by Mr. Curwen himſelf in the 21ſt volume of the Tranſactions of the Society for the Encouragement of Arts, manufactures, and Commerce.

Mr. Bartley, of Bath, has been in the practice of feeding his ewes with potatoes raw and unmaſhed. This has been found to anſwer extremely well. He continued to feed his ſheep in the proportion of two pounds and a half to each ewe every morning. They improved rapidly, and would readily have taken a greater quantity, but it was found that if more was given it would endanger their lambing. As the lambs dropped, they were ſupplied more liberally to increaſe the milk. This method of feeding ſheep, Mr. Bartley thinks, will become general when it is known; and it would, probably, reſult from well conducted enquiries that it might with advantage be ſubſtituted for the turnip.

The Rev. W. Gooch, of Cockfield, Suffolk, is appointed by the board of agriculture to write a new report of the huſbandry of the county of Cambridge, and he is now taking a ſurvey for that purpoſe.

The latter end of March the celebrated Hertfordſhire ox, bred and fed by Mr. Turner, of Aymeſtry, which has been admired by every breeder who ſaw it, was killed. The following is a correct ſtatement of its weight;

	score	lb.
Firſt fore quarter	28	0
Second ditto	27	9
Firſt hind ditto	20	14
Second ditto	21	8
	97	0
Cake of fat	12	1
Hide	3	10
Total	112	11

PIG FATTENING. It is a common prejudice that the profit of pigs conſiſts in their eating all the refuſe, and partaking in no degree of what is valuable for the farm and family. Mr. Whittle did not fat his prize pig in that way, nor was this hog, which nearly doubled the weight of the former, rendered ſubſtantial by ſuch offal traſh. Pigs muſt receive, beſides the waſte ſtuff of the family, ſound and coſtly diet; they muſt be treated with the greateſt clealineſs; and whatever proverbial vulgarity may ſay, cleanlineſs is as natural to them, as to the human ſpecies. Not only this, they muſt have comfortable accommodations, good warm lodging; and when the proper regard is paid to theſe particulars, the voraciouſneſs of their habits will abundantly repay the breeder in the food they conſume, and the attention they require.

In ſummer pigs fatten quickly; and the ſtores are ſo cleanly kept, that this may be called the pig-keeping ſeaſon. Grazing pigs is loſing time. In the ſtubble and corn ſeaſons, they ſhould, however, be kept abroad, and few of them will quickly repay the expence of the attendance.

Norfolk and Suffolk farming is ſo great a favourite, that we are apt to tranſplant its abſurdities as well as its excellencies; hence pigs of thoſe counties have been highly eſteemed. They are ſmall and thin eared; but their only good quality is become very prolific. Thoſe of Herefordſhire and Shropſhire are liable to no objections; they are purchaſed about Michaelmas by the farmers of the hundreds of Eſſex, from thoſe ſhires. They give for them about a guinea per head; and the following year the animals are diſpoſed of, out of the clover and ſtubbles, to the London ſaleſman, ſomething under four guines a-piece. Milk and corn are the profitable articles of pig feeding; an animal ſo fed repays his keep by the ſuperior weight. Barley or oatmeal, with one-third of pea-meal, makes pork next in rank and goodneſs, to the milk-fed pork. Plenty of water is very neceſſary; indeed the cheapness of this liquid has made its nutritive properties little underſtood, and leſs willingly acknowledged. When their appetites are ſo ſatiated as to begin to decline, a little ſulphur in their meat will ſoften its reliſh.

Farming Society of Ireland.

The following premiums are to be given by this ſociety at the Dublin Spring ſhew.

On Tueſday next, April 10, viz.

Claſs		£.
1	For beſt fat ox, 6 years old, and upwards, in Spring 1803,	10
2	For ditto, 5 ditto,	10
3	For ditto, 4 ditto,	10
4	For ditto, 3 ditto,	10
5	For beſt fat cow or heifer, 6 years old, and upwards, ditto,	10
6	For ditto, 5 ditto,	10
7	For ditto, 4 ditto,	10

8 For ditto, 3 ditto, - - - - £10
9 For beſt of the prize oxen, *the Silver Medal.*
10 For ditto, of the ditto, cows or heifers, ditto.

SHEEP.

Long, or Combing Wooled.

11 For the beſt pen of five fat wethers, 2 years old in ſpring 1803 15
12 For ditto ditto 1 ditto - - 15

Short, or Cloathing Wooled.

13 For the beſt pen of five fat wethers, 2 years old, ditto - 15
14 For ditto ditto 1 ditto - - 15
15 For the beſt pen of five native Iriſh ſhort wooled ewes - 5
16 For the beſt wether exhibited, the Silver Medal.

The production of the native Iriſh ſheep is intended as an experiment to determine how far they deſerve the attention of the Society. They will not, therefore be diſqualified for want of merit, provided their wool is of a good quality.

SWINE.

17 For the beſt fat pig, 3 years old, or upwards - 10
18 For ditto, 2 ditto - - - 10
19 For ditto, 1 ditto - - - 10
20 For the beſt fat pig, 6 months old, but not exceeding one year 10
21 For the beſt of the prize ſwine, the Silver Medal.

CONDITIONS.

1 Each candidate, or the perſon appearing for him, muſt enter his ſtock with the Secretary, in their proper claſſes, on Monday, the 6th day of April, before 6 o'clock in the afternoon; and muſt at the ſame time deliver a certificate in the form following, viz.

" I, do certify that the produced by for the premium in claſs the property of and was old and been fed the laſt months in the following manner."

Here ſhall follow the ſtatement of the mode of feeding for the laſt ſix months, which muſt be ſtated.

2 The ſtock will be received on Monday, and will not be admitted later than ten o'clock on Tueſday morning.

3. The cattle muſt be rendered tractable, and led by a ſtrong rope or chain to prevent accidents. No beaſt will be admitted, unleſs this regulation be ſtrictly complied with.

4 The ſheep are to be exhibited in their wool on Tueſday, and ſhorn on Wedneſday.

5 No perſon ſhall enter more than one lot in the ſame claſs.

6 The premiums will be adjudged on Wedneſday, and all the prize ſtock muſt remain to be inſpected till one o'clock on Thurſday.

7 Such animals as the judges require ſhall be ſlaughtered.

8 In any caſe where doubt may ariſe, the committee ſhall decide.

9 The judges ſhall be ſworn, and no perſon ſhall act as a judge who is intereſted in the deciſion, or who is a candidate for any premium. There ſhall not be more than three judges for each deſcription of animals.

INSTRUCTIONS TO THE JUDGES.

You are to decide which is the beſt animal or animals in each claſs, having regard, in forming your judgment, to the excellence and utility of form, quality of fleſh, lightneſs of offal, propenſity to fatten, and early maturity. Alſo in ſheep, to quantity and quality of wool. Having ſigned your adjudication you are not afterwards to propoſe any change, nor to mention your deciſion, till announced by the Committee. You are not to diſcloſe the opinions of each other, and the deciſion of the majority previous to your report ſhall be concluſive. You ſhall withhold the premium where there ſhall not appear to be ſufficient merit. You ſhall number the lots in each claſs in the order of their merit

Howden Agricultural Society.

The Committee of this Society have directed the following premiums to be adjudged for the year 1804.

	£.	s.	d.
To the beſt coach-horſe ſtallion which ſhall be ſhown at Howden, on Saturday the 14th of April, with reſtriction to attend one day in the week, at Howden,	5	5	0
The beſt aged bull	5	5	0
The beſt two year old bull	3	3	0
The beſt one year old ditto	2	2	0
The beſt two year old heifer	2	2	0
The beſt one year old ditto	1	1	0
The beſt aged ram	5	5	0
The beſt ſhearing ram	2	2	0
The beſt boar	2	2	0

Certificates of the ages will be required.

The bulls, rams, &c. to be ſhown at Howden, on the laſt Saturday in July next.

N. B. The premiums for the year 1803 were adjudged,

To Mr. Thomas Wood's fat ox.
To Mr. William Scholefield's fat cow.
To Mr. Greenwood's ſtallion, Careleſs.
To Mr. Waterworth's aged bull.
To Mr. Blanſhard's 2 years old bull.
To Mr. Waterworth's 2 years old heifer.
——————— 1 year old ditto.
——————— aged ram.
To Mr. Mould's ſhearing ram.
To Mr. Waterworth's, jun. ſhearing ewe.
To Mr. Barker's tup lamb.
To Mr. William Scholefield's boar.

By order of the Committee,

Howden, April 2, 1804. SHOFFORTH Jun. and PIERSON.

Norfolk Agricultural Society.

The following premiums are offered by this Society, to be adjudged at the next general meeting at Swaffham, on the day preceding the Wool Fair at Thetford. No claim for any of which can be allowed, unleſs it ſhall have been made in writing, and delivered to the Secretary, at leaſt one week before the next meeting of the Committee, which ſhall be on Wedneſday the 6th of June.

For the encouragement of breeding ſtock in Norfolk.

1. To thoſe perſons who ſhall produce the beſt ſhearling rams of the Southdown, Leiceſter, or Norfolk breeds; for each of the reſpective breeds, being the beſt in competition, a piece of plate of Five Guineas value; or, without competition, of Three guineas value.

2. To thoſe perſons who ſhall produce the beſt pens of ſhearling ewes, conſiſting of three each, of the Southdown, Leiceſter, or Norfolk breeds; for each of the reſpective breeds, being the beſt in competition, a piece of plate of Five Guineas value; or, without competition, of Three Guineas value.

N. B. The fleaces of the rams and ewes muſt be produced at the ſame time.

3. To thoſe perſons who ſhall produce the beſt fleeces of Southdown, Leiceſter, or Norfolk wool; for each of the reſpective ſorts, being the beſt in competition, a plate of Two Guineas value.

4. To thoſe perſons who ſhall produce the beſt heifer, two years old, the beſt cow, not more than four years old, or the beſt bull three years old, for each a piece of plate of Five Guineas value.

5. To thoſe perſons who ſhall produce the beſt boar or ſow, for each, not exceeding two years old, a plate of Two Guineas value.

For the encouragement of Shepherds in Norfolk.

To thoſe ſhepherds who ſhall be found to have, upon any day within a fortnight before the 6th of June, the greateſt number of lambs, in proportion to their number of ewes, certified according to the form of a certificate, to be had by applying to the Secretary, and returned to him at leaſt one week before the 6th of June, a premium of

Two Guineas	If the number of ewes put to tup did not exceed	Two hundred,
Three Guineas		Three hundred,
Four Guineas		Four hundred,
Five Guineas		Five hundred,

And Six Guineas, if the number of ewes was ſix hundred or upwards.

Searing, March 31, 1804. H. JOHN PRIEST, Secretary.

Agricultural Society of the Hundred of West Derby, 1804.

EDWARD WILLIAM BOOTLE, Eſq. Preſident.

THOMAS ECCLESTON, Eſq.
RICHARD GIVILLYNE, Eſq.
THOS. PARKE, Eſq. } Vice Precidents.

Mr. JAS. OKILL,
Mr. JAS. WAREING,
The Rev. JOHNSON FATLOCK, } Inſpectors.

The Objects of this Society are,

CLASS I.

To obtain the beſt practical information on ſubjects of agriculture, and to extend the knowledge of it through the hundred.

CLASS II.

To excite a ſpirit of emulation and improvement, by the offer of premiums, as well honorary as pecuniary.

CLASS I. *omitted.*

CLASS II.—*For improving High Roads.*

To the acting ſurveyor or ſurveyors of the high roads, townſhip, or diviſion of a townſhip, in this hundred, who ſhall have made the greateſt improvement in high roads, proportioned to the means. A Silver Cup, value Eleven Guineas.

It is recommended to Surveyors of roads, to have the thiſtles and weeds growing on the ſides of the highways carefully cut down and deſtroyed, and to have the hedges neatly trimmed and cut low, and to have the courſes opened. Particular attention will be paid, in adjudging the reward.

CLASS III.

Premium 1. To the perſon who ſhall incloſe and improve, in the beſt and moſt effectual manner, the greateſt quantity of waſte and unincloſed land, not being leſs than forty acres. A Silver Cup, value Seven Guineas.

Pr. 2. To the perſon who ſhall effectually drain and incloſe the greateſt quantity of peat, moſs, clay, &c. not being leſs than 20 acres, after the moſt approved manner. A Silver Cup, value Seven Guineas.

Pr. 3d. To the perſon who ſhall regain the greateſt quantity of land from the ſea or rivers; and moſt effectually releaſe the ſame from the effects of the ſtream or tide, not being leſs than ten acres. A Silver Cup, value Seven Guineas.

Pr. 4. To the perſon owning or occupying land adjoining to the ſea or a river, who ſhall, in the moſt effectual manner, ſecure the greateſt length of the ſhore, proportioned to the force of the water or ſtream on the depth of the ſhore or bank, and not being leſs in length than 200 yards, ſo as to prevent the earth from being waſted away by the violence of the water. A Silver Cup, value Seven Guineas.

Class IV. *For draining, marling, and ploughing.*

Pr. 1. To the perſon who ſhall drain the greateſt quantity of incloſed ground, not being leſs than twenty-five acres, after the beſt and moſt approved method. A Silver Cup, value Seven Guineas.

Pr. 2. To the perſon who ſhall drain, in the moſt effectual manner, with ſtone or brick, the greateſt quantity of land, not being leſs than ten acres. A Silver Cup, value Five Guineas.

Pr. 3. To the perſon who ſhall drain the greateſt quantity of land with ſods or turf, in the moſt effectual manner, not being leſs than 20 acres. A Silver Cup, value Five Guineas.

Pr. 4. To the perſon who ſhall marl, in the moſt approved and judicious manner, the greateſt number of acres of moor, moſs, or heath, not leſs than thirty acres. A Silver Cup, value Ten Guineas.

Pr. 5. To the ploughman who ſhall, between the 1ſt of May, 1803, and the 1ſt of May, 1804, plough, in the beſt and moſt approvod manner, with any plough that goes with a pair of horſes only, the greateſt number of acres, not leſs than ten. Five Guineas.

Pr. 6. To the ploughman who ſhall plough, within the ſame time, and in the ſame manner, but *without a driver*, the greateſt number of acres, not leſs than ten. Five Guineas.

Class V. *Manuring and Watering.*

Pr. 1. To the perſon who ſhall raiſe the greateſt quantity of good compoſt, and ſhall therewith cover the greateſt number of acres, in proportion to his farm, ſuch farm not being leſs than thirty acres. A Silver Cup, value Five Guineas.

Pr. 2. To the perſon who ſhall, in the moſt judicious manner, lay a quantity of peat earth, with a ſufficient mixture of lime, pot-aſh, ſoaper's waſte, dung, &c. on not leſs than ten acres. A Silver Cup, value Seven Guineas.

Pr. 3. To the perſon who ſhall improve the greateſt quantity of meadow and paſture land, not uſually overflowed in time of flood, by throwing water over it in the moſt equal and judicious manner, the quantity of land not being leſs than ten acres A Silver Cup, value Seven Guineas.

Pr. 4. To the perſon who ſhall improve the greateſt quantity of land, not being leſs than ten acres, by ſowing and ploughing in any green crop. A Silver cup, value Seven Guineas.

Class VI. *For the Invention and Improvement of Implements of Husbandry, for the Discovery of Compost, and for Experiments on Grasses, and on Summer Soiling Cattle.*

Pr. 1. To the perſon who ſhall invent or improve any implement of huſbandry, that ſhall be moſt uſeful in ſaving labour or expence; ſimplicity and cheapneſs of conſtruction being deemed eſſential parts of its merits. A Silver Cup, value Seven Guineas.

Pr. 2. To the perſon who ſhall produce to the Society, at their July meeting, a one-horſe cart, which ſhall be moſt approved of for ſtrength, lightneſs, and cheapneſs of its conſtruction, and for its general fitneſs for uſe, both in the fields and on the roads. A Silver Cup, value Five Guineas.

Pr. 3. To the owner and occupier of any farm, who, in proportion to its ſize, and the uſual number of draught-horſes worked upon it, not being less than three, ſhall employ the greateſt number of ſingle-horſe carts, (as in the foregoing premium) in his huſbandrry buſineſs. A Silver Cup, value Five Guineas.

Pr. 4. To the tenant and occupier of any farm, who, in proportion to its ſize, and the uſual number of draught horſes worked upon it, ſhall employ the greateſt number of ſingle-horſe carts, in his huſbandry buſineſs. A Silver Cup, value Five Guineas.

Pr. 5. To the perſon who ſhall diſcover the cheapeſt and moſt productive ſort of compoſt for graſs-land. A Silver Cup, value Five Guineas.

Pr. 6. To the perſon who ſhall make the beſt experiment on different native graſſes. A Silver Cup, value Five Guineas.

Pr. 7. To the perſon who ſhall make and report to the Society at the July meeting, the moſt ſatisfactory experiments to aſcertain the advantages of ſummer ſoiling horſes, cattle, or hogs, with green food, in ſtable, houſes, ſheds, or littered yards, compared with feeding the ſame in the common manner. A Silver cup, value Seven Guineas.

N. B. The account muſt ſpecify the numbers of each, ſoiled; the effect on ſuch ſtock; the quantity of food eaten; and the land fed; with the quantity of litter uſed, and the dung, and the value of the dung made.

The premiums will be adjudged in July.

April 6, 1804. WM. STANISBREET, Secretary.

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of March, and the 20th of April 1804.

BANKRUPTCIES.

The Solicitors' Names are between Parentheſes.

BREWER, Thomas, Chippenham, linen-draper. (James, Gray's-inn ſquare

Buckley, William, New Delph in Saddleworth, merchant. (Battye, Chancery lane

Bradley, Joſeph, Wilton, timber-merchant. (Millett and Son, Terrace, Gray's-inn lane

Brears, Robert, Middleton, Cotton-manufacturer. (Hurd, King's Bench walk, Inner Temple

Carlier, John, and W. Wilkinſon, Stockport, muſlin-manufacturers. (T. C. and C. Jackſon, Walbrook

Clarke, Francis, Rotherhithe ſtreet, Rotherhithe, mariner. (Nind, Great Preſcot ſtreet, Goodman's fields

Curven, John, Cockermouth, horſe dealer. (Blacklock, Elm court, Temple

Chateauneuf, Louis, New court, Crutched friars, dealer and chapman. (Swain and Stevens, Old Jewry

Challenor, Thomas, Liverpool, victualler. Windle, Bartlett's buildings

Chadwick, Nathaniel, Bolton, innkeeper. (Foulkes, Bury place, Bloomſbury

Clarkſon, John, Thomas, Clarkſon, and Chriſtopher Clarkſon, Bedall, Linen manufacturers. Dynely and Sons, Gray's-inn

Draper, Richard, Biſhopſgate, grocer. (James, Gray's inn place

Flack, Hamilton, Vancouver, Manchester, dealer in malt. (Cheſhyre and Walker, Manchester

Fowkes, John, Buſh lane, wine and liquor merchant. (Vandercom, Buſh lane, Cannon ſtreet

French, George, Great Eaſt Cheap, broker. (Atcheſon, Auſtin friars

Fletcher, Joſiah, Stockport, Silkman. (Wadeſon, Barlow, and Groſvenor, Auſtin friars

Gill, George, Charles ſtreet, Berkeley ſquare, ſadler. (Greenwood, Manchester ſtreet

Gadſden, James, Biſhopſgate ſtreet, cheeſemonger. (Beaurain, Union ſtreet

Graham, James, Piccadilly, watchmaker. (Pinero, Charles ſtreet, Cavendiſh ſquare

Godfred, James, High ſtreet, Shadwell, ſlopſeller. (Aſhfield, High ſtreet, Shadwell

Gordon, John, Peghouſe, Painſwick, clothier. (Conſtable, Symond's inn, Shadwell

Hague, Thomas, Cannon row, Weſtminſter, money ſcrivener. (Howard, Henrietta ſtreet, Covent garden

Harding, William, Mildenhall, ſhopkeer. (Giles, Great Shire lane

Hurdis, James, Seaford, apothecary and druggiſt (Rhodes, Cook, and Handley, Clerkenwell

Holden, William, Skirbeck Quarter, coal merchant, (Allen and Exley, Furnival's inn

Harriſon, Edward, Eaſingwood, woollendraper. (Evans, Thavie's inn

Harries, John Owen, Swithen's lane, dealer in ale and porter. (Eaton, Birchin lane

Jeffreyes, John, Clapham Road, printſeller. (Anthony, Earl ſtreet, Blackfriars

Johnſon, Hugh, Newcaſtle on Tyne, carpenter. (Clayton and Scott, Lincoln's inn

Ives, Chapman, Coltiſhall, brewer. (Swain and Stevens, Old Jewry

Lee, Henry, Shire lane, Temple Bar, victualler. (Howard, Jewry ſtreet, Aldgate

Lowe, Ralph, Kinderton, miller. (Huxley, Middle Temple

Marriott, Thomas, King ſtreet, wine merchant. (Cokayne and Taylor, Coleman ſtreet

Millburn, Edward, Cook, John Hallowell, and Thomas Walmſley, North Shields, ſhipbuilders. (Atkinſons, Chancery lane

Makin, Joſeph, Bolton, cotton manufacturer. (Cheſhire and Walker, Manchester

Maxwell, Robert, George ſtreet, Minories, ſhip broker. (Hall and Bell, Bow lane, Cheapſide

No Need, Bartholomew, Great Sutton ſtreet, Clerkenwell, watchcaſe maker. (Robinſon, Charterhouſe ſquare

Newbold, John, Manchester, draper. (Foulkes, Bury place, Bloomſbury

Pearkes, Phineas, Worceſter, grocer. (Barker, Gray's inn

Pickering, John, jun. Runcorn, miller. (Wainwright, Hare court, Temple

Parker, James, Narrow wall, Lambeth, victualler. (Druce, Billiter ſquare

Proctor, John, Beal, cornfactor. (Wright and Pickering, Paper buildings, Temple

Phillips, Philip Jones, Oxford ſtreet, upholsterer. (Pearce and Dixon, Paternoſter row

Pink, William, (commonly called William Field) and John Birch, Charles ſtreet, Groſvenor ſquare, taylors. (Richardſon, Bury ſtreet, St. James's

Richardſon, Joſeph, Penrith, ironmonger. (Ireland, Staple's inn

Robarts, William, Hammerſmith, coal merchant. (Pewtreſs, Holborn court, Gray's inn

Rookley, Thomas, Bridgwater, baker, (Blake, Cooke's court, Carey ſtreet

Raven, William, Colcheſter, Linendraper. (Forbes, Ely place

Smith, John, and Robert Smithies, Pool, papermakers. (Allen and Exley, Furnival's inn

Schultz, William, and Philip Hunger, (trading in the firm of Schultz and Co.) Winchester ſtreet, Broad ſtreet, merchants. (Fiſher, jun. Bartlett's buildings

Smith, William, Weſt Bromwich, butcher. (Devon and Tooke, Gray's inn ſquare

Stevenſon, Archibald, Margaret ſtreet, Cavendiſh ſquare, engine maker. (Burgoyne and Fielder, Duke ſtreet, Groſvenor ſquare

Sergent, Francis, Wakefield, innkeeper. (Battye, Chancery lane

Stanton, Samuel, Birmingham, timber merchant. (Egerton, Gray's inn

Simons, Solomon, Lynn, Silverſmith. (Pearce and Dixon, Paternoſter row

Troke, John, New Sarum, cutler. (Carruthers, jun. Clement's inn

Tanner, Richard, Birmingham, upholder. (Pearce and Dixon, Paternoſter row

Winder, Thomas, and William Jewhurſt, Weſtminſter Bridge road, iron founders (Bigg, Hatton Garden

Wall, Thomas, Briſtol, common brewer. (Tarrant and Moule, Chancery lane

Wingate, Thomas, Market Raiſin, Linendraper. (Johnſon and Gaſkell, Gray's inn

Yeud, Henry, Upton on Severn, currier. (Watts, Symonds inn

DIVIDENDS ANNOUNCED.

ALLEN, Peter, Nantwich, innholder, April 19, final

Alpinall, Edward, Wigan, calico manufacturer, April 26

Alford, Fitzherbert, Southwark, woollendraper, May 18

Burrowes, Ann Farmer, Middle row, Milliner, April 21

Barnes Edmund, Leiceſter, woollſtapler, May 5

Bunter, Matthew, Penryn, linendraper, May 15, final

Barclay, George, and Charles Lalheld, Little Trinity lane, merchants, April 28

Bunce, John, Abingdon, ironmonger, May 2

Coleman, John, Fetter lane, painter, May 5
Cumming, Peter, Union court, Broad ſtreet, merchant, (ſurviving partner of Robert Cumming) April 21.
Crichton, Peter, Woolwich, victualler, April 21
Curtis, Michael, and James Henry Alexander Scott, Watling ſtreet, wine and brandy merchants, ſeparate eſtate of Curtis, May 5
Clark, Andrew, Liverpool, merchant, April 30, final
Crane, Charles Theomartyr, Bow lane, merchant, May 9
Cavelje, Abraham Zemon Doncher, Lancaſter, merchant, May 1
Clayton, Joſeph, Southwark, cheeſemonger, May 19
Colis, Robert, Woodford, corndealer, May 18
Cramer, John, Royal Spa Gardens, victualler and muſical inſtrument maker, May 5
Carr, Ralph Wood, and Robert Carr, Leeds, dryſalters, May 10, final
Campbell, Barnabas, Princes ſtreet, Ratcliff Highway, inſurance broker, May 19
Cornish, John, butcher, Deptford, May 18
Cowen, George, Hoxton Town, oil and colourman, May 18
Cartwright, John Newton, dealer, May 19
Davis, John, Fullwood's Rents, Holborn, victualler, May 5
Donniſon, Thomas, Preſcot ſtreet, merchant, April 17
Day, Benjamin, Biſhop Stortford, draper, May 5
Drayton, John, Carſhalton, victualler, May 5
Deahin, Robert, Wilton cum Twambrookes, merchant, May 14
Dobſon, Henry, Godmancheſter, miller, and Edward Dobſon, Brampton, miller, May 16
Fox, George, Henrietta ſtreet, Covent Garden, tailor, April 14
French, Henry, Broad ſtreet, St. Giles's, cardmaker, April 21
Fowler, William, Shefford, and Matthew Samuel Haynes, Greville ſtreet, inſurance broker, ſeparate eſtate of Fowler, May 12.
Fowler, John, Bewdley, printer, May 5.
Houndle, John, Cable ſtreet, Whitechapel, carpenter, April 28, final
Hook, James, and William Turner, Bridge Foot, Weſtminſter, coal merchants, ſeparate eſtate of Hook, April 28, final.
Houlroyd, Joſeph, Loughwood, Halifax, dealer, April 23
Harding, Mary, and John Harding, Swanburne, dealers, May 1
Hardy, William, Virginia-ſtreet, maſter-mariner, April 28, final
Hopwood, David, Union ſtreet, Mary-le-bonne, grocer, April 10, final
Harriſon, Thomas, Jun. Landford Hall, timber merchant, May 10
Harriſon, John, Worthington, ſail maker, May 12
Jacob, William, Poole, ſhopkeeper, April 17
James, Benjamin, Northampton, bootmaker, April 30
James, Samuel, Briſtol, pawnbroker, May 21, final
King, Thomas Preſcott, Weſt Cowes, linendraper, April 21
Kirkpatrick, Thomas, Church paſſage, Cateaton ſtreet, April 28
Lake, William, (partner with John Liſt) Biſhopſgate ſtreet, merchant, April 17.
Leveridge, William, Shoreditch, cabinetmaker, April 17
Medford, Macall, Finſbury ſquare, merchant, (partner with John Liſle, jun. of Philadelphia,) April 21
Malcom, Samuel, Old Broad ſtreet, broker, April 17, final
Mure, Hutchinſon, Robert Mure, and William Mure, Fenchurch ſtreet, merchants, May 12.
Maſſey, Charles, New ſtreet, tower, wharfinger, May 29
Naſh, Thomas, Warwick ſtreet, Plumber, April 21
Pierce, John, Bread ſtreet, warehouſeman, May 26, final
Peckover, Harris, Ipſwich, woollendraper, May 8, final
Pierpoint, John, Bunhill row, carpenter, May 18
Richardſon, Thomas, waterſide, Southowram, merchant, May 17, final
Ruſſell, George, Birmingham, merchant, April 28
Rawlins, James, Red Lion ſtreet, hardwareman, May 15
Roſs, William, late of Waſhington in America but now of Liverpool, merchant, May 10
Roſs, Henry (late partner with William Roſs) Liverpool, merchant, May 10
Roberts, Edward, Bedford court, woollendraper (trading in the firm of Boyden and Roberts,) May 12
Scott, Charles Elliott, Upper Berkeley ſtreet, bookſeller, March 26
Scarfe, James Robert, King's Lynn, brewer, April 18
Secker, Mary, Lynn, linendraper, April 18, final
Sprigg, John, Birmingham, linendraper, April 21
Spender, William, Birmingham, draper, April 27, final
Smith, Richard, late of Whitchurch, money ſcrivener, April 25
Sommervail, James, Liverpool, merchant, May 12
Serle, John, Shepton Maſlet, clothier, June 8
Self, Stephen Haleſworth, commerchant, May 14
Standiſh, Samuel, Pontefract, hoſier, May 14
Thomſon, William, Serle ſtreet, mariner, April 21
Thomſon, Andrew, and Bartholomew White, Bow lane, wholeſale hoſiers, April 28
Thomas Thomas (partner with John Hunter and Peter Latham) Camomile ſtreet, Merchant, May 11
Tanner, Nicholas, St. Decuman's, maſter, May 7
Toulmin, Oliver, Eſſex ſtreet, navy agent, April 17
Wilde, James, John Watts, and John Boddy, Upper Thames ſtreet, wholeſale grocers, April 21
White, William (partner with John Jarvis) Southampton buildings, brandy merchant, April 18
Witney, Francis, (otherwiſe Nicholas) Woodmancote, currier, April 23, final
Wardle, Thomas, Trump ſtreet, warehouſeman, May 15
Wilſon, Richard, Bread ſtreet, merchant, May 5
Willy, John, Oxford ſtreet, trunk maker, May 15, final
Warner, Henry, Briſtol, baſket maker, May 19
Younghuſband, William, Colcheſter, draper, April 21

Prices of Raw Hides, Hay and Straw, &c. for April, 1804.

	First Week	2d Week	3d Week.	4th Week.
Raw Hides.	*s.d. s.d.*	*s.d. s.d.*	*s.d. s.d.*	*s.d. s.d.*
Beſt Heifers & Steers, pr ſt.	3 8 to 4 0	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Middling — —	3 4 to 3 6	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Ordinary — —	3 0 to 3 2	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Market Calf — —	10 6	—	—	—
Eng. Horſe — —	14s to 17s	—s to —s	—s to —s	—s to —s
Sheep Skins — —	4 0 to 7 0	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Lamb Skins — —	2 6 to 3 6	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*
St. James's—Hay —	4 16 0	4 15 0	4 14 6	4 16 0
Straw —	1 14 0	1 14 6	1 13 0	1 13 0
Whitech.—Hay —	4 15 6	4 18 0	4 17 6	4 17 0
Clover —	5 18 0	5 15 6	6 — 0	5 15 0
Straw —	1 14 0	1 17 0	1 18 6	1 12 0
Newbury.				
Wheat — — —	42sto58sod	42s to 57s	40sto57s6d	40s to 59s
Barley — — —	20sodto24s	21sto24s6d	21s to 26s	24s to 27s
Oats — — —	20s to 26s	19s to 26s	20s to 26s	21s 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
Saliſbury.				
Wheat — — —	50s to 54s	49s to 54s	50s to 56s	50s to 56s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	21s to 24s	22s to 25s	22s to 26s	22s to 26s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — — —	20s to 24s	20s to 24s	20s to 25s	21s to 25s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s

Prices of Hops, Meat, Seeds, Leather, Tallow, &c. for April 1804.

Price of Hops.	First Week	2d Week	3d Week	4th Week
Bags.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Kent — —	100 to 114	100 to 118	100 to 118	96 to 118
Suſſex — —	100 to 108	100 to 112	100 to 110	95 to 110
Eſſex — —	100 to 108	100 to 110	100 to 100	95 to 110
Pockets.				
Kent — —	108 to 128	110 to 130	110 to 130	110 to 126
Suſſex — —	105 to 120	110 to 124	106 to 120	100 to 120
Farnham — —	160 to 189	180 to 168	180 to 200	160 to 200
Seeds.				
Red Clover per cwt. —	40 to 86	40 to 86	40 to 30	50 to 76
White Clover, ditto —	70 to 126	70 to 120	40 to 112	40 to 118
Trefoil, ditto —	20 to 67	20 to 63	20 to 52	18 to 50
Carraway ditto —	— to 75	— to 75	— to 75	— to 75
Coriander ditto —	16 to 20	16 to 20	16 to 20	16 to 20
Turnip, (per buſhel) —	22 to 24	22 to 24	22 to 24	22 to 24
White Muſtard Seed —	6 to 7	8 to 9	8 to 9	8 to 9
Brown ditto — —	8 to 9	14 to 16	14 to 16	14 to 16
Canary Seed	14 to 16	6 to 7	6 to 7	6 to 7
Rape Seed, (per laſt) —				
Meat at Smithfield,				
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 4 to 5 6	4 4 to 5 8	4 4 to 6 0	4 8 to 5 8
Mutton — —	4 8 to 5 8	5 0 to 6 0	5 0 to 6 0	5 0 to 6 0
Veal — —	5 0 to 6 4	5 0 to 6 6	5 0 to 6 6	4 8 to 6 0
Pork — —	3 4 to 4 4	3 8 to 4 8	3 8 to 4 8	3 8 to 4 8
Lamb — —	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0	6 0 to 8 0
Head of Cattle—Beaſts about	1,800	1,800	1,800	1,600
——— Sheep	7,500	8,500	8,000	7,500
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	21 to 21½	21 to 21½	21 to 22½	21 to 22
Ditto, 60lb. to 65lb each	23 to 24	23 to 24	23 to 24	23 to 24
Merchants Backs —	— to 21	— to 21	21 to 21½	21 to 21½
Dreſſing Hides —	22 to 23	22 to 23	22 to 22½	21 to 22½
Fine Coach Hides —	23½ to 24½	23½ to 24½	23 to 24	22½ to 24
Crop Hides for cutting	22 to 23½	22 to 23½	22 to 23½	22 to 23½
Flat Ordinary —	21 to 21½	21 to 21½	21 to 22	21 to 22
Calf Skins, 30 to 40lb. p.doz.	28 to 32	28 to 32	28 to 34	28 to 34
Ditto, 50lb. to 70lb. do.	27 to 33	27 to 33	28 to 33	28 to 33
Ditto, 70lb. to 80lb. do.	27 to 30	27 to 30	29 to 30	29 to 30
Sm. Seals (Greenland)	48 to 54	48 to 54	48 to 54	48 to 54
Large do.	51 to 71	51 to 71—s	51 to 71 10s.	51 to 71 10s
Tanned Horſe Hides	20s to 32s	20s to 32s	20s to 34s	20s to 34s.
Goat Skins *per* doz.		—s to —s	—s to —s	—s to —s
Price of Tallow.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
St. James's Market —	4 8	4 2	4 2	4 3
Clare Market — —	4 3	4 2	4 2	4 3
Whitechapel Market —	4 2	4 2½	4 2½	4 1½
Per ſtone of 8lb. Average	4 2	4 2	4 2	4 2½
Town Tallow — —	71 6	— 0	72 0	71 6
Ruſſia ditto (Candles) —	72 0	71 0	71 0	71 6
Ruſſia ditto (Soap) —	71 0	70 0	69 6	70 2
Melting Stuff — —	60 0	57 0	58 0	59 0
Ditto rough — —	42 0	42 0	40 0	40 0
Graves — — —	14 0	14 0	14 0	14 0
Good Dregs — —	11 0	11 0	11 0	11 0
Yellow Soap — —	80 0	80 0	80 0	80 0
Mottled ditto — —	84 0	84 0	88 0	88 0
Curd ditto — —	88 0	88 0	92 0	92 0
Candles, per dozen, —	11 0	11 0	11 6	11 6
Moulds — — —	12 0	12 0	12 6	12 6

LONDON PRICES OF GRAIN for *April*, 1804.

MARK-LANE, *Monday, April 2.*

WE had a large ſupply of Wheat in this day's Market, which occaſioned a reduction of full 1s. per quarter. Barley comes to hand in abundance, but that article, and Malt, remain without any material variation. Peaſe ſell heavily. Beans come ſparingly to Market, but are not dearer. We have large arrivals of Oats, but the demand being conſiderable, prices are quite as high as laſt week.

Price of Grain, on board Ship, as under.

Wheat	27s to 54s	Malt	48s to 55s od	Grey Peas	27s to 31s od
Fine	54s to 56s od	Oats	17s to 23s	Beans, new	27s to 32s
Rye	28s to 31s	Polands ditto	24s to 25s od	Old ditto	—s 36s
Barley	19s to 24s od	White Peas	30s to 36s od	Ticks	24s to 29s

Monday, April 9.

Although the ſupply of Wheat for this day's Market was not great, it more than equalled the demand; a few fine ſamples reached laſt Monday's prices, but the ſales, upon the whole, were dull, and at a reduction of 1s. per quarter on the fine, and more on the inferior ſorts.—Barley is likewiſe cheaper: Malt the ſame. Both ſorts of Beans are 2s. per quarter lower; and Peaſe of the different kinds have not amended in price ſince our laſt.—We have a tolerable ſupply of Oats, which ſell at ſomething under laſt week's figures. In conſequence of the decline in Wheat, Flour is rather cheaper.

Wheat	26s to 52s	Malt	47s to 54s od	Grey Peas	27s to 30s od
Fine	52s to 55s od	Oats	17s to 22s	Beans, new	25s to 31s od
Rye	27s to 30s od	Polands ditto	23s to 24s od	Old ditto	34s od
Barley	18s to 23s od	White Peas	30s to 35s od	Ticks,	23s to 31s od

Monday, April 16.

Although we had a tolerable ſupply of Wheat in for this day's market, the call was pretty briſk at firſt of the morning, and at rather better prices than laſt quoted; a heavineſs, however, prevailed towards the cloſe, and the ſales finiſhed at very little variation from laſt Monday.—Barley felt a little riſe, and Malt fully kept its price. White Peaſe have rather declined, but Grey are dearer, having a ſhort ſupply. The two ſorts of Beans are rather cheaper; as are Oats, of which laſt mentioned article we have ſome foreign veſſels arrived.

Wheat	28s to 52s	Malt	49s to 55s od	Grey Peas	28s to 31s od
Fine	53s to 55s od	Oats	17s to 22s	Beans, new	27s to 32s od
Rye	27s to 30s od	Polands ditto	23s to 24s od	Old ditto	32s od
Barley	18s to 23s 6d	White Peas	27s to 34s od	Ticks	24s to 32s od

Monday, April 23.

We have not had a large ſupply of Wheat for this morning's Market, and the fine has advanced full 1s. per quarter ſince our laſt; the ordinary and inferior ſorts, nevertheleſs, are as dull and low as laſt Monday. With a middling ſupply of ply of Barley, we have a briſk ſale, at one and two ſhillings per quarter dearer. Malt likewiſe finds ready ſale, and at better prices. In other Grain, viz. Peaſe and Beans of both ſorts, and Oats, they are all ſomething dearer, as may be noted in the prices below.

Wheat	28s to 53s	Malt	51s to 56s 6d	Grey Peas	29s to 32s od
Fine	54s to 56s 6d	Oats	18s to 23s	Beans, new	28s to 34s od
Rye	28s to 31s	Polands	24s to 25s 6d	Old ditto	37s od
Barley	21s to 26s od	White Peas	28s to 35s od	Ticks	24s to 32s od

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

From the Returns received in the Week, ended APRIL 14, 1804.

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	51	7	32	0	23	10	25	1	31	6	34	3		
Surrey	55	8	28	0	24	10	25	2	34	6	35	0		
Hertford	49	8	35	6	22	6	20	6	32	0	33	9		
Bedford	49	8	30	9	21	0	21	9	29	6	35	2		
Huntingdon	43	11			19	8	19	4	27	2	31	11		
Northampton	50	10	30	0	20	8	19	6	29	6	31	0		
Rutland	51	0			22	0	19	6	29	0			57	3
Leicester	54	0			25	1	19	6	24	5	30	1	35	4
Nottingham	55	8	30	0	26	8	21	0	33	6				
Derby	59	8			26	2	20	10	37	10	41	0	27	0
Stafford	55	7			26	9	22	1	42	6			32	6
Salop	50	9	39	2	27	6	23	4	44	5	45	9	63	7
Hereford	44	2	30	4	23	11	23	11	42	8	41	3	59	3
Worcester	49	10			27	4	27	4	40	5	40	8		
Warwick	54	9			27	7	23	10	37	7	50	0	41	8
Wilts	53	0			25	2	23	0	40	0	38	0		
Berks	53	3			23	0	24	1	34	6	33	2		
Oxford	49	4			22	10	21	8	31	7	34	11		
Bucks	51	5			21	8	22	8	31	8	38	9		
Brecon	48	0	32	0	24	0	21	4			36	8	32	1
Montgomery	48	11			22	4	16	6			38	5	36	5
Radnor	45	5			25	2	21	10						

Maritime Counties.

Essex	51	4	29	6	21	6	24	4	30	3	28	6		
Kent	51	6			23	9	26	0	31	6	36	0		
Sussex	54	2			25	0	25	6						
Suffolk	47	11			20	6	21	9	27	8	30	10	49	0
Cambridge	45	1			28	4	16	0	26	5	28	0		
Norfolk	45	10	25	3	19	2	18	3	26	9	28	11		
Lincoln	45	10	24	6	21	10	17	7	29	1				
York	46	11	32	8	22	5	18	11	32	2	51	4	39	3
Durham	46	8			26	8	20	3						
Northumberland	44	5	33	4	20	10	20	1	28	0			14	9
Cumberland	53	10	40	8	25	6	21	10						
Westmorland	50	2	40	0	26	10	21	2						
Lancaster	56	9			27	10	24	0	42	3	54	0	19	2
Chester	51	3			28	11							18	9
Flint														
Denbigh	55	1			26	2	20	4	41	8	35	3	35	7
Anglesea														
Carnarvon	58	8			24	0	16	4					36	7
Merioneth	52	5	44	0	27	2	20	5					33	10
Cardigan	52	0			19	0	13	7						
Pembroke	46	1			20	6	14	10						
Carmarthen	58	6			25	3	14	8						
Glamorgan	50	4			25	1	21	4						
Gloucester	48	3			23	10	23	7	33	7	35	6		
Somerset	50	5			24	9	18	10			44	0		
Monmouth	48	10			24	10								
Devon	54	7			25	3	20	8						
Cornwall	53	5			27	5	20	0						
Dorset	52	2			24	8	25	1	42	8	44	0		
Hants	52	9			23	3	24	6	35	10	38	0		

PRICES OF COALS AT THE COAL EXCHANGE, LONDON,
For APRIL, 1804.

Names of Coals.	Mon. 19th	Wed. 21st	Frid. 23d	Mon. 26th	Wed. 28th	Frid. 30th	Mon. 2d	Wed. 4th	Frid. 6th.	Mon. 9th	Wed. 11th
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d	s. d.
Adair's Main							50 6	46 6			
Baker's Main											
Bedford Main											
Benton	50 6	55			46		47			47	
Biddick Main											
Bigg's Main	53	56 6	54				49	49		49	
Bladon Main											
Blyth	51 6										
Boundry											
Bourn Moor	49			48 6			45	45		45	
Brandling											
Birtley											
Byker											
Byker, High & Low											
Cowpen	52	55						48			
Derwent											
Eden Main		52									
Eighton Main											
Flockton											
Greenwich Moor											
Haigh Moor											
Hartley	51 6			48 6			47 6	47 6			
Heaton Main	52 6		54		50		49	49		49	
Hebburn Main	52 6				50		49			49 6	
Holywell											
Kenton Main	52 6						48			48 6	
Lambton's Low dit.											
Lawson's Main											
Morley Hill											
Montague Main											
Mount Moor											
Murton											
Murton High Main											
Newbottle											
New Tansfield											
Pitt's Tansfield M.							46 6			46 6	
Perry							50				
Pontop											
Percey											
Rectory											
Ruffel's Main											
Sheriff Hill											
South Moor											
Stanley Main											
St. David											
Team											
Tyne Main											
Uſworth Main											
Walbottle Moor											
Walker	52 6			53	50		49 6	48		48 6	
Wall's End	53 6	57 6		54			50	50 6		51	
Warwick											
Wharton											
Willington							49	48		59	
Wylam Moor	46										
Wentworh											
Whitefield											
Main Woolen											

Nothing done.

Nothing done

Nothing done

A TABLE of the Prices of STOCKS in *March* 1804.

1804	Bank Stock.	3 per Ct. Red.	3 per Ct. Consols.	4 per Ct. Consols.	5 per Ct. Navy.	5 per Ct. Loyalty	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Ann.	Irish 5 pr. Cent	Omnium	India Stock.	English Tickets.	Consols for Account
Feb. 27	152¾	55¼	55⅛	72⅜	88⅝	94¾	16 3-8			9 7-16				17 8 0	55⅛
28	153	55⅛	55⅜	72½	88⅝	94⅝	16 7-16			9 7-16			169	17 8 0	55¼
29	154	56	55½	72⅞	88½	94¾	16½		54⅝				169¼	17 8 0	55⅜
1			55⅝	73	88¾	94⅞			54⅞					17 8 0	56
2	153½		55⅝	73⅛	88⅞	95¼		3 7-16	54⅞	9½			169¾	17 8 0	56
3			55⅝	73⅛	89⅛			3 7-16	54⅞	9½			170½	17 8 0	55⅞
5			55¾		89⅛			3 7-16		9 9-16				17 10 0	56
6			55¼		89⅛				55					17 10 0	
7			56⅛		89¼					9 9-16				17 10 0	56½
8			56¼		89¼				55⅜	9⅝				17 10 0	56⅛
9			56⅜		90⅞				55⅝	9⅝				17 10 0	56⅜
10			56¼		89½				55⅞					17 10 0	56⅝
12			56⅜		89⅝					9⅝		2 1¾		17 10 0	56¾
13			56⅛		89⅞				55¾	9 11-16		1½ 1¾		17 10 0	56⅝
14			57⅛		90					9⅝		1 1¾		17 10 0	57¼
15			56⅞		89⅞				56⅜	9⅝				17 10 0	57¼
16			57⅛		90				56¼	9⅝				17 10 0	57⅜
17			57⅛		90				56⅜					17 10 0	57⅛
19			57		90					9⅝				17 10 c	57¼
20			57¼		89⅝				56⅛					17 10 0	56⅜
21			56⅝		89¼				55⅞	9⅝				17 10 0	56¾
22			56½		90									17 10 0	56⅝
23			56½		89¾				55¾	9 11-16				17 10 0	56¾
24			56⅝		89⅞				56	9 11-16				17 11 0	56⅝
26			56⅝		89⅞									17 11 0	
27			56½		89⅞				55¾	9 5-8				17 11 0	56⅝
28			56½		89¾				55⅞						

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

TO OUR CORRESPONDENTS.

ON account of the recent Death of THOMAS SKIP DYOT BUCKNAL, Esq. Member for Saint Alban's in the late parliament, it is necessary to mention that, he being the author of the papers signed Wheat × Sheaf in this magazine, they must unavoidably be discontinued. His object was to procure an Act, that cottagers might be supplied with a sum of money at seven and a half per cent. interest, in order, by their industry, to inclose the waste lands of the kingdom. At the same time that we signify our concern that any useful project should be impeded by so calamitous an event to the author, we acknowledge that the scheme could not receive our approbation, and that we inserted the communications rather with a view to have the matter discussed than to have the measure adopted.

We have received the continuation of the article from Asiaticus, which will be introduced into our next number.

The paper from Rouen is received vîa Husum, and will be introduced into the next number. We hope the eight preceding volumes of the work were punctually received by the same channel, through the house of Messrs. Pierre, Fianee, & Co. Booksellers at that place.

A Novice, in our next.

We invite the attention of our correspondents to the article from G. S. on the fine wool of Botany Bay, as we shall be happy to convey the earliest information on that important subject, which at present is so little known.

We wish to prove our gratitude, at all times, to the Secretaries and Members of those agricultural Societies who transmit to us their proceedings; but we wish to receive them at an earlier period of the month. Those of Howden and of the Hundred of West Derby, did not reach us till the 28th; consequently we could only insert them in part, and defer the remainder till our next.