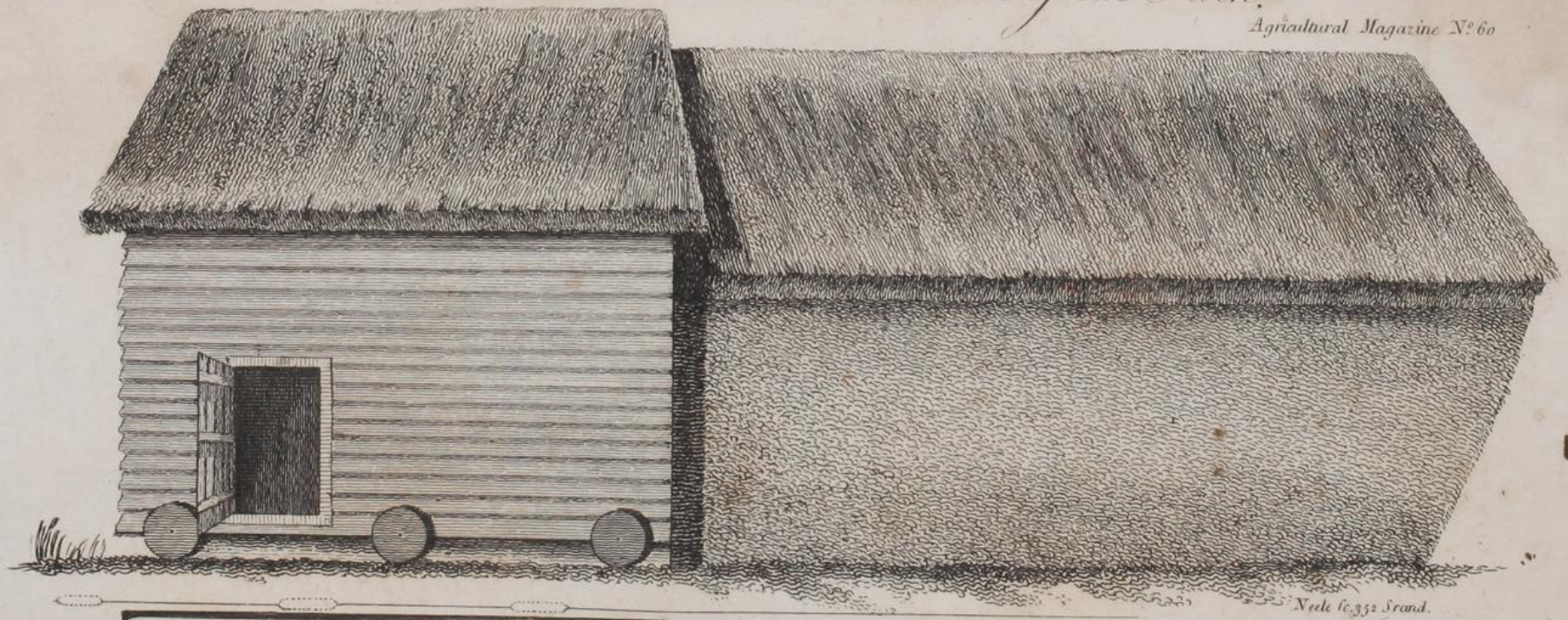
The moveable Barn in Windsor Great Park.

Agricultural Magazine No 60



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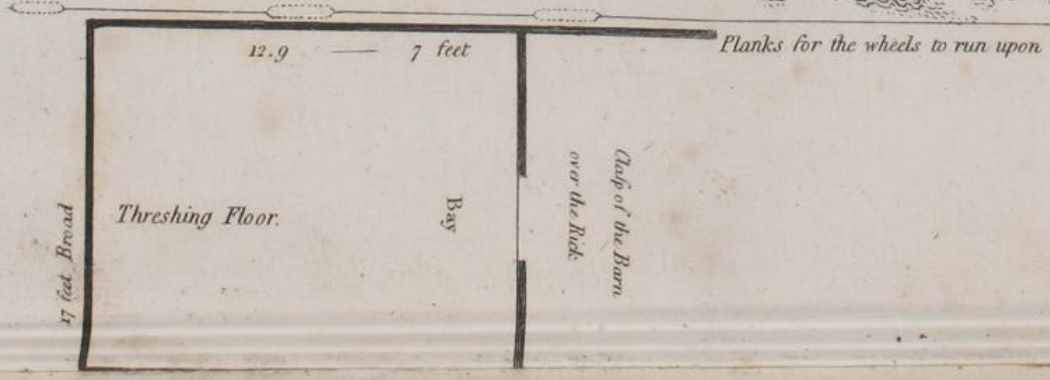

THE

AGRICULTURAL

MAGAZINE,

FOR

1804.

A MONTHLY PUBLICATION,

DEVOTED TO

Farmers, and to Rural Affairs.

"He that causes two Blades of Grass to grow where only one grew before, is, so far, a Creator."
SWIFT.

VOL. XI.

FROM JULY TO DECEMBER,

INCLUSIVE.

LONDON:

PRINTED AND PUBLISHED BY V. GRIFFITHS,
PATER-NOSTER-ROW.

PREFACE.

ANOTHER Volume of this MISCELLANY *has been, now, concluded under the patronage of a generous and discerning Public.*

In a varied and interesting correspondence; in the diligent record of every important incident of the progress of AGRICULTURE *and* RURAL ECONOMY *of the time; in the original communication of* DISCOVERIES *and* INVENTIONS *in the practice of* HUSBANDRY; *in* EFFORTS *to* EXCITE *the Farmers and Landholders of Great Britain and Ireland to new energy in Agricultural pursuits; the best security for the perpetual prosperity of the Empire; in attentions to* REVIVE *useful* OLD *practices; in care to* IMPROVE *and* DISSEMINATE *the* NEW; *we would humbly hope, that this* VOLUME *will not be found to fall short of the Merits of any of our preceding ones, nor to yield to any similar contemporary publication on the same or kindred subjects.*

We cannot arrogate to ourselves any high praise on account of these advantages. We owe to the favour of our Correspondents almost every thing in the Voloume that is of value. The most enlightened and patriotic men in this Country, have seen, that, by a MISCELLANY *such as ours, incalculable benefit might be done towards the improvement of the* GRAND STAPLE INDUSTRY, *of the* MOST SUBSTANTIAL WEALTH, *of the most* FIXED *and* LEAST DESTRUCTIBLE *Capital of the* NATION. *They have perceived, that, thus to associate* LITERATURE *even with the* HUMBLE *and* GROSSEST BRANCHES *of* RURAL ECONOMY, *is, to operate indirectly indeed, but more powerfully than in any other way possible, towards the General Literary Instruction of all who share the toils and gains of Husbandry. They have discerned, that our plan, our zeal, and the ingenuous honesty of our endeavours, deserved a preference above the efforts of those who offered themselves to notice, merely as our Imitators. And, they have kindly enabled us to main-*

tain the utility and reputation of the MISCELLANY, *by Letters, Hints and Essays which must be always read with pleasure and advantage.*

While we return our thanks for the past favours of our Readers and Correspondents, we have to intreat a renewaal and continuance of them for the opening Year. It will be remembered by Farmers and Landholders of true public spirit, that in a time of War, there is always peculiar difficulty to obtain casual support *to undertakings which belong properly to the peaceful and domestic arts. Those who take a* direct, express, and immediate interest *in such undertakings are, therefore, at a time like this, to be more particularly looked to for their encouragement and support. We hope, then, to be pardoned, if we call upon our Friends, whether as Correspondents or Readers, not only to continue to us their own wonted attentions, but actively to recommend to the favour of all others with whom they have influence, a Publication which they themselves disdain not to patronize.*

THE

AGRICULTURAL MAGAZINE.

No. LX.] JULY, 1804. Vol. XI.]

ON A MOVEABLE BARN, CONTRIVED AT THE ROYAL FARMS IN WINDSOR GREAT PARK.

[WITH A PLATE ANNEXED.]

To the Editor of the Agricultural Magazine.

Sir,

I Acknowledge myself to be a man of prejudice: I have no portion of that republican spirit which considers every thing valuable and important, in proportion to the meanness and vulgarity of its origin. I have read with rapture the details from imperial China, in which the sovereign of that vast dominion is represented at an annual festival as guiding the plough with his own hand. Every subject of this country who has felt any thing of the loyal spirit, will have heard with corresponding sentiments of the beloved Monarch of this country, who has condescended to the lowly situation of a farmer, and who has taken the lead in some of the most essential improvements in British agriculture. I know that this act of humiliation, has exposed the most elevated character of this nation, to the censure of the proud, and to the ridicule of the vain, but Cincinnatus will be remembered when Lucullus is forgotten; and the Prince who connects the abundance enjoyed by his people with the glory of his crown, will be both loved and revered, and find his security and honour established in the hearts of his people. These few observations, the result of affection and veneration for the most distinguished farmer of this country, have been incidentally suggested to my mind by the consideration of the numerous benefits derived from the experiments on the royal farms in Windsor Great Park. Of one of these I have sent you a drawing, which I hope you will think worthy of a place in your next number. It is a moveable barn, standing on wheels, and calculated for drawing over a rick of corn. In this little edifice, a barn floor is contrived, and its utility is obvious, in a farm where any portion of the arable land is situated at a distance. The external part is deal, and may be covered with marsh reed, and the whole expence from 30l. to 60l. according to the charge of workmanship and materials, and the intention of the farmer to have the building more or less complete.

I am sure your intelligent readers will find it quite unnecessary for me to enlarge on the expence of carriage that will be saved, on the protection that will be given to the broken rick, on the waste that will be avoided, and on the several advantages in other respects that will be derived from the adoption of this expedient.

Old Windsor, I am, Sir, yours,
July 2, 1804. J. P.

THE UTILITY OF EXPERIMENTAL FARMS.

To the Editor of the Agricultural Magazine.

SIR,

YOUR correspondent Agricola Meridionalis seems to have taken a pretty wide scope in assuming, "that almost every acre of our territory could be made ten times more productive," (No. 59, p. 417.) and yet I am not a little inclined to concur with him in opinion.

Admitting this, with *many* grains of allowance however, it would result, that the means are not wanting to us of providing for an increasing population, more consonant to the feelings of our nature, than by resorting to the system suggested by the Rev. Mr. Malthus, in a late publication of his, entitled, "An Essay on the Principle of Population," &c.

I perfectly unite in sentiment with the late worthy baronet, Sir John Call, that "*the density of our population hath increased, is increasing, and ought not to be diminished*;" because I conceive that our national energy and importance will ever be in the ratio of such density; none, however, ought to be idle, but every one usefully employed.

It is on all hands allowed, that *the culture of the soil,* even in this country, is but very imperfectly uuderstood, insomuch that it is no uncommon observation by men of the most extensive and enlightened practice, that *the science is merely in its infancy.*

That it has made some progress, particularly within the period of about forty years past, I can scarcely doubt; but I really persuade myself *it is* highly susceptible of advancing with tenfold celerity, when we bring into action a moderate portion of the means in our power. I mention nothing of the interposition of government on the subject, further than that probably some occasional pecuniary stimulus from that quarter might tend to facilitate the effect.

The establishment of provincial societies, somewhat in the manner in which they actually exist, would appear to be the proper and rational mode of proceeding in the first instance: but to promote improvement in a spirited and effectual

degree, it would seem expedient to attach to them certain portions of land in the nature of experimental farms. Reading, unaccompanied by experimental research, cannot be supposed to form the agriculturist such as he ought to be: and if lands for the purpose of conducting experiments in all the various branches of agriculture and rural œconomy were attached to these institutions, I conceive it to be highly probable that the science would advance more towards a system of perfection in a period of seven years, than otherwise in the course of a century.

Of the fugitive experiments made by individuals, on the properties of new plants, in ascertaining a superior and more correct method of cultivation, by far the greater part are lost to the public, and that even of such as may have proved successful; and which, if divulged, might probably have been in many instances of singular importance to the interests of society.

But unsuccessful experiments may also have their uses. A correct recital of the steps which may have led to the result, might serve to shew that *such an experiment*, at a fruitless expence, ought no more to be repeated on the one hand; and on the other, that *such a one* might have succeeded by something of addition, of retrenchment, or other variation in the mode of conducting the process.

Of this class of experiments, however, the public are to remain in total ignorance; for resolution is wanting in the generality of men to volunteer a display of their supposed deficiencies, in whatever degree they might eventually prove salutary to society: nor is this wonderful, when it is considered that the exhibition of our best performances requires the stimulus of honour or of profit.

To public bodies, constituted in the manner before mentioned, the objection would by no means apply; on the contrary, it would become the prime object of *their* pursuit to record, and to disseminate for the instruction of the public, the circumstances, with the result of every experiment to be conducted.

Experiments in agriculture, with a view to general improvement, ought indeed, in the very nature of things to be conducted and registered by public bodies. How much time, how much patience, how much attention doth a *single* experiment frequently require! and, after all, how often is repetition necesary to a satisfactory conclusion!

We have known an individual, it is true, in whom were united the patience, the ability, the activity of mind, and all the requisites we may generally expect to meet in an aggregate body; but alas! in the prime of manhood, in the full glow

of the most ardent zeal to ameliorate the condition of the humanrace, *HE* was lost to his sorrowing country!

Bath, I remain, Sir, your obedient servant,
12 *July*, 1804. NEHEMIAH BARTLEY.

ON SHEEP AND WOOL.

To the Editor of the Agricultural Magazine.

SIR,

ABOUT twelve or fourteen years ago, a number of noblemen and gentlemen in this northern part of the kingdom, actuated by the most laudable and patriotic motives, formed themselves into a society for the improvement of British wool. In what manner they proceeded I do not exactly know, but am informed, that in some very extensive mountainous districts, kyloes have been succeeded by sheep, the black-faced hairy-woolled kind by the Cheviot breed; and that the wool of the latter valuable species of highland sheep, has, in some places, been considerably improved by crossing with the South Down and some descendents of the Spanish breed. About six or eight years ago, another society was formed of noblemen, gentlemen, and farmers, in the neighbouring counties of Roxburgh and Northumberland, for the purpose of improving the Cheviot breed of sheep, and I understand they have been pretty successful, principally in improving the *form* of the animal, which was deemed too narrow and not sufficiently deep in the fore-quarters. This improvement, however, has not been effected by crossing with the South Down and other finer woolled sheep, but by selecting the best of the Cheviot breed. These, it is asserted by the breeders of the new Leicester sheep, were descended from this large kind; and after the fourth or fifth cross, put to Cheviot ewes. The Cheviot breeders, however, generally contend against this assertion. The lambs of the South Down breed have, I am told, been found too tender for the coarse, wet, and exposed highland pastures in these northern parts; and from the few trials which have been made on improved lands in more sheltered situations, an opinion prevails that they do not attain maturity so soon as the new Leicester kind, and that notwithstanding the superior value of the wool of the South Downs per lb. their *fleeces* are but little, if any thing, more valuable than those of the larger breed *, which, upon the whole, are deemed the most profitable. Whether proper experiments have been made and conducted with sufficient accuracy, I cannot at present say, but I conceive that the re-

* Upon inclosed and very productive lands, the fleeces of considerable flocks of the new Leicester breed, weigh about 8 lbs. on an average. At present they are worth from twelve to thirteen pence per lb.

spective merits of the different breeds cannot be correctly known, unless the consumption of food be particularly attended to, as well as the value of the carcase and fleece. From the excessively high rents of land and wages of labourers, &c. in this quarter of the country, and the reduced prices at which farmers have for some time past been obliged to sell their produce, there seems a *pressing* necessity, both for pursuing the most approved modes of culture, and the most beneficial breeds of live stock; and the publications of Mr. Bartley of Bath, and some other persons in the west of England in favour of the Spanish sheep, have, I hear, received the particular attention of some breeders in this and the neighbouring counties, who have not hitherto thought favourably of that kind. Their faith, however, begins to stagger a little when they hear of such *enormous* stocking as ten ewes and lambs per acre for a great space of time. Besides, some of them argue, that if the numbers of very fine woolled sheep were encreased to the extent wished by these writers, the consequences would soon be prejudicial to the country; for, as they are too tender for most of our highland districts, they would then displace many long-woolled sheep, and enhance the price of *that*, while they depreciated the value of short-wool. They also state that large quantities of fine wool can be imported from the continent; that good long wool cannot be found but in Great Britain and Ireland; that the demand for coarse goods has been increasing for several years past, while that for fine has declined or remained stationary, and that the trade for long is much brisker than that for short wool, &c. &c.

The subject seems important, and I should be glad to see it fully discussed in your useful Magazine, by those who have enjoyed better opportunities of being *well* informed than,

Sir, your constant reader,

Berwickshire, And humble servant,
July 13, 1804. PASTORIUS.

P. S. Being a little concerned as a tillage farmer, I shall venture to offer a few remarks on the comparative view of farming, which is introduced into your May number by "A Scottish Farmer." I think the system, which he says is pursued in Northamptonshire, of constant aration, and old grass, (except on very rich pastures and meadows) cannot be sufficiently condemned. It is the bane of your English husbandry, and highly injurious to farmers, landlords, and the public. In Perthshire as well as Northamptonshire, I observe that two white crops are taken in succession: theory and practice, however, may be appealed to, to prove that the most profitable mode, for a

considerable number of years, is to have a green to succeed a white crop. Such is the practice of the best farmers in this part of the country, and though the soil in the Carse of Gowrie is richer than that in this and the neighbouring counties of Roxburgh and Northumberland, I cannot but believe that such scourging practice, for a series of years, will greatly lessen its fertility, and I should be glad to see your correspondents remarks in its support. He mentions the sowing of a very ample quantity of clover seeds in Perthshire; I am of opinion, however, that with such a quantity, two bushels of good rye-grass seed per acre, is greatly too much. Here we find one bushel, and sometimes considerably less, a sufficient quantity, and that thicker sowing is injurious to the clover.

If you insert this letter in your next number, I shall conclude that it meets your approbation, and that you do not grudge the expence of postage from Scotland, a knowledge of which may perhaps be favourable to your *receiving other communications from this part of the kingdom.* P.

ON MANURES AND ON THE BREED OF SHEEP.

To the Editor of the Agricultural Magazine.

Sir,

I BEG you will accept my thanks for inserting my two letters in your May number, and I request those correspondents who have noticed my former letters and answered some of my enquiries, to accept the same. I have not yet seen your Magazine for the last month, but I entertain hopes that it will contain farther remarks on my communications, and that your correspondents will attend to those parts of my letters which still remain unanswered, as soon as they can with convenience. During the late turnip season, I paid considerable attention to the management of several farmers relative to dung, which, I observed, some applied in a rotten, some in a half rotten, and others in a long or rough state. I have remarked that, *thus far,* those turnips upon the land which received the rotten manure, have the most promising appearance; but I am told, that in the end, the two latter kinds will be the most profitable, and that for wheat in autumn, as well as turnips, they are also superior to the short dung. Some months ago, I requested information from your correspondents respecting dung, and enquired particularly whether it was most advantageously applied in a short, rotten, or in a longer state; and I should deem myself exceedingly obliged to any of them who will discuss that subject, either as scientific or practical agriculturists; for it strikes me forcibly that the practice of some of the above farmers must be bad,

and that it would be useful to myself and many of your readers, to see a full investigation of the matter. On the subject of composts, some farmers have informed me, that good earth, peat, mud, &c. mixed with dung, or dung and chalk, lime, marle, &c. is a rich and profitable manure; but others warmly maintain, that the earth, peat, and mud, increase the bulk of the dunghill, without imparting to it any increase of fertilizing powers, or being at all useful. Dung, lime, marle, &c. are, in some situations, rather scarce articles, while good earth, peat *, and mud, may be easily obtained, and if these latter articles can be rendered useful as manures, it is important to know the best modes of doing so; and I should be glad to see the subject taken up by some of your intelligent correspondents.

When I get a sufficient quantity of my dry land well cleaned and laid to grass for three or four years, I purpose keeping a few hundred sheep, and am extremely desirous of knowing the most profitable breed for middling and pretty well sheltered lands. I have, therefore, paid great attention to what Mr. Bartley and others have written in support of the Spanish sheep, and of crossing our English sorts with that foreign kind. From the accounts of these writers, sheep from such a cross appear to me to be the best for the purposes of the farmer; but when I speak in their praise to some of the farmers a little to the southward of me, who are in the habit of breeding long-woolled sheep, principally of the Bakewell kind, I am laughed at, and told, that such crossing may do to amuse those who are not obliged to pay rent for land, but that it would by no means answer the practical farmer, who has a high rent to collect. When you consider these discordant opinions and practice as to sheep and manures, my own inexperience, and my anxiety to reap advantage from, and to enable others to profit by, the knowledge and experience of your correspondents, I persuade myself you will excuse me for troubling you so frequently, and for requesting information on such important matters.

Yours, &c.

Yorkshire, July, 1804. A NOVICE.

* How is this article formed, and what kind of matter or substance does it contain?

ON THE LAWS AFFECTING THE EXPORTATION OF CORN.

To the Editor of the Agricultural Magazine.

SIR,

IT was my intention to have sent you, for the information of your readers an abstract of the Corn Act, which has passed through the House of Commons, but which, within

these few days, being rejected by the Peers, is no longer a subject of useful discussion: it will, however be satisfactory to your readers to know, that a new bill is under immediate consideration, which, it is presumed, will not be liable to the objections entertained in the House of Lords, and will therefore probably pass into an Act. If the projected statute should go through the respective stages, and thus become a part of the law of the land, I shall not fail to give you as clear a view of it as I am able to do, that your useful miscellany may contain the proper intelligence on an article of so much importance to the farming interest of this country *.

It may not, perhaps, be improper, as preparatory to the explanation of what the law will be, to shew what the law is, as it now appears upon our Statute Book; the present paper will therefore be considered as merely introductory of what I shall have the honour to submit to your attention in the succeeding, and it is with no small pleasure I state to you, that it is my full expectation, that before the present sessions shall close, the proposed Corn Act will become a part of the law of England: such I conceive to be the promptitude of the projectors, and such the conviction of the consequence of the measure in the Senate.

By 31 Geo. c. 30, and 33 Geo. III. c. 65, the following regulations are made.

Bounties are granted on exportation at certain prices.

The quantity to be exported is settled.

The maritime counties of England are divided into districts.

The exportation is determined by the prices at the Corn Exchange for London, Kent, Essex, and Sussex.

Weekly returns are to be made by an inspector, and to be published in the Gazette.

The exportation in the other districts and in Scotland, is to be regulated by the prices in several appointed places.

Declarations of the quantity and price of the corn sold by the factors, are to be statedly and promptly made to the inspectors.

Orders of Council may in future direct the exportation and importation of corn.

Your intelligent readers may also refer to 32 Geo. III. c. 50. and 33 Geo. III. c. 3. on the subject of the exportation of wheat, and on the transhipping of corn brought coastwise.

I am, Sir, yours, &c.

Inner Temple,
July 18, 1804.

J. L. D.

* It was our design to have given an abstract from our own office, but we are very happy to leave the subject to the professional talents of our correspondent. E.

REMARKS & EXPERIMENTS ON THE NATURE & FORMATION OF VEGETABLE EARTH OR SOIL.

To the Editor of the Agricultural Magazine.

SIR,

I HAVE observed many curious and useful articles in your Magazine on the Pabulum, or food of plants. It has appeared to me, that some of your most ingenious theorists have not at all understood that nature by a certain regular progress, not the less active because the mode of operation is to us inscrutable, is capable of converting both air and water into earth, and thus by a continual miracle, the magnitude of our globe is progressively increasing. The last of the following experiments will shew how important those animalculæ that are considered most destructive are to the general renovation produced by this active principle, and while the farmer is lamenting the occasional destruction of his vegetable produce, he will be taught to recollect, that this is merely a partial and temporary evil, connected with the beneficient designs and magnificent works of the universal Parent. I particularly request the attention of Lucas Medicus to this subject, because I see with pleasure, that he does not confine his studies to the mere drudgery of his laborious and learned profession, but feels that expansion of mind which would dispose him to direct his liberal attainments, to the improvement of agriculture, and every other department of useful and practical knowledge.

To whom I am indebted for these experiments, is not at all material to the public, but a great proportion of your readers, I am convinced will admit, that the hypotheses here supported immediately concern the opinions contested in some of the most valuable communications to your Miscellany.

By vegetable soil we mean, that which forms a covering to most parts of the globe, and in which all vegetables grow, multiply, and are nourished: it is itself totally formed of decayed animal and vegetable substances; it is of different colours in different places, according to the different substances which have grown and decayed upon it. When it is pure, it is capable of being burnt, and in Holland it is the fuel most generally used, and goes under the name of peat. It is of different depths in different places, from one inch to between twenty or thirty feet. When examined minutely, we find it composed of small pieces of decayed vegetables, and even pitcoal itself appears to be formed of vegetable matter, decomposed under particular circumstances. On examining some pieces of coal, we often perceive the appearance of ligneous particles; but the true process through which the wood must have gone before it assumed the fossil shape, we cannot deter-

mine. We find oak, which has long been buried under ground, assumes the hardness of coal; this is often dug out of the mosses in Scotland, where it goes by the name of black oak. I have seen some of those oak stakes which were found in laying the foundation of a bridge over the Thames, and which are said to have been driven in there by Julius Cæsar, to have assumed the brittleness and hardness of coal. The quick increase of vegetable earth is surprising in many places; particularly at Dumfries, there is a place called Lockermoss, which evidently appears to have been an arm of the sea, from boats and anchors which have been dug up there by the common people. Coins have likewise been found in it, twenty or thirty feet below the surface of the vegetable soil, some of which denote the days of Agricola. The bottom of the moss is entirely composed of sea sand: I have seen large oak and pine trees dug out of it in a high state of preservation which had the appearance of wood newly cut; but the pine seemed to contain more rosin than the pine which grows in our climate, and splinters of it are used by the common people for torches: nuts are likewise found in these mosses in a high state of preservation. It is a curious fact, that in whatever part of these moorish grounds, provided that the surface be dry, we lay down limestone or other calcareous earth, the common, which is heath, will be destroyed, and white clover spring up in its place, although there was not a grain of clover within many miles of the spot. The knowledge of this might be a valuable acquirement to philosophers, who maintain the theory of the spontaneous generation of vegetables and animalculæ. The fact is so well known in this country, that the farmer has only to lime his land, and it produces abundance of this plant, which is an excellent pasture for his cattle. I will now attempt to prove by experiment, that both vegetables and animals add to the soil, instead of diminishing it: or that the vegetable mould affords little more than a vehicle to the pabulum or food of plants; as I shall endeavour to prove that nature, by a certain regular process, is capable of turning both air and water into earth, and thereby must increase the magnitude of our globe.

EXPERIMENT THE FIRST.

I exposed a quantity of earth or soil in a furnace where I kept it in a red heat for nearly twelve hours. I took it out and weighed it, I found it to be fourteen pounds and a half. I put it into a large garden-pot, and having sufficiently watered it for vegetation, I planted in it three tree mallows: the mallows in all, when planted, weighed twenty-two grains. I kept them there for four months in the summer season, during which time they grew and flourished; at the end of which

period I took them up, and dried them carefully. On weighing them I found them to be above one pound and a half. I took the earth which was in the pot, and kept it twelve hours in a furnace as before, and on weighing it, I found it had only lost one quarter of an ounce, which might be lost in making the experiment. From this we see that the earth must have gained considerably in its weight during this short period. Since I made this experiment, I find that it was made by Hales, on a willow, which increased in five years so much as to weigh fifty pounds, without the diminution of the earth in which it grew. We are led to conjecture, from this experiment, that most of the vegetable earth of the globe is, by the powers of vegetation, formed from air, water, and light, and we find the increase to be very great. The next question that occurred to me was, whether vegetables had the power of converting water into earth, or whether or not the water only acted as a stimulus to the plants, so as to cause an increase of their parts, without being, of itself, much diminished, in proportion to the increase of the plant, in the same manner as an acid stimulates the mouth to secrete saliva, without any part of the acid entering the composition of the saliva. But that the water is diminished by the growth of plants, appears probable, for when a plant has absorbed water, it attracts the hydrogene from it, which forms their inflammable principle, and throws off the oxygene, and in this mode plants purify the air.

EXPERIMENT THE SECOND.

I took two pieces of muscular flesh, of equal weight, and nearly of the same shape, that when evaporation took place, they might have equal surfaces exposed to the air. I then fixed them to a piece of wood, which I took care to balance justly. On one piece of the muscular flesh, I put a number of the eggs of the common flesh fly. During the space of three days, the meat kept an equilibrium; but on the fourth, the one on which I put the eggs preponderated very considerably; on the fifth more, and more, during the increase of the maggots, and till all the flesh was destroyed, which was in about eight or nine days. This shews that animals possess a power of attracting something from the air, and that they increase, or give more to the earth, than they take away from it; that is, they convert some species of air, perhaps azotic, into a solid earthy substance. On collecting and weighing the maggots, their weight amounted to as much as the flesh meat on which they lived, while on the other hand, the piece of meat, on which no eggs were placed, had lost one quarter of its weight by evaporation, or decomposition by incipient putrefaction taking place. By these experiments it evidently appears, that animals, as well as plants, draw something from

the air, which, by some unknown power, they convert into a solid mass; and that not above one half of the water, which they absorb, is converted into a vegetable, or animal substance; but that the water operates as a stimulus, exciting their organized particles into action. This was evidently the case in the last experiment, for the maggots were three days in hatching, during which time a considerable evaporation took place from the surface of the meat; yet, notwithstanding this, they were found equal in weight to the original substance on which they had been fed. It therefore appears, that water and heat are the principal agents in nature in growth, generation, and multiplication, both of the animal and vegetable kingdoms. A curious instance of this occurs in a boy, who was sweated down for a horse-race: the night before the race he was weighed, after which they gave him a biscuit and a small glass of wine; but, to their great astonishment, when he was weighed in the morning, they found he had gained half a stone in weight: did not this wine and biscuit act as a stimulus in exciting that particular action, which was the cause of the absorption of something from the air? People are known to grow fat upon nothing but strong beer. The coalheavers about London are a good example of this, they are generally robust, and few of them are great eaters, generally living upon porter. Is not this to be assigned to the effect of its stimulating quality, as in the former case? From the above it appears that animals and vegetables have a power of creating and increasing earth, and that they add every year a strata of earth to our globe, both argillaceous, calcareous, and vegetable. And it is a probable conjecture, that the same power, which at present increases it, is the power by which it was at first formed, that is, the principle of life.

London, I am, Sir, yours, &c.
2d July, 1804. A. B.

ΕΠΕΑ ΠΤΕΡΟΕΝΤΑ.

ON THE AGENCY OF THE FEATHERED TRIBE IN AGRICULTURE.

To the Editor of the Agricultural Magazine.

Sir,

I SEE numerous papers in your work on Quadrupeds, but I have sometimes thought that Bipeds are a little neglected. A learned philosopher has defined man to be an animal with two legs, and without feathers, and a witty friend of his, stripped a bird of his plumage, and as a punishment for this defective definition, assigned him this naked biped for his companion. I have often thought that the sage had no reason to be discontented with this act of pleasantry, for I have

found these animals through life such agreeable companions, that I have always been surrounded with them. They fly about my apartment, they partake of my meals, they lull me to sleep, they awaken me to cheerfulness, they preserve the regularity of my hours, and they instruct me in the active duties of life. Let others enjoy the gross head, the formidable jaws, the loaded chest, and the sinewy limbs of the quadruped; I can admire the pointed beak, the long and pliant neck, the gently swelling shoulder, the expansive wings, the tapering plumage, and the golden hues of my little ærial society. Every part of their frame seems contrived for lightness and buoyancy, and to accelerate their progress through the yielding air.

But, Sir, in recollecting my own enjoyments, I must not forget the leading design of your work. You, I am afraid, and your correspondents, are very much in the habit of considering the little amiable circle of my most intimate friends as a nest of thieves, which deprive the husbandman of the fruit of his toil, and leave him exposed to disappointment and misery. It perhaps may be a subject to which I shall hereafter invite your attention, whether these little plunderers be more useful or destructive; but if they be either the one or the other, to a work like yours a few observations on their natural history must be beneficial, that their haunts may be known, that their means of subsistence may be ascertained, that their itinerant habits may be detected, that they may be either increased, or diminished, according to the will or pleasure of the vain lord of the creation.

> "Amusive birds! say where your hid retreat,
> When the frost rages, and the tempests beat;
> Whence your return, by such nice instinct led,
> When spring, sweet season, lifts her bloomy head."

Most of the small birds are supported by a vast quantity of worms, caterpillars, and other insects, which seem to rise from the vegetable produce, as from the womb of nature. It has been remarked, that a single pair of sparrows, during the time they are feeding their young, destroy weekly four or five thousand caterpillars. The insects with which the air abounds, and which seem to thicken the atmosphere, so as to render it unfit for the purposes of life and health, are destroyed by the meandering flight of the swallows ever on the wing. By the principle of instinct, so nearly allied to the sublime operations of the mind, the progeny of numerous insects is concealed beneath the leaves, and inclosed within the blossoms, and by this devouring tribe all the most generous fruits of the earth would be blasted. The little tom-tit, the red-breast, the wren, the winter-fauvette, the white-throat, the redstart, and

numerous others, at the suitable season, are all seen running up and down amongst the branches of the trees, examining every leaf, prying into the coral bosom of the nascent flower, and disappointing every where that rising existence which is injurious to vegetable life. The three first in this little fraternity do not retire before winter, but continue with us during the whole year, and perform the more important work of destroying the parent insect, from whose prolific bowels an offspring would be emitted, destructive as the locusts of Egypt. Besides these, the win-chat, the stone-chat, and the golden-crested wren, are seen with us during the winter; the latter, though the least of all the British birds, is very hardy, and can endure the utmost severity of our climate. The white-rump, though not common, sometimes stays the year with us. Of the winter birds of passage, the following are the principal, viz.

1. The red-wing, or wind-thrush.
2. The fieldfane. (Both these arrive in great numbers about Michaelmas, and depart about the end of February, or beginning of March.
3. The hooded, or sea-crow, visits us the beginning of winter, and departs with the woodcock.
4. The woodcock appears about Michaelmas, and leaves us about the beginning of March.
5. Snipes are considered by Mr. White as birds of passage, though he acknowledges that they frequently breed with us. Mr. Pennant remarks, that their young are so frequently found in Britain, that it may be doubted whether they ever leave entirely this island.
6. The judcock, or jack-snipe.
7. The wood pigeon. (Of the precise time of its arrival we are not quite certain, but I suppose it may be some time in April, as I have seen them in the north at that time.
8. The wild swan frequents the coasts of this island in large flocks, but is not supposed to breed with us: it has been chiefly met with in the northern parts, and is said to arrive at Lingey, one of the Hebrides, in October, and to remain there till March, when it retires more northward to breed.
9. The wild goose passes southward in October, and returns northward in April.

The enumeration of the various kinds of birds that visit this island annually, and the time of their approach, will not, I think, be unacceptable to you. The following are selected chiefly from Mr. White's Natural History of Selborne, and are perhaps pretty correctly arranged in the order of their appearance. The list commences with the wry-neck and small

willow-wren, which are the only birds that venture in our climate during the month of March; and it closes with the fern-owl and fly catcher, which never trust themselves with us until May.

Wryneck	Middle of March.
Smallest willow-wren	Latter end of do.
House-swallow	Middle of April.
Martin	Ibid.
Sand-martin	Ibid.
Black-cap	Ibid.
Nightingale	Beginning of April.
Cuckoo	Middle of do.
Middle willow-wren	Ibid.
White-throat	Ibid.
Redstart	Ibid.
Great plover or stone-curlew	End of March.
Grasshopper-lark	Middle of April.
Swift	Latter end of do.
Lesser reed sparrow	Ibid.
Corncrake or land-rail	Ibid.
Largest willow-wren	End of April.
Fern-owl, Fly-catcher	May.

Most of the soft-billed birds feed on insects, and not on grain or seeds, and therefore usually retire before winter.

As you will think these introductory observations more than sufficient for the present, I shall hope for your further indulgence some future opportunity.

Lyndhurst,
4th July, 1804.

I am, Sir, yours, &c.
OLVIUM NUTRITOR.

VETERINARY ART. LETTER VII.

DISCOVERIES OF THE NEW SCHOOL.

To the Editor of the Agricultural Magazine.

SIR,

MY first letter was merely introductory. The second (No. 53, page 414) stated the arrangements I proposed to adopt, the first part of which is completed in the following order. I first distinguished the bones, or osteology, of the animal: I then (No. 54, page 28) treated of the diseases to which they were liable: this was succeeded by the examination of the appendages of bone, or the ligaments, cartilages, &c. in their morbid state. I next (No. 55, page 110) treated of the muscles, then (No. 56, page 169) of muscular wounds and ulcers, and lastly (No. 57, page 271) of the poll-evil, and some other disorders.

Consistently with my original design, I should now proceed to the nerves, to the viscera, and to the vascular system in general, and having thus taken a comprehensive view of the solids, I should cursorily discuss the subject of the fluids, consisting of the blood, milk, bile, lymph, urine, &c. But, Sir, by a private communication I received from you, (the copy of which I should be glad if you would subjoin to this communication) I am given to understand, that this order of enquiry is considered by you to be somewhat too scientific for a work of a popular kind *.

After having contrived the general scheme, and thus far pursued it with some degree of precision, it is certainly with reluctance that I feel myself constrained to abandon it. I assert with confidence, that the part which yet remains untold, is by far the most curious and interesting, if not the most useful,

You say, "The art is yet in its infancy, and so destitute of correct knowledge are some of its professors at this day, that the thirteenth edition of the most popular work on the subject now on our table, treats on the diseases of the folliculus fellis, or gall bladder, when the fact is, there exists no such receptacle in the whole œconomy of the horse." This ignorance you employ as a reason for postponing the technical and professional considerations of the subject, until the anatomy of the animal is better understood, and you wish me to travel the ground I have occasionally trodden, and to treat more of the diseases and of their cure, than of the "intricacies of organization," and the "wonders of animal mechanism."

I will, Sir, accede to your wishes: the present letter will include some of the discoveries of the new veterinary school, and the few succeeding ones with which I shall terminate my labours, will be almost exclusively applied to the pharmaceutic department of the enquiry, passing over those disorders and corresponding remedies, which have been introduced into the former division. I hope, Sir, that in taking this course, I shall at least be permitted to explain the nature and situation of the parts affected by the disorder, and the functions they are appointed to perform. I do not profess solely to write for the information of the country blacksmith, he is sometimes as impenetrable as the material on which he is employed; but

* In our intimation to Veterinarius, we reluctantly deviated from our established rule not to make private communications on matters connected with this periodical work, but we foresaw the infinite pains our ingenious correspondent applied in the preparation of his papers, and we were unwilling to be under the necessity of returning them on his hands, and therefore gave him the hint to which he has attended. He will excuse us if we suppress the publication of the letter which contained it, as wholly unworthy the attention of our readers.

the farmers of this country are men of research and understanding, whose minds are not bewildered by enquiries into a science which the former are too vain to learn, and too ignorant to comprehend *.

DISTINCTION BETWEEN THE BLOOD-HORSE AND THE CART-HORSE.

The former is a native of Arabia: it is supposed to be the policy of that country not to permit the export of their best horses, so that however successful we have been from extreme attention to the pedigree, it is very probable we have never had the opportunity of propagating the species from the breed of the greatest celebrity.

The large fleshy powerful draught horse is of English origin, and attains to its highest excellence unquestionably in this country: however great a favourite he be, I will submit to the curious a few particulars, in which the exotic has the decided superiority. The length of their quarters and the width of their chests give the latter not only greater speed, but an increase of strength. The cart-horse is full, and porous or spongy in every part of his form; the fibres of which the several parts are composed, are loose and irregular, instead of having that solidity and compactness by which the blood horse is distinguished, whose powers are thus increased without adding to his apparent bulk. The vigour and spirit, expressed in his countenance, are consistent with his priority of rank; even the medullary substance of the brain, the density of the blood-vessels, and the proportions of the heart, exhibit in an extraordinary degree his pre-eminence: the heart of Eclipse is said to have weighed fourteen pounds. The situation of the hip bones in the English cart horse is high and wide, in the blood horse it is low and narrow; hence it is concluded, that the former has an accession of strength, from the greater room for the muscular parts. A more accurate examination of the animal has shewn, that from the rotundity or arch in the make of the blood-horse, equal room is given to the muscular system materially concerned in the posterior action. But perhaps the superiority in the conformation of the Arabian, is in no respect more frequently acknowledged than in the consistence of the foot: it is ascertained, that the horny substance of which this part of the animal is composed,

* We are perfectly satisfied with the intelligent project for the succeeding papers here suggested by our learned friend, and we do assure him, that nothing but a perfect conviction of the necessity of applying our work to its legitimate objects, in the form most beneficial and acceptable to our readers, could have induced us to have made the request of which he now seems a little disposed to complain. E.

is a sort of reticulation of horizontal and perpendicular fibres; these fibres, being compact or open, according to the density or laxity of the skin from which they proceed. It will be seen, by these remarks, that however fond the distiller, the brewer, the farmer, or the carrier, may be of the large gross gigantic animal, it will be wise gradually to introduce a portion of the Arabian blood into the breed of this country, whether for draught, or for the pannier, for the road, or for the field.

THE ROAD HORSE.

Horsemen who wish to be conveyed with the ease of a spring carriage have not always attended to the peculiar figure of the animal necessary to produce that sort of action. I will endeavour to explain from what cause it is now allowed principally to arise. The bladebones connect the limbs by muscles instead of the usual junction by concavities or sockets; the ease and velocity of the horse depends in a great measure on the free contraction and dilatation of these muscles, so that the animal may proceed without any violent concussion. The rider will immediately perceive the advantage of this conformation, instead of that adopted in the other parts of the body by ligaments and sockets; if he place his hand for an instant on the croup of the animal while in progression, he will perceive a violent action and reaction greatly opposed to the ease he desires. By this explanation, the detriment of the straight upright shoulder, resembling the joints of perpendicular limbs, will immediately be seen; the most perfect form in other respects will not compensate for a defect in this particular. Although this is material for the ease of the rider, it is now generally acknowledged, that the swiftness of the animal depends more on the hind quarters than on the forehand; it has been said, that "if the fore quarters move well, the hinder part must unavoidably follow:" this, however, is fallacious. Those who have been accustomed to the exercise of the great horse in the riding-house are sufficiently sensible of the strong muscular action between the pillars in raising and launching the posterior limbs; while leaping the bar, the rider and the horse appear at perfect ease, until the latter proceed to the violent effort in raising the croup; and unless the muscles concerned be powerful, his efforts will be ineffectual, and he must be drawn back over the bar: this comparison of the strength required in the posterior muscles to give swiftness to the horse, will appear perfectly fair, when we reflect that galloping is nothing more than leaping on a plain surface; and when the animal is in full speed, the leap is of very considerable extent. The horse Eclipse, so famous for his prodigious velocity, was not well made before, but had his principal strength in his hind quarters; and the seat of muscular

force in other animals of extraordinary swiftness, as the hare and the greyhound, is assigned to the same situation by nature, who preserves simplicity and analogy through all her works.

THE HAWES.

The eye of the human species is furnished with six muscles, but that of the brute creation in general, on account of its prone position, is supplied with a seventh, called the membrana nictitans, the use of which is probably to support the organ of vision while the head is inclined downward in feeding. It will scarcely be credited, that the ignorance of persons employed for the health and protection of the horse, should have been so gross as to have supposed this membrane to have been an excresscence, resulting from some humour or imperfection in the part. The eyes of horses have been more subject to disorders than the human eye, or the eye of any other animal; the principal cause arises from mismanagement, of which, perhaps, we can give no more striking instance than the extirpation of this wise provision of nature by violent hands. I shall not venture to say, that the first discovery of this membrane in the horse is to be attributed to the Veterinary College, but I will boldly affirm, that if the practical application of this discovery were the only benefit derived from its professors, the public mind would have been amply repaid for all the expence and solicitude attending the institution.

ROARER.

A horse is said to be a roarer when in a quick pace he emits a hollow sound during the effort of breathing; but if the name and the disease be familiar to all who are acquainted with the animal, the modern reformers have not yet found the immediate cause: it, probably, will be found to be seated in the trachæa; it has hitherto been incurable, and little success is to be expected from further effort, until the source of this species of diseased respiration be ascertained.

Another difficulty which remains to be resolved, is the use of the slit in the septum of the nostril: most persons have observed the spirited look produced by the inflation of the nose of the horse; this is owing to that peculiar conformation which occasions the part to continue filled with air until the act of expiration. I have mentioned these obscurities of the art, because I think it not less serviceable to point out what is yet unexplored, than to give the discoveries already made by the labour and ingenuity of the student. This precaution will shew the boundaries of the art, it will promote modesty in the professor, and it will inform the amateur in physiology on the subjects to which his enquiries may be advantageously directed.

THE FOOT.

I cannot conclude without noticing the greatest improvement in modern farriery; it is true, I am not entirely indebted for it to the late institution, for every follower of the Cyrenean youth, and every veteran in the sports of the field, has been long acquainted with the fatal consequences of the unskilfulness of the farrier in the treatment of the foot, and has partially removed the evil.

The foot of a colt, when accurately observed, is found to consist of the segments of four circles; the periphery of the larger extends round the forepart from the heel on each side; that of the three smaller is formed by the projection of the two heels, and the hinder protuberance of the frog: the artificial state of the foot, after having been shaped to the taste of the farrier, is very different; it then consists of one segment of a circle, and of the segments of two ovals; the circular part extends round the toe from heel to heel, as in the former, and the segments of the ovals are composed of the heels contracted to the form of the narrowest extreme of a hen's egg. In its natural state, the principal breadth of the foot is behind; in the other, the forepart occupies a space twice the width of the posterior; in the former, the frog expands boldly beneath the tendon Achilles; in the latter, it is contracted to a very acute angle. Thus, by violent hands, the beautiful work is reversed; and what is the inevitable consequence? The action of the animal becomes crippled, and he is oppressed with the state of infirmity to which he is reduced: formed by the indulgent hand of nature to tread the slippery path, and to bound over obstructions, which would impede his progress, in conscious security; by this profanation of his sacred form, he loses all the dignity and generosity of his temper, all the boyant spirit of his heart, consequent on the complete exercise of his corporeal energies.

Westminster, I am, Sir, yours, &c.
July 4, 1804. VETERINARIUS.

ON THE PROCESS OF MAKING CHEESE.

To the Editor of the Agricultural Magazine.

SIR,

OF all the productions for which we are principally indebted to female industry, there are none more gratifying to my palate than good cheese. There is no country in the world where it is to be obtained in that richness of perfection to which it has long been brought in this country. An Englishman seems to partake more of the carnivorous species of animals, than the inhabitants of any foreign country; and it is fortunate, that this inclination for flesh diet is in some

degree corrected by the valuable preparation which is the subject of this paper. The extensive pastures with which Providence has favoured us, afford the most advantageous means of supplying the material ingredient, and when we consider the numerous diseases produced by an inordinate quantity of gross food, I trust we shall think the operation of cheese-making in one of our most intelligent districts, deserving general attention.

The following is the account given of it as the process is conducted in Gloucestershire.

1. The management while in the press.

Having stood two or three hours in the press, the vat is taken out, the cloth pulled off, and washed; the cheesling turned into the same cloth, and the same vat, (the cloth under and folded over as before) and replaced in the press.

In the evening at five or six o'clock, it is taken out of the press again, and salted in this manner: the angles being pared off, if wanted, the cheesling is placed in the inverted vat; and a handful of salt rubbed hard round its edge; leaving as much hanging to it as will stick. Another handful is strewed on the upper part, and rubbed over it pretty hard; leaving as much upon the top as will hang on in turning. It is now turned into the bare vat, without a cloth, and a similar quantity of salt being rubbed on the other side, is again put into the press.

Next morning it is turned into the bare vat; in the evening the same; and, the preceding morning, taken finally out of the press, and placed on the dairy shelf.

Each cheese, therefore, stands forty-eight hours in the press. At the second or third, it is turned in the cloth: at the tenth, the cloth is taken off, and the cheesling salted. At the twenty-fourth, it is turned into the bare vat. At the thirty-fourth, the same; and at the forty-eight, finally taken out *.

2. The management on the dairy shelves.

* The method of making "green cheese" in this district, is the following. For a cheese of 10 or 12 lbs. weight, about two handfuls of sage, and one of marigold leaves and parsley are bruised and steeped one night in milk. Next morning the greened milk is strained off, and mixed with about one-third of the whole quantity to be run. The green and the white milk are then run separately, keeping the two curds apart until they be ready for vatting. The method of mixing them depends on the fancy of the maker. Some crumble the two together, mixing them evenly and intimately. Others break the green curd into irregular fragments, or cut it out in regular figures with tins for this purpose. In vatting it, the fragments or figures are placed on the outside. The bottom of the vat is first set with them; crumbling the white, or yellowed curd among them. As the vat fills, others are placed at the edges; and the remainder buried flush with the top. The treatment afterwards is the same as that of plain cheeses.

Here the young cheeses are turned every day, or every two or three days, according to the state of the weather, or the fancy or judgment of the dairy-woman. If the air be harsh and dry, the window and door are kept shut, as much as may be: if close and moist, as much fresh air as possible is admitted.

3. Cleaning.

Having remained about ten days in the dairy, (more or less according to the space of time between the washings) they are cleaned; that is, washed and scraped, in this manner: a large tub of cold whey being placed on the dairy floor, the cheeses are taken from the shelves, and immerged in it; letting them lie, perhaps, an hour or longer, until the rind become sufficiently supple. They are then taken out, one by one, and scraped with a common case-knife, somewhat blunt; guiding it judiciously with the thumb placed hard against its side, to prevent its injuring the yet tender rind, continuing to use it on every side, until the cloth marks, and every other roughness be done away; the edges, more particularly, being left with a polished neatness. Having been rinced in the whey, and wiped with a cloth, they are formed into an open pile, (in the manner new bricks are usually piled) in the dairy window, or other airy place to dry, and from thence are removed into the cheese-chamber.

4. The management in the cheese-chamber.

The floor is generally prepared by rubbing it with bean tops, potatoe haulm, or other green succulent herbage, until it appear of a black wet colour. If any dirt or roughness appear upon the boards, it is scraped off with a knife, and the floor swept clean with a hair broom. The cheeses are then placed upon it regularly in rows, and kept turned twice a week, their edges wiped hard with a cloth once a week, and the floor cleaned and rubbed with fresh herbs once a fortnight.

The preparation of the floor is done with the intention of encouraging the blue coat to rise. To the same intent, the cheeses are not turned too frequently, for the longer they lie on one side without turning, the sooner the blue coat will rise. If, however, they be suffered to lie too long without turning, they are liable to stick to the floor, and thereby receive injury. If by accident the coat come partially, it is scraped off. This, however, seldom happens in a rich soiled country, and all the care and labour requisite in this stage, is to turn them twice a week, wipe their edges once a week, and to prepare the floor afresh once a fortnight. If the cheese-chamber be too small to admit of the whole to be placed singly, the oldest are doubled, sometimes put three or four double.

It is striking to see how well cheeses of this district bear

handling at an early age; even at the time of washing, the dairy-maid will frequently set the cheese she is scraping on edge upon another without injury. At a month old they may be thrown about as old cheeses, their rinds appear as tough as leather. This must be owing to the scalding; it cannot be to their poverty; they are evidently fatter than the new-milk cheeses of many districts.

Grantham, I am, Sir, your's, &c.
2d July, 1804. J. D.

ON THE AGRICULTURE OF THE WEST RIDING OF YORKSHIRE.

To the Editor of the Agricultural Magazine.

SIR,

MY last communication was on the subject of Cornwall, and if I have postponed my papers for a month or two, I hope you will attribute it to any other cause rather than want of inclination to continue my correspondence.

The district which I have chosen for the present subject, is a situation where I have spent a large portion of the early part of my life: naturally fond of activity, I have delighted to frequent the busy haunts of mankind; and without partaking at all of the emoluments which are the result of well directed industry, I have been delighted to discern the smile of content and self-satisfaction on the chubby countenance of a successful tradesman.

Unavoidably, from the extent of Yorkshire, and from the different character of the county, I have been obliged to confine myself to one of its divisions; it therefore may be right to ascertain, with some precision, its boundaries. To the east of the West Riding is the Ouse; to the west, is Cheshire, Lancashire, and Westmoreland; to the South, Nottingham and Derby; and to the north, the towns of Boroughbridge, Ripon, and Ingleborough.

It contains nine wapentakes, and twenty eight market towns, the principal of which are Leeds, Sheffield, Wakefield, Halifax, Doncaster, and Rotherham.

This country is of a varied surface: to the west and north it is bold and mountanous, the elevations being a part of that immense chain I have noticed in a preceding number, (Vol. 9, page 159.) "which dividing Lancashire, enters Westmorland, where the mountains fill the whole of the province and a part of Cumberland, when again they are contracted into a chain, and enter Scotland through Northumberland." To the east, the land is low, rich, productive, and although favourable to vegetable, is unfriendly to animal life. The extreme length is about 100 miles, the breadth 50, and the circum-

ference somewhat more than 300; the content is about one and an half million of acres, and the population perhaps half a million. Two causes occasion an abundance of rain in the western part; the vicinity to the Irish channel, and the attraction of the clouds by the mountaints. The mere inspection of the map will shew to the reader the numerous navigable rivers and canals by which this tract is intersected, improved in a high degree by recent exertions. I need only mention the river Don, navigable to Sheffield; the Calder, the Aire, and the Wharfe.

The advancement of this district in rural knowledge and vegetable produce, is sufficient to set for ever at rest the question so long agitated, "If manufactures conduce to the agriculture of a country?" Without reviving the argument, which is too much of a political nature for your work, it will be enough to say that the condition of land immediately around the manufacturing towns, is greatly superior to any other in the county; and much of it, without any inducement from the facility of application to the purposes of trade, will let for 8l. an acre, and sell for 60 years purchase on that exorbitant rent.

I must say a word or two on the purposes to which this extensive district is applied. From Rippon, through the whole of the western part, all the good land is in pasture. The higher parts in this portion are generally wastes, over which a few lean cattle are distributed, that are subsequently pastured for the butcher on the lower grounds.

The land adjacent to the manufacturing towns, as Leeds, Halifax, Bradford, Wakefield, and Huddersfield, have a very small quantity under tillage.

On the contrary, all east of Rotherham, Barnsley, Ripley, and Rippon (with the exception of the environs of the manufacturing towns) is either under the plough, or in grass, as preparatory to tillage.

To the east of the great north road from Doncaster to Boroughbridge, a large proportion of land is common, and every one of your readers will know this must be susceptible of great improvement by inclosure.

What are called the moors, prevail most in the vicinity of the Don river, in its small ramifications rising north from Sheffield, and proceeding to Peniston and Shepley.

I am excused from stating the proportion of waste land in the West Riding, by the correct account of it from the pen of Eboracensis (No. 56, page 167,) by which it will be seen with regret, that in one of the most opulent and populous tracts in the kingdom, draining, paring, and burning, and the general means of improvement are so little understood, that nearly one-third of the territory is unproductive.

Your correspondent, Agricola Northumbriensis, will readily explain the slow progress of amelioration, when I tell him, that the farms seldom exceed 200 acres, and are often below 50; and further, that three-fourths of the Riding is let to tenants at will. Mr. Arthur Young, who more frequently coincides with the sentiments of that correspondent than I do, but not more than myself on the present occasion, says, that the improvements which have taken place in England, have been almost wholly owing to the custom of granting leases. The farmer, without this security, is exposed, not only to the caprice of his landlord, but to that of the steward, and sometimes even of the footman or stable-boy; or even a cook attached to the good living of the hierarchy. It is a notorious fact, that the tenants on a certain estate in the north, had notices to quit, merely because they had turned Methodists. As I have mentioned the size of the farms, it may be right to say a word or two to Agricola Meridionalis, who seems, by his last communication, to support the question, governed by different principles to those I am disposed to adopt; or to speak more correctly, he excludes some of the most material facts, which circumstance has led me to consider him as partaking more of the character of the politician than of the farmer. A few words, however, only, in this place, which apply to my present subject.

A farm should be of a size to admit of a perfect rotation of husbandry, and so contrived, that the labour should not fall all at one time. The stock of cattle is better preserved on a large farm. Let the friends of small farms answer these questions which have been before proposed to them. Does the large or the small farmer keep the best horses, and in the highest condition; make the best fallow, and take the deepest furrow? Which is readiest to meet the vicissitudes of the season? Which has the greatest abundance of manure? Which the heaviest crops?

The price of land in general, throughout this Riding, may be stated at 50s. for grass, and half that rate for corn land.

I shall alarm your friends, when I tell them, that in some parts of this district, it is the custom for the tithe-holder to send a person before the time of harvest, to estimate the value of the crops; when the tenth value is pretty exactly ascertained, and the option is given to the farmer, either to pay to the extent of that estimate or in produce.

The rotation of crops, where four successions are allowed, will not be objected to: turnips, barley, clover, wheat. Where two are only admitted to a fallow, wheat and beans, or wheat and oats; and in the western districts upon the higher ground, oats is the crop on which they principally depend.

Of the grasses, red clover is sown when wheat is to succeed, and white clover and hay seeds for pasture. It is to be lamented all over the kingdom, that hay seeds are not more carefully collected. The seeds of every species of trash from the rick and the hay-loft are swept together and shovelled into sacks, and thus the most pernicious intruders press upward in every direction, and disappoint the hopes of the farmer. It will scarcely be credited, that no less than three quarters of this vegetable poison is frequently thrown over the field in the West Riding, mixed with a few handfuls of Dutch clover.

Flax is cultivated on the shores of the Ouse, where the bounty assigned by Parliament is considered a sufficient temptation. It is principally manufactured into cloth on the romantic banks of the Nyd, where a distant observer might easily mistake the cloth exposed in the fields for a spacious lake, with the shore correctly defined by the hand of art.

Winter tares are very much cultivated in the southern extremity, and nothing can be more useful for the supply of the herds, before the clover is in a fit state. They particularly suit the convenience of the farmer in the turnip culture, as the early removal of the tares facilitates the preparation of his land for turnips; but in this county, all the benefit is not derived, for the most slovenly habit is apparent. Notwithstanding the activity, and I may say authority, employed by the late Marquis of Rockingham to promote it, the practice of hoeing turnips is scarcely known: an honourable exception should be, however, made in favour of the estate of Colonel Beaumont, near Wakefield, and of the vicinity of Rotherham.

The mode adopted in rape and cole-seed deserves particular attention. There are three ways, which I will explain. 1. Sowing before July, feeding off by sheep prior to winter, and again in the spring, which is an excellent preparation for barley. 2. Ploughing up the wheat-stubbles, which the ensuing season are intended for turnips. The seed is then sown, and the produce is eaten off in the spring, previously to working up the land. 3. This method is for the sake of the seed, and for this purpose it is sown the beginning of August upon land fallowed and dunged. It is cut in July, so that it is nearly a-year in the ground.

Although I occasionally mention fallows without reprobation in these provincial disquisitions, I wish it to be understood, that I am never an advocate for them where the hoeing system has been adopted.

One of the greatest ornaments of this part of the country, is the attention with which the field boundaries are preserved. Over a large extent in the neighbourhood of Halifax and Huddersfield, they are supplied from the quarry, and are equally se-

cure and durable. If they do not gratify the eye of the fastidious artist, they place the produce of the farmer beyond the reach of injury from quadrupeds, while they admit the fowler to range without interruption in the pursuit of his active amusement.

It has been justly complained, that the accommodations for labourers in the farming districts are not sufficient, so that instead of possessing a cottage, and a domestic circle, where the smile of love and gratitude would alleviate the fatigues of the day, the laborious husbandman is driven to the public-house in the adjacent villages, where he exhausts the little fund he had collected for the supplies of the necessaries of life.

It will not be expected that in a manufacturing country, the wages should be at a low rate; and this is one of the disadvantages on which the heated advocates of the agricultural system, as opposed to the commercial, have dilated; yet it is a fact, that the rate of wages is very inconsiderably above the price in the North and East Riding, and excepting during one season about fourteen years ago, there has been no deficiency of hands for the business of the field, which perhaps can be said of no district exclusively agricultural. The artizans of the loom, in the cheerful season of harvest, readily forsake their sedentary occupation, and join equally in the industry and conviviality of this smiling season: all are glad to partake in the sports of Nature's appointed holiday.

I cannot approve of the spacious and expensive barns erected in some situations, but the mode of thatching the corn stacks I earnestly recommend. I have often doubted of the superiority of practice of housing or exposing corn in stacks, until I saw the felicity and dexterity with which the roofing is given to the stacks in the West Riding of Yorkshire. Your experienced readers will perhaps have seen with astonishment, a complaint, that the corn of this district is thatched too heavily, and that it is done with the precision of a dwelling-house. From incompetent persons, we expect little more than a collection of facts: the praise or censure they apply is of no consequence, the facts speak their own plain language, and if they represent as culpable the protection given to our means of public subsistence by a little additional labour, expence, and ingenuity, we know how to appreciate their straw, and to draw our own conclusions.

I speak this rather in the name of your intelligent practical correspondents, than for myself, for I know their merit, and am not unacquainted with my own deficiency.

It is almost needless to say, that provisions are very abundant in this district; the cheapness of living is proverbial;

but I must admit, that the proverb which applies to the subject, like many other consolatory sayings of loquacious and discerning huswifes, is of ancient date, and a very material alteration has been occasioned in the price of provisions, from obvious and satisfactory causes, both here and in every other part of the kingdom.

The species of wood most prevalent in this Riding, are not the least valuable. Oak and ash are seen in extensive forests, and afford shelter in the hedgerows; and the skill applied in the management of the plantations cannot escape the observation even of the careless passenger. He will, however, see with mortification, that while we are importing large quantities of deals from Norway, and the contiguous kingdom, the wastes of Yorkshire are neglected, where larches, and other firs might be planted to great private emolument, and public benefit.

The part of the county to which I am now adverting, may be considered as the commencement of the great patria of lime-stone: and the trifling expence of fuel, and the extensive water communication conduce to afford the best opportunity of improving the soil, by the application of lime as a manure. It is, therefore, a lamentable fact, that this source of improvement is very partially and defectively employed. The practice is, to apply about sixty or seventy bushels an acre on a fallow, upon which it is spread prior to the last ploughing. Besides lime; bones, horn-shavings, and rape-dust, are employed as manures.

It has been my good fortune, whenever I have visited Halifax from the eastern parts of this district, to have the dreary prospect relieved by the abundant crops and excellent management on the estate of Mr. Walker, of Crownest; and here alone, to any extent, I have observed irrigation adopted. His lands can be floated at any hour he pleases, the immense pool may be as easily withdrawn, and thus all the benefits of the chemical decomposition of water, by the vegetable admixture, is produced at pleasure, his ground is converted into a hot-bed; and when nature is niggardly of her benefits to others, she is pouring forth the treasures of her cornucopia as a reward for his ingenuity.

I shall conclude this account with a few observations on the cattle, and two or three desultory remarks.

The horses in this part are not so famous as in the adjacent Ridings; they are a small hardy breed, but more attention has lately been paid both to the sire and dam, than formerly, from the temptation of the large prices given by the London dealers at the fairs.

Of the cattle, four kinds may be distinguished. 1. The short-horned, which are principally in the eastern part of

this Riding, and are frequently known by the names of the Durham, Holderness, and Dutch breeds. 2. From the mountains of Craven we have the long-horned species, very hardy, but not esteemed the most valuable. 3. In Nydderdale, there is a cross of both these, which perhaps exceeds in merit either of the parent breeds, as inheriting the excellent qualities of both. 4. The Scottish, which are sold in this neighbourhood, and after one or two year's good pasturage, are disposed of for the shambles.

Of sheep we may make two distinctions; the one native, the other foreign. The native, is called the Peniston breed; they are light, and well adapted for exploring a country where the supply of nourishment is wide and scanty. A great portion of these are very poor, and are likely to continue so, as they belong to indigent persons, who have no sufficient knowledge to improve the animal. Besides these, sheep are driven here from the more northern country, and after dropping their lambs, at the suitable time, they are fed for the butcher.

Seventy years ago the plough, so well known by the name of the Rotherham plough, was invented here by Mr. Joseph Foljambe. It has been since improved. I have much less objection to the instrument, than to the want of skill with which it is used, and to the manner in which the beasts are connected with it. Without commenting on the laws of mechanics, which are violated without mercy, I shall only observe, that it is drawn by three or four horses at length, and that the furrows are irregular and shallow. As the oxen and horses have kicked up some dust, which is conspicuous on the pages of your Miscellany, I will just observe, for the satisfaction of Agricola Northumbriensis, that the use of the former has been attempted and abandoned, from a clear conviction of the superiority of the latter, both for the purposes of tillage and of the road.

I shall not now, Sir, in imitation of many profound legislative farmers, enlarge on the impediments to improvement, from the restraints of public institution, nor shall I think it necessary to recapitulate the cursory hints I have thrown out in this paper. In all cases, the consideration of which we are invited to by this subject, we are led to notice, that the progress of general improvement is impeded from two causes; the ignorance of individuals, and the impolicy of the state. The former we may correct by due diligence, and a modest sense of our own imperfections; the latter implies Herculean labour, and we should examine well our own strength, before we attempt to resist the torrent, and undertake the business of public reform. Whatever may be my wishes or design on this part of the subject, I shall always consider it remote from

the object of your work. I trust, Mr. Editor, you will leave the farrago of politics to the various conditions of men immediately concerned in it, from the assemblies of parliament to *Newspaper-hall*; that when the senator shall, at this season, withdraw oppressed and fatigued from the ostensible functions of government, to the silent retreat of the patrimonial mansion, he may derive a satisfaction in the perusal of your rural studies from nature, increased by the fond recollection of his early years, in the seat of his ancestors.

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

July 12, 1804. CHOROGRAPHUS.

ON THE COMPARATIVE UTILITY OF OXEN AND HORSES IN FARM LABOUR.

To the Editor of the Agricultural Magazine.

SIR, *July 14th*, 1804.

YOUR correspondent Agricola Meridionalis and I having bestowed, on the merits of horses and oxen in agriculculture (a subject which certainly demands the serious attention of the occupiers and proprietors of land) a long and pretty minute discussion in your valuable Miscellany, be assured that I should not, at present, have troubled you on that subject, if the observations of Agricola Norfolciensis, in your number for May last, had not rendered a farther investigation necessary. This necessity, Sir, will, I think, be obvious, when we attend to the following circumstances:

1st. That Agricola Meridionalis contended for the superiority of the ox, while I maintained that of the horse, *on all descriptions of lands.*

2dly. That Agricola Norfolciensis has *asserted* that "the truth appears to be, that each system has its advantages and disadvantages, and that the preponderancy of the one over the other is mutual, *as situation and soil direct the scale.*"

For, if the latter position will admit of discussion, it is clear, *as it is yet unsupported either by facts or arguments,* that the ox and horse question has *not* received that full and complete investigation its importance demands. In the very same page, however, in which A. Norfolciensis has advanced the above position, he says, "that it (the ox and horse question) has received as full a discussion as the nature of it will admit;" and I cannot account for his unsatisfactory and illogical mode of proceeding—a mode very different from his usual acute and perspicuous management of his subject—but by supposing that his reasoning faculties are impaired by the *heat* of controversy, medical philosophers having informed us

that *heat*, or in other words, the *quick* and *copious* ascent of the blood to the head, frequently causes too great a pressure upon the *brain*.—Perhaps, Mr. Editor, you will conclude that this information induced me, when I answered A. N.'s letter in your 58th number, to *wave* the discussion of a subject so much interwoven with long and intricate calculations, and whether that conclusion is well founded, I shall not at present, state.—I hope, however, that *time*—that great *refrigerium* of Christians—has now *cooled*, and reduced the circulation of the blood to its usual tranquil state, and that Agricola Norfolciensis and I, and your other correspondents who may wish to join in the investigation, will now be allowed to endeavour to bring this disputed question, which he says "is still undecided," to a proper conclusion.—I must request, therefore, that instead of letting so important a matter rest on *mere assertion*, he will endeavour to support his position by "*matter of fact and argument.*"—I am anxious to discover and disseminate "truth," and cannot yet, however, conceive that his opinion is founded on that solid basis, nor can I see any thing like *proof* of the superior utility of the ox over the horse, in the arguments of the advocates for the former animal. I desired that A. N. would point out what he conceived to be erroneous in my comparative statement inserted in your October Magazine; instead of attempting that, however, his labours have not brought forth any thing, on this long-controverted subject, but *assertion*, or a *strange conclusion*, neither preceded nor supported by arguments or facts, and I cannot avoid remarking, that this conduct is *peculiarly* inconsistent in a man who, almost at the same moment, *directed* others to produce more matter of that nature.—You will, no doubt, recollect, Sir, that at the commencement of this controversy, I endeavoured to refute the opinions of Lord Somerville, by shewing that the preference which is given to the horse in cultivating the soil, is highly advantageous to the farmer, and useful to the community in raising a greater quantity of human food than could be produced under the ox system.—In my attempts * to shew these beneficial effects, I calculated on *average* quantities; and surely Agricola Norfolciensis will not object to this mode, for he has himself † very correctly stated "that every trial of strength between two different modes of tillage, if reduced to pounds, shillings, and pence (ought to be calculated on the *average* quantity throughout England."—The dispute between him and me, is not *precisely* of the na-

* In your 51st number.

† At page 252, of your 45th number, in his letter on drilling, seed-corn, &c.

ture of that into which I entered in your Magazine for August last; and therefore I shall not now state any thing farther on the loss which the community would sustain, if oxen were universally preferred in farm labour.—He has not, like A. Meridionalis, asserted the superior merits of the labouring ox on *every* species of ground, but only on certain kinds, which he has not condescended to describe to us. My estimates of the annual expence of the ox and the horse, include that on turnip soils, and those on which it is injudicious management to cultivate that valuable root. In these calculations, however, as the *average* is taken, it will require some little trouble to ascertain the expence on *each* sort of land, therefore, I now add *separate* estimates.

Annual expence of a labouring ox on turnip farms.

	£.	s.	d.
Summering.—Pasture grass, with an allowance of tares	5	0	0
Wintering.—Straw, 1l. 10s. Turnips about half an acre, 2l. 15s.	4	5	0
Interest on the price of the ox at 5 per cent. per ann.	1	1	0
Harness, shoeing, &c.	1	2	0
	11	8	0
Deduct the increased value of an ox in one year	2	0	0
Annual expence of an ox *without corn*	9	8	0
Expence of eight oxen	75	4	0
Wages, victuals, &c. of a driver	16	10	0
Annual expence of a plough, for which eight three-years old oxen are supported *	91	14	0
Expence of six oxen	56	8	0
Wages, victuals, &c. of a driver	16	10	0
Expence of a plough, for which six oxen, four years old, or upwards, are supported	72	18	0
Therefore the expence of an ox plough being the 1st year	91	14	0
And the 2d and 3d years	145	16	0
	3)237	10	0
That for one year will be	79	3	4

* Exclusive of that for the holder.

	£.	s.	d.
Brought over	79	3	4
The annual expence of a two-horse plough being*	42	6	0½
The balance in favour of horses will be	36	17	3½

Annual expence of an ox where turnips are not cultivated.

Summering as above	5	0	0
Hay and straw in winter	8	2	6
Interest, harness, shoeing, &c.	2	3	0
	15	5	6
Deduct the increased value of an ox in one year	2	0	0
Annual expence of an ox *without corn*	13	5	6

Annual expence of eight oxen	106	4	0
Driver	16	10	0
	122	14	0

Annual expence of six oxen	79	13	0
Driver	16	10	0
	96	3	0

Expence of an ox plough the first year	122	14	0
Ditto of ditto the second and third years	192	6	0
Ditto for three years	3)315	0	0
Ditto for one year	105	0	0
And the annual expence of a two-horse plough being	42	6	0½
The balance in favour of horses will be	62	14	0½

These are the general modes of feeding and employing labouring oxen, under which *experience* has proved that the quantity of land ploughed, *in the most favourable situations*, is scarcely equal to, and in most situations not above four-fifths or five-sixths of that done by a pair of good horses (driven by the holder with cords,) in the space of 12 months. *Experience* has also proved that *in some situations* four good oxen (two of

* Including 2l. 12s. 6d¼—the annuity necessary to pay off the purchase price of a horse in fourteen years, allowing compound interest.

them employed and driven by the holder for four or five hours at a time) *with about as much corn* as horses are allowed,* will perform nearly as much field labour in one year, as two good horses driven as above, and fed in the usual manner. Under these circumstances, however, oxen have not improved in value; on the contrary, many of them, at the expiration of a year, have been depreciated in the estimation of the grazier. Let us now endeavour to estimate the

Annual expence of an ox upon a turnip farm, when four oxen are supported for one plough.

	£.	s.	d.
Summering. Pasture grass, with an allowance of tares	5	0	0
Autumn, winter, and spring. Hay for thirty weeks, ten stone per week, at 5d. per stone	6	5	0
Ditto half an acre of good turnips	2	15	0
Ditto oats (partly small) 60 bushels at 1s. 11d per. lb.	5	15	0
Interest, harness, shoeing, &c.	2	3	0
	21	18	0
Therefore the annual expence of a 4 ox plough being	87	12	0
And that of a two horse plough	42	6	0½
The balance in favour of horses will be	45	5	11½

Annual expence of an ox, where turnips are not produced, when four oxen are supported for one plough.

	£.	s.	d.
Summering. Pasture grass and tares	5	0	0
Autumn, winter, and spring. Hay for 30 weeks, 19 stone per week, at 5d. per stone	11	17	6
Ditto, oats 30 weeks, 2 bushels per week, at 1s. 11d. per bushel	5	15	0
Interest, harness, shoeing, &c.	2	3	0
	24	15	6
Therefore the annual expence of a 4 ox plough being	99	2	0
And that of a two horse plough	42	6	0½
The balance in favour of horses will be	56	15	11½

These calculations being more *particular* than those I communicated on a former occasion, will still more clearly show the superiority of the horse over the ox *on all descriptions of land;* and I must remind your readers that they are founded on the quantities of food consumed in the course of very ac-

* And much more hay when turnips are not given.

curate experiments conducted by some *practical farmers* who *themselves* paid the most minute attention in weighing, &c. &c. and that almost all the advocates for oxen have overlooked this important *fact*, namely, that these animals consume a much greater quantity of hay, &c. in a given time than horses. These estimates will also more clearly show that Agricola Meridionalis's *five wonderfully* powerful oxen would consume the produce of considerably more than twenty-five acres of land, when my *four* horses would consume that of only twenty acres, annually, and consequently, that he has introduced a *paralogism* at page 322 of your 52d number. This gentleman, and your correspondent Rusticus, enlarged on the vast *strength* of the ox, and his power "at an even and steady pull." This part of the controversy, however, engaged but little of my attention, first, because it was not the superior strength of the ox (which by the bye I am not disposed to admit *) that I was discussing, *but the comparative merits of that animal and the horse in farm labour, founded my opinions on experience, both with regard to the quantity of work done, and that of the food consumed*; and secondly, because I am satisfied that *practical farmers* will not prefer an animal on account of his superior strength, but on account of the *balance* in the comparison of expence, with the work done during one, two, or more, years' labour.

As I have not calculated on fewer than two oxen against one horse, Rusticus will probably repeat the questions, "whence is the necessity for this? Cannot one ox be tried fairly against one horse?" He should, however, recollect, that in various parts of this country, *experience* has fully proved that four good oxen highly fed with corn, hay, &c. cannot perform so much farm work in the course of one, two, or more, years, as two good horses. After which I hope, he will clearly perceive a powerful reason why we do not labour *one* ox against *one* horse. He should know that the delicious flesh of the ox brings a far greater price in this country than in France or Russia, and that we highly disapprove of *wasting* it to the amount of ten or twelve pounds sterling in a year, in so unmerciful a contest as that of *goading* one pair of oxen against one pair of horses for that length of time. But, Sir, let us *suppose* the ox to receive as much corn, with his hay and other food, as he could consume, and that *then* our graziers would not reckon the depreciation nearly equal to 10l. will Rusticus, *after a careful examination of the above estimates of food and work*, contend that two ox ploughs would be as beneficial as those with two horses? It is far from being my intention to assert that *every* part of the practice of agriculturists in France

* Where are their proofs, from *fair* experiments made with British horses and oxen, of this superior strength?

and Russia is inferior to our own; Rusticus will, however, I presume, admit that, *upon the whole*, the farmers of Great Britain are more judicious and discerning cultivators than the husbandmen of these two countries; and when he is informed that oxen have been *fully* tried, as labouring animals, in all parts of this kingdom, and that they are now almost universally superseded by horses, more especially in our best managed districts, he will, I hope, conclude that these cultivators, *who are unquestionably the best judges, and more interested than any other men, in the country*, would not have given the preference to the latter animals, but from a thorough conviction of the comparative inutility of oxen. When Agricola Meridionalis maintained the improvement which he conceived might be introduced in breeding oxen for the labour of the farm, he stated "the gigantic strength of these animals from some specimens which have been produced from his Majesty's farms." Permit me to inform him, that the heaviest oxen ever produced in this kingdom, were bred and fed in the counties of Northumberland and Durham, that those *generally* bred in this district are the largest in Great Britain, that within the last fifteen years one Northumberland farmer worked at one time, in a very favourable situation, upwards of eighty of the most powerful (from strength and agility) he could obtain, that he employed and fed them in various modes, that without changing his situation or system of husbandry, he has greatly reduced the number of his ox, and increased that of his horse, ploughs; and that, though he was formerly a warm advocate for oxen, he now acknowledges that they are more expensive labouring animals than horses.

Soon after I read the above remark respecting his Majesty's oxen, I determined to draw up a paper on their employment and the management of the royal farms; I have not yet, however, *fully* considered the information I have received on these subjects. Pray, Sir, be so good as to inform me in your next number whether you have any objection to publish a paper of this nature, if I therein have the "assurance" to express opinions different from those entertained by his Majesty's agricultural minister.

I am, Sir, yours, &c.

AGRICOLA NORTHUMBRIENSIS.

ON THE PROPER PROPORTION OF SEED. IN ANSWER TO "A NOVICE."

To the Editor of the Agricultural Magazine.

SIR,

WHILE addressing an answer to "A Novice," who in your last Magazine put some queries respecting the important matter of seed-corn, necessary for soils of various

descriptions, I shall consider myself as one only of many more able correspondents who will notice his inquiries, and from whose collective mass of evidence a just verdict may probably be passed. I shall not, therefore, attempt to give any opinion beyond my own experience and actual observation. Your correspondent expresses his regret, that there should exist such diversity of opinion upon a subject of such magnitude. The fact is, that excepting a few judicious men of a reasoning and thinking turn of mind, the generality of farmers are guided in their judgment and practice solely by the customs of, either their fathers or of the neighbourhood they live in, and hence indiscriminately adopt light-land usages upon the heaviest soils. Being myself a cultivator of a sandy loam, worth from fifteen to twenty shilling per acre, I shall confine myself to such soils at present, although I have not been an inattentive observer of stiffer ones.

I have always found, that of wheat, if dibbled or drilled, six pecks are abundantly sufficient for an acre; if ploughed under, from eight to ten pecks* are requisite. If less seed is drilled, there will, I think, be too thin a plant, the almost sure consequence of which I have found to be, a stiff, dark-coloured, proud-looking crop indeed, before harvest; but when threshed, a thin shrivelled grain. If more, a thin, weak straw, small ear, and consequently small produce, infallibly prove this practice highly injurious. In short, I am led to conclude, that if it were possible to deposit single grains in our soils, in squares of *four inches*, such would be the *most desirable* distance. Each plant would then tiller abundantly, and every vacancy be filled up. I should hence conjecture, that strong soils would require larger distances, as possessing stronger powers of fertility, and of course, of producing side-shoots in greater abundance; the inference, therefore, from these premises, would be, that the richest and strongest soils require the least seed.

To the growth of barley, the greater part of this county is universally allowed to be particularly well adapted. Before I practised the drill system, like the rest of my neighbours, I uniformly allotted four bushels for seed to every acre. I now drill from two and an half to three, with six-inch intervals, and find the drills rather overstocked with seed; and, indeed, an accidental mistake in placing the regulator of the machine

* The only reason I can assign for more seed being required when broadcast than when drilled, is, that ploughing under, however carefully performed, buries a great part of the seed too deep. This observation I have repeatedly made on stiff soils, when I have known a full coomb per acre of peas committed to the earth, by broadcast farmers, and the plants have been so thin on the ground, that it might be reasonably supposed not more than a bushel had been sown. The rest must have perished.

in the wrong hole, for a bout or two, has convinced me, from the appearance of each part at present, that the thinnest seed will produce more, both of bulk and grain, than the other. It is to be observed, that the field is in the highest condition: whether the same consequence would have followed on an exhausted spot of similar land, I cannot positively decide; nor, indeed, in another case, which must occur every day, viz. whether late or early sowing, requires different proportions of seed, setting aside the necessity of allowing a little more seed in early sowing, as being then most exposed to the depredations of rapacious birds. Nothing but repeated and closely attended experiments, for a series of years, can determine these questions, and even then the proverbial uncertainty of our climate would render the whole a matter of probability only, with no sure foundation to ground a rule upon, that should seldom fail. I shall not detain you farther on this subject, Mr. Editor, than merely to add, that the same observations may be applied to peas and oats, of which my usual allowance does not exceed three bushels per acre, if drilled; nor would I sow more if broadcast.

I am, Sir, &c.

AGRICOLA NORFOLCIENSIS.

P. S. I trust I shall not incur the censure of Agricola Northumbriensis a second time, if I take the liberty of addressing a word to him, *in the same letter* in which I have treated a subject not at all related to our late correspondence. I beg leave to assure that gentleman, that I feel as strongly as he can the impropriety of filling your sheets with matter quite foreign to the purpose of your work, and shall therefore be cautious how I transgress, and that I hope he will continue his communications on agricultural subjects in the same spirited and *unreserved* style, of which, notwithstanding what has passed between us, I shall be foremost to acknowledge the merit; begging, however, this one favour of him, that he will permit *me* to include more than one subject in a letter, if more than one occur at the same time; having neither time nor inclination to make every topic, incident, or observation, the subject of a distinct epistle.

A GENERAL BILL OF INCLOSURES.

To the Editor of the Agricultural Magazine.

Sir,

BOTH in the House of Parliament and out of it, both in the city and country, by men in every condition and rank in life who have at all attended to the subject, I have

heard serious complaints of the inconvenience which arises from the necessity of having separate acts of the legislature for each distinct inclosure. It is no wonder that dissatisfaction from this cause is so generally expressed, but it is surprising, that what may be so easily remedied has been hitherto continued with all its disadvantages.

I have all my life long been so intimately connected with persons fearful of innovation, that the prominent reflection of my mind when I inquire into the propriety of doing any thing, is first, if it have ever been done before, and where, and when, and under what circumstances? If it have been done some ten years ago, I always doubt the thing will be considered too new; but if an hundred, I hope that this will be granted to be a sufficient time for the experiment, and that the proposition will not fall under the dreadful stigma of innovation.

It is, therefore, with some hope of a favourable reception, that I submit to the attention of your readers an extract from a bill passed for inclosures in Scotland, in the year 1695. It has been found extremely beneficial, and perhaps may have occasioned the rents to be nearly doubled in that part of the kingdom. Whether it be wise or not to adopt some such regulation in this country, is the question to which I wish to direct the regards of your intelligent correspondents.

The words are as follows:—"All commons, excepting those belonging to the King in property, or royal burgage, may be divided at the instance of any individual having interest by summons, to all persons concerned, before the Lords of Session, who are empowered to discuss the relevancy, and to determine upon the rights and interests of the parties concerned; to divide the same among them, and to grant commission for perambulating, and taking all other necessary probations to be reported to the Lords, and the process to be ultimately determined by them; they declaring that the interest of the heritors having right in the commons, shall be estimated according to the value of their respective lands and properties; and that a portion be adjudged to each adjacent heritor in proportion to his property; with power to the Lord to divide the mosses, if any be in the common, among the parties having interest; or in case they cannot be conveniently divided, that they remain in common with free entry, whether divided or not."

I do most anxiously recommend, that on a matter of so much importance as the cultivation of the soil, and the means of subsistence to the people, the private interests of officers and placemen may not obstruct the public good, but that

some general measure of this kind may be adopted, by which the whole country may be rendered productive.

I am, Sir, yours, &c.

July 3, 1804. AGRICOLA MERIDIONALIS.

PECULIARITIES IN FARMING BY A GENTLEMAN IN THE NEIGHBOURHOOD OF THE CITY OF DURHAM.

To the Editor of the Agricultural Magazine.

SIR,

THE annexed letter having fallen under my inspection, I have conceived it would be very acceptable to you. The parties concerned are well known, and it will not on that account be received with the less respect. It is, Sir, by collecting these topographical observations that a body of agricultural knowledge will be united, which will render your miscellany a permanent source of national improvement.

Letter to Sir William Appleby on the Agricultural Practices in the neighbourhood of Durham.

SIR WILLIAM,

AS you have pleased to require me to give you an account of any beneficial agricultural practices in this county, which if adopted in other places might be of general utility, and having done me the honour, at the same time, to intimate that the President of the Board of Agriculture would be highly obliged thereby, I feel it my duty to give him and the Board, through you, every information in my power, and shall be ready to give the same to any individual who may wish to inspect my machines. You will readily perceive, that it will be unnecessary for me to specify any mode that is already universally practised in this neighbourhood, every such particular being, I am persuaded, inserted in the Report made by your ingenious and sensible friend Mr. Grainger, of the agriculture of this country; otherwise it should have been done, if you had desired it, but it did not appear to me to be your wish.

I will, therefore, take the liberty to inform you only of such as are not, perhaps, used by any farmer here but myself, and by which I find the greatest benefits, and would on that account seriously recommend my brother farmers to adopt the same. You seemed peculiarly attentive (as I understood by direction of the President of the Board) to my Schuffler, or Cultivator, and Double Bull Patent Harrow. I therefore take the liberty to inform you, that I have, for this two years or more, used the Schuffler, or Cultivator, as described in the Nottingham Agricultural Report, which, with many others,

you had the goodness to lend me. I find it of such singular advantage, not only in ploughing, but also, at the same time, in cleaning, six acres for one done in the usual way, with more dispatch and efficacy than any other plough, harrow, or machine whatever, that I do honestly declare to Sir John and you, I would not want it for an hundred times its price, though I can, and intend to make some improvements in it. When I had the honour of seeing you, you also observed another very curious and excellent instrument I have, namely, Mr. Perkins', of Stockton, double bulled patent harrow, value two guineas. I assure the Board and you, I would not be without it on any consideration, such are its good effects.

You saw my Dutch drilling and excellent sowing machine, for all sorts of grain, which you did not think comparable to the above mentioned person's new invented drill machine for the like purposes, value five guineas. Accordingly, I mean to examine, and if approved, will have one of them.

You were also very attentive to my large horse thrashing machine for every species of grain, (value 100l. at least) whereby I can, if necessary, with expedition and efficacy, thrash out a large stack in a day; and notwithstanding you were pleased to avow yourself hostile to the invention and use of any machine destructive of the manual labour of the peasant or useful handycraft, as being highly injurious to the population of any kingdom, which you said, and perhaps very justly, is its greatest treasure; yet I must, with great respect, beg leave to differ from you, being clearly of opinion, that not only the horse, but hand-threshing machine, which you told me was making by Mr. Murray, of Chester-le-street, near Durham, (value from ten to twenty guineas) would be of general utility, and great service to the country, for the reasons I had the honour to submit to you; and humbly flatter myself, that no such fatal consequences will result therefrom as you seem to apprehend.

I condemn with you, Sir William, the very impolitic but general practice of this country among farmers, in not laying on their manure till such time as it is rotten, as they term it, when most of its salts and juices are exhausted by exhalation or otherwise, whereby it becomes of little or no use when applied. Accordingly, my practice has long been (a practice from which I derive the greatest advantages, not only by improving the ground by it, but also obtaining a much greater produce at the time) to cause the dung to be carted out and laid on the ground six months sooner than is usual, having previously turned it twice over as speedily as possible; the sooner the better; and every farmer, in my humble opinion, would do well to follow the same practice. I think proper to

acquaint you, that I have this season dusted sixty bushels of soot upon two acres of land for turnips, and also intend to manure it by way of experiment, and expect it will repay me with good interest, when you shall be informed of the effects, to be transmitted to the Honourable Board of Agriculture.

I am fully sensible of the great advantages derived by watering meadow land, insomuch so that I would spare no expence to accomplish it: but the situation of my grounds and the want of necessary springs render such beneficial practice impossible. However, it ought certainly not to be neglected by every competent farmer who has the good fortune to be possessed of the means.

I concur with you most heartily, that it would be greatly to the advantage of every farmer to lay in all or as much of his meadow land as he possibly can, for the production of hay by Candlemas, or new Lady day at furthest, when he would be assured of a plentiful crop every year. For one, I make a constant practice so to do, and consequently never am in want of fodder, as is too often the case from the contrary, though general use; and I am the more enabled to do it, because I keep all my horses in the fold-yard, fed with green fodder, principally clover, during the whole summer, thereby collecting a much greater quantity of manure which amply repays me for the extra trouble. But as you are pleased to inform me, that the cultivation of lucerne is astonishingly productive, and consequently must be very beneficial for such purposes as it must be cut three or four times a year, I will esteem myself highly obliged if you will obtain me some of its best seed, when I will pay every attention to its cultivation and report its success to you in proper time.

My most grateful acknowledgments, with those of many of the capital farmers in this neighbourhood, are justly due to you for the perusal of the Agricultural Reports of the different counties, printed by the direction of the most honourable and beneficial institution that, in my opinion, ever was established in any country; and sincerely flatter myself, that the kingdom in general will derive infinite advantages therefrom, if the useful practices recommended in these reports are generally adopted.

Any further information which it is in my power to furnish, shall always be most readily given by,

Sir, your most obedient,

Hough Hull, near Durham, And very humble servant,

JOHN LEWKUP.

ON THE CORN LAWS, SHEEP, AND TURNIPS.

To the Editor of the Agricultural Magazine.

SIR,

IN your last Magazine there were some observations by Agricola Northumbriensis, on the influence which the existing corn laws have on the price of corn. My opinions on that subject are not exactly consonant with those of A. N. but as they will be given, so I hope they will be received, with good humour; the bounds of which, I am sorry to find, have not been exactly observed by some of your correspondents.

The most forcible argument which A. N. urges in favour of the bounty system, is the comparative opulence of this nation with those from whence our foreign corn is principally imported, by which, were a free trade allowed, they would be enabled to sell us their corn at a much cheaper rate than we can grow it, from the consequent lowness of rent, labour, &c. But I think a little reflection on the subject will convince him, that this argument is very fallacious. I admit that in all countries not enjoying an extensive commerce, all rude produce must be lower than with us, but it is equally plain, that all manufactures must be proportionably dearer, and it is in those that our foreign corn is principally paid for; or in other words, the value of our manufactures which we annually export to those countries, equals, if not exceeds the value of the corn imported from them. Now what would be the effect of the prohibition of that importation? Does it not clearly appear, that not being allowed to send us any of their corn, it would be equally impossible for them to receive any of our manufactures? The consequence would be, that a part of the capital which A. N. asserts yields annually to the trader or manufacturer, and consequently to the nation, a revenue of at least 20 per cent. would be deverted from that employment to the improvement of heaths and bogs, where it would not yield even 10 per cent. to the proprietor, without receiving a bounty from Government.

I am a farmer myself, and no man can wish more ardently than I do for some relief from our present distressed situation, but I doubt very much whether the measure proposed by A.N. would permanently produce that effect; and even if it would, are our legislators to make laws for the benefit of one set of men, or that of the whole nation? and I think I can make it clearly appear, that the benefit which even the landed property would receive from such a measure, would be very trifling, bearing no proportion to the injury which the nation would sustain.

A. N. advises a large bounty on exportation, when wheat is below 56s. a quarter. He does not mention other grains,

but I suppose he intended that they should be included. We will suppose the bounty to be 6s. a quarter on wheat, and 3s. on barley and oats. Each of these would immediately advance the sum given as a bounty above its natural price*. But does A. N. suppose, that the whole of this would be clear gain to the landholders? Surely not. In the first instance, at least half of the tax levied to pay the bounty must be paid by themselves; then labour, poor's rates, &c. would in a short time advance about a tenth, and as the price of most of the necessaries of life is regulated by that of corn, the expences of housekeeping would increase in the same proportion. For which reason, I think the following is a tolerably correct estimate of the benefit which an estate of about 300l. *per annum* would receive from the above bounties. I have selected a farm of that size, as it is that of the one which I have always occupied.

GAIN BY THE BOUNTY.	£.	s.	d.
Three shillings a qr. on 500 qrs. of barley and oats	75	0	0
Six shillings on 180 qrs. of wheat.....	54	0	0
	129	0	0

LOSS BY BOUNTY.			
Half of tax.....	64	10	0
Increase of labour.....	30	0	0
Ditto housekeeping.....	25	0	0
	119	10	0

Thus the clear gain to an estate which would grow 680 qrs. of corn would not exceed 9l. 10s. a trifle more than 4d. a quarter, and to produce this gain to the landholder, would cost the public (allowing half the bounty to be paid by the land) about 2s. a quarter. Perhaps it might be two or three years before the increase of labour, poor's rates, &c. would equal that of the corn, and during that interval, the revenue of the land-holders would certainly be increased. But at the end of that time, if the bounty was increased, we should be in the same situation as we are now.

Hitherto, I have only stated my reasons against giving bounties on exportation, but I think those on importation when corn is higher, are equally impolitic. There were two

* By the natural price of corn, I mean the price of the labour which it costs to produce it, with a fair profit to the farmer, after paying rent, rates, and other outgoings.

ways in which this bounty was given during the late high price of corn. The first was by giving a fixed sum per quarter on all foreign corn imported, and the second by insuring to the importer, a price which would afford him a good profit if corn should fail. Both of them are subject to unavoidable inconveniences. By the first method, the bounty will be given for a great deal of corn which was grown in England. The second holds out an almost irresistable temptation to the importer to buy the cheapest corn he can procure, be the quality ever so inferior. And both of them have the same tendency to reduce corn below its natural price, as the bounty on exportation has to raise it above it; and to this cause, and the long prohibitions which the Addington ministry continued on the exportation, may in a great measure be attributed the lowness of price which we have experienced for these last two years. And were perfect freedom allowed in the corn trade, I have little doubt that corn by regaining its natural price, would be sufficiently high to leave the farmer a profit on his capital equal to that of the manufacturer or trader*.

I perfectly agree with A. N. in his opinion of the Norfolk sheep, but the stigma will fall very lightly on the Norfolk farmers, as I think I may venture to assert, that in almost any sheep fair in the county, at least two-thirds of the sheep will be found to consist either of Leicester's, Southdown's, or mixed breed between the Norfolk and Leicester. The Norfolk's are now almost exclusively confined to barren heaths, where they have to walk two or three miles to and from fold every night and morning: I do not pretend to justify the practice, nor to say that Southdown's might not be more profitably substituted, but prejudices are not easily removed. Many of our best farmers have tried sowing turnips on two-bout ridges, but all with whom I have conversed, say that the additional produce will be very little, and not equal to the additional expence of tillage.

I formerly sent you a letter, signed a Norfolk Farmer, but as I find that signature claimed by a prior correspondent, I shall, in future, sign myself,

Your obedient servant,

Walsingham,
July 18, 1804. R. W.

* I may here appear to contradict the former part of my letter, where I admitted that corn might be imported cheaper than we can grow it. But ours is by no means the highest corn-market in Europe; in Holland, particularly, and France, it is generally higher, and when that should be the case, thither, by some means it would find its way.

ON THE FREEDOM AND RESTRICTION OF THE CORN TRADE: ON BOUNTIES FOR ITS ENCOURAGEMENT, AND ON THE ESTABLISHMENT OF PUBLIC GRANARIES, AS A RESOURCE IN YEARS OF SCARCITY.

To the Editor of the Agricultural Magazine.

SIR,

THERE are sometimes questions of such magnitude, of such unquestionable importance to the security and happiness of the country, that the conductors of periodical publications are tempted to introduce them to public notice, in print, even if they bear no relation whatever to the nature and design of the work in which they appear. This inclination, carried somewhat too far by persons of sanguine habits, has injured, and frequently destroyed these fugitive and occasional works, which rightly edited, I will boldly say, conduce more essentially to public instruction and entertainment, than most of the ponderous volumes that load the counter of the bookseller. In justice to you, Sir, I readily acknowledge you are not chargeable with this defect, and whatever opinion I may form of the comparative ability of your correspondents, I can entertain no reasonable doubt of the success of a work which keeps so correctly in view its legitimate object.

I do not think if I make a few remarks on policy with respect to the corn trade, you will consider me to be deviating from the line you would preserve.

Your correspondent, Agricola Northumbriensis, (No. 59, page 420) speaks of injurious fluctuations in the price of corn, within the last eight or twelve years, and he says, "It is extremely desireable that such measures were pursued, as would render our markets, for the most necessary article of human subsistence, much more steady, *at prices adequate to the greatly increased expences of farmers*, for without such measures, we may look in vain for constant and adequate supplies of corn."

That intelligent writer is not, I trust, unacquainted with the observations of the Bishop of St. Asaph, that "too much legislation had already been employed in the article of corn." He is aware, that the most elaborate enquirers on this subject have determined, that all parliamentary interference, with respect to the importation or exportation of corn, is prejudicial. The aggregate interests of a nation, say they, must be composed of the separate interests of each individual, and as the latter is benefitted, so will be the augmentation of advantage to the whole community. They contend further, that every man employs his capital, and directs his industry, in the most productive way, when he is left uninterrupted, and in the enjoy-

ment of perfect liberty: that if all other trades are found more lucrative than the culture of the earth, the former should be pursued, and the latter neglected. They see no disadvantage from the importation of 100l. value in grain, in return for 80l. value in manufactures, and they archly remind us, that the bounties offered by government, must be levied, before they can be paid.

There is something so plausible in this reasoning, that it is with difficulty and reluctance we reject it. It seems so correct and philosophical to treat the trade of corn by the application of such comprehensive principles as we recognize in every other instance, that we unwillingly extract it from the general rule, and apply to it peculiar maxims in imitation of petty politicians, who consider every thing governed by separate laws, and every case to depend upon its own exclusive and accidental merits. Feeling all that reverence which I ought to do for the grand primeval laws by which the natural and moral relations are protected, detesting the minute microscopic distinctions of frivolous disputants, I must still confess, that the commodity which furnishes the essential subsistence of life must be withdrawn from this general rule, and I trust I can shew it should be so excluded from the very reasoning the opponents of this measure have thought fit to employ.

In the first place, the friends of a free trade in corn conceive profit to be the only consideration by which the result is to be determined: but this is inaccurate; in articles of the first necessity, profit is an inferior object. These advocates forget the situation of the Phrygian king, of whose asses' ears I shall not now speak. Bacchus was desirous to reward him, and told him, whatever petition he would make should be granted. Midas desired, that whatever he touched might become gold. By this thoughtless prayer, his very nutriment was converted into that precious metal, and he had the most serious reason to lament that inordinate desire for profit to which he would sacrifice even existence. This is precisely the situation to which these politicians would expose the country: it would be in vain that the land were decorated with magnificent buildings, that all the gold of Ophire were possessed by our merchants, that Asiatic vanity were exhausted in parade and embellishment, if a scarcity of this essential produce prevailed, and we were exposed to the uncertainty of foreign supplies.

Two things we should propose to ourselves in respect to this article; a complete independence of foreign powers, and a regular supply from our internal resources. I readily admit, that from the peculiar circumstances of this country, British corn cannot enter a foreign market, without the encouragement afforded by a bounty. A moment's attention to the

comparative situation of Poland and Britain, or of the wild and extensive tracts of America and the narrow sphere of husbandry in these islands, will shew such an encouragement to be indispensable. Let any one compare the high price of labour, the great value of land, the expensive modes of husbandry, the increased cost of cattle, and the exorbitant rate of the implements of tillage, with the situation in this respect of the countries to which I have referred, and it will be perfectly clear, that without a bounty there can be no exportation.

A portion of these impediments has in a different point of view been attended to by the correspondent I have mentioned. He seems to exaggerate some of the particulars, and if what he stated were correct, there must be a very considerable bounty indeed to enable Britain to enjoy any competition in corn at the foreign markets. He states, that the wages of the labouring class within the last ten or fifteen years "have been increased upwards of 100, and in many parts of the country upwards of 150 per cent." To shew the foundation of my difference of opinion, would require a long and laborious calculation on the farming wages in the different counties of the kingdom; I shall therefore only assert from my observation in a great many different districts, with the state of some of which I am practically, and others theoretically acquainted, that the increase in the price of labour, is not more than from 10 to 20 per cent. within the period stated.

The same writer, I observed, speaks of the injurious fluctuations in the price of wheat, within the last eight or twelve years. Whatever may be the opinion of farmers, the general sentiment is, that the fluctuation within that period has not been injurious, but highly advantagous to that class of society; and the fact is, that for more than a century, no commodity of trade can be mentioned, which has been subject to so little variation as the leading article of produce.

	£.	s.	d.
From A. D. 1651 to 1660 incl. the average was per qr.	2	9	4*
.....1661 to 1670.....	2	8	10
.....1671 to 1680.....	2	10	7
.....1681 to 1690.....	1	19	1
.....1691 to 1700.....	2	16	10
.....1701 to 1710.....	2	3	2
.....1711 to 1720.....	2	4	10
.....1721 to 1730.....	2	1	11
.....1731 to 1740.....	1	17	2
.....1741 to 1750.....	1	13	9
.....1751 to 1764.....	2	1	8
.....1771 to 1788.....	2	10	4

Agricola Northumbriensis asserts "that from 7s. 6d. to 8s. 6d. per bushel would not (on an average of years) leave a

* Some difference in the measure makes this account not quite satisfactory; but it is sufficient for the general view here proposed.

profit of 10 per cent. per annum on agricultural capital." This is to say, that unless wheat be about 16l. a load, the farmer can have no adequate compensation for his industry. It will be no answer to this gentleman, that for the last century the cultivation of the earth must have been a ruinous pursuit, because he will tell us, that labour, rent, and taxes, have so extravagantly increased, that the farmer is now placed in a very different situation. I am willing to admit the weight of this consideration, but I must also place in the opposite scale, the prodigious improvements which chemistry and mechanics, and the general resources of philosophy have occasioned. It will be a little humbling to be obliged to acknowledge, that the increase of produce has not kept pace with the augmentation of expence, and if we think it has not, instead of boasting of the wonderful discoveries in agriculture which British energy, British gold, British talent, British strength, and British patriotism have produced, we must acknowledge, that the goat, the lean cow, and the ram's horn, by your friend, said to be employed in tillage in a neighbouring country, is more profitably engaged than the English cart-horse, and the multifarious implements of husbandry our native ingenuity has contrived.

Your correspondent feels dissatisfied with farming profit from a comparison he makes with commercial gain, and he talks of 40 per cent. as if that increase on capital were usual in merchandize. He does not seem aware, that almost every man of large capital in trade, considers eight or ten per cent., not only a sufficient, but an ample remuneration. If the commercial profits approached what A. N. supposes, a revolution in the capital of the country would be occasioned, which would impress with astonishment the most sanguine projectors of national prosperity.

I have made these observations by the way, because Agricola Northumbriensis is a writer of sufficient merit to deserve correction, and because they were immediately within my present object. On other parts of his paper less relevant, I may take a future opportunity of commenting, if the subject under discussion be sufficiently connected with my proposed enquiry.

After all I have said, I am willing to admit, that, at least as a temporary experiment, a bounty on the exportation of corn is politic.

I have mentioned two desiderata, the independence of foreign supply, and a regular native supply, which every wise statesman would propose to himself. To promote these, two expedients have been suggested. First, to balance the deficiency of one year by the superfluity of another. Next, to occasion

such an extensive cultivation of wheat, that in every year we may have a competence, and in ordinary and abundant years we may have a large portion for exportation.

The former expedient, every historian knows, has been attempted in different countries, by the erection of national granaries, into which the exuberance of the season was poured, and from which the wants of the people, in years of scarcity, were supplied. Such an establishment, must either be under the countroul of the government, or commercial factors. When we look to the use that has been made of this power over the health and subsistence of the people in different states, the love of liberty an Englishman possesses, would very much disincline him to furnish the means of such a political tyranny. An objection of another kind applies to the formation of such a depôt under the controul of commercial agents. The landed interest of this country would be placed under the authority of these factors, who in years of scarcity, would arbitrarily dictate the prices and conditions on which the land should be rendered productive; or in other words, on which the great landed proprietor should either possess a wide waste, yielding only noxious weeds, or a generous soil with an abundant produce, to supply the luxuries of his mansion, and the wants of his country.

It is true, that in small states, no inconsiderable inconvenience may arise, and great benefits may be occasionally derived from public granaries. Such has been the case in Berne and Geneva. But in great and populous countries, it is not only impolitic for the reasons I have stated, but physically impossible for those I shall presently adduce.

We will suppose that this island, comprising twelve millions of inhabitants, is to provide against one year of dearth, and that a sufficient supply for such a term is one quarter of wheat for each individual.

The quantity required in the granaries will be qrs.	12,000,000
The value at 2l. 10s. per qr.	£30,000,000
The weight would be tons	2,571,428
This quantity, at 1 foot deep in bulk, would cover acres	2800

It would be immediately acknowledged by the mere inspection of this account, that the establishment of granaries at all adequate to the supply of such an extended population, would be equally wild and impracticable. Your readers will include in their view of this subject, the loss of this immense capital, and the interest perpetually increasing upon it. Your more expert calculators will observe, that by

the application of such a fund, the accumulated load of the national debt would itself soon be discharged. To this should be added, the unavoidable deterioration of the quality from fermentation and other causes, and the consequent diminution of the quantity. We must not forget the charges of the management, and in this we must include the superb palaces which would be erected to cover the face of the country, enormous as "Babylon the great," for this vast emporium of national produce.

While the farmer is lost in the contemplation of these magnificent works, there is one argument against such a project with which he will immediately be rendered familiar. The principal encouragement to the industry of the field, is the regular price the produce will obtain, exposed indeed to some changes, but of which the grower can, in general, take advantage by a little foresight. But what wisdom or ingenuity can avail, if such a vast stock as we have supposed, be ready to be poured in upon the market at any period that the will of government, or the avarice of commercial factors shall deem convenient for public or private emolument. In such a case the farmer will have no security, and his employment will be exposed to all those inconveniencies, which must result from these powerful and mercenary competitors.

Many other objections might be made to the first proposition, but it is surely sufficient to shew the adoption to be an absolute impossibility.

The second scheme is, "to occasion such an extensive cultivation of wheat, that in every year we may have a competence. This is only to be done by encouraging tillage, and perhaps the most successful expedient for this purpose, is the bounty proposed. By these means, the farmer may always depend on a price of from 50s. to 60s. per quarter, and may often obtain much more. I speak here particularly of wheat, and of the proposed bounty of 5s. Other species of grain should receive encouragment in the same proportion. By this measure, the serious inconvenience will be avoided, which attends the depression of the price of corn, while the value of land is on every side augmented. Instead of seeing the country filled with coxcomical surveyors, and with wheat in every state of progressive corruption, we shall observe the golden ear waving in our fields, and have the land covered with corn, instead of granaries.

I am, Sir, yours, &c.

AGRICOLA SEPTENTRIONALIS.

July 14, 1804.

CRITICAL CATALOGUE.

Communications to the Board of Agriculture, on Subjects relative to the Husbandry, and Internal Improvement of the Country. Vol. III. Part II. 4to. NICOL, 1804.

THE *First Part* of this volume was noticed in our *Critical Catalogue* for March and April, 1802. By referring to those numbers of *The Agricultural Magazine*, it will be seen, that the "*Communications*" then published, and of which those before us are a continuation, were made in consequence of certain premiums offered by the Board, for the purpose of ascertaining the best means of converting certain portions of grass lands into tillage, without exhausting the soil; and of returning the same to grass, after a certain period, in an improved state, or at least without injury.

No. XV. the first Essay in *Part* II. is by Mr. J. Bailey, of Chillingham, Northumberland. This Essay is divided into five *Sections*, the first being introductory, and the four subsequent ones relating to clayey, loamy, sandy, and peaty soils. Old grass lands, under the first of these heads, may be converted into tillage, either by ploughing down the lea, or by paring and burning. If by ploughing, the depth to be ploughed should not be less than six inches, where the staple of the soil will admit of it. The rotation of crops may be as follows:—On deep loamy clays, oats; beans, drilled at thirty inches; wheat; fallow; barley; grasses: if the soil be too strong for oats, thin: beans drilled, the land trench ploughed; wheat; fallow; barley; grasses. Upon soils where the staple is too thin, or substratum improper for beans, the rotation should be:—Oats; fallow; barley, or wheat, *if drilled*; grasses. Where the soil is too strong for oats, thin:—Pease; fallow; barley, or wheat, *if drilled*; grasses. If the soil be too poor for pease, thin—tares; fallow; barley, or wheat, *drilled*; grasses.—If paring and burning be adopted, the spring months should be chosen for that operation, and then the rotation may be:—rape and wheat; beans; oats; fallow; barley; grasses. If the land cannot be got ready in time for rape, then wheat, beans, oats, fallow, barley, grasses. If the soil be too thin for beans, then wheat fallow, barley, grasses.

Under the head, *loamy soils*, our author includes all lands proper for growing turnips, and sufficiently dry for getting them off in winter. They ought always to be ploughed before winter; the depth from five to six inches; and then the rotation may be:—Oats; drilled beans, or cabbages, or potatoes; wheat; turnips; barley: grasses. When the soil has not sufficient depth or tenacity for beans, thin:—Oats; turnips, or potatoes; barley; grasses: or, oats; potatoes, or cabbages; wheat; turnips; barley.

On the subject of sandy soils, Mr. Bailey remarks:—that rich fertile sands may be employed to the greatest advantage in alternate grass and tillage; that very barren blowing sands will pay most in rabbit warrens; that blowing sands will grow turnips and rye, but no other grain to advantage, and will probably pay most in grass depastured with sheep.

For *peaty soils*, Mr. Bailey recommends paring and burning as the best mode of breaking up; after which, in the spring, may be sown,

white clover, 8 lbs; rib graſs, 4 lbs; ray-graſs, 1½ buſhel. Where the climate will not ripen corn, pare and burn for rape; then turnips; turnips again; then graſs.

No. XVI. is the production of Mr. J. Bridge, of Winford, Dorſetſhire. This gentleman, whoſe obſervations have been chiefly confined to the *ewe-leaſes* of Dorſetſhire, recommends a copious marling, at the rate of ſixty good cart loads to each acre, for three years previouſly to breaking up; by which time, the marle grows into, and become part of the ſoil. His experiment, which amply ſucceeded, was as follows:—In the autumn of the third year he firſt broke up the ground, and in the following ſpring ſowed it with tares. In the ſucceeding autumn he ſowed wheat, and in the third year turnips. The fourth crop was barley with broad clover, which in the fifth year he mowed for hay. The ſixth year he ſowed tares, the ſeventh wheat, the eighth turnips, and the ninth barley and ſeeds for the purpoſe of again laying it up. Before breaking up, his land was not worth more than 7s. 6d an acre, but is now worth full 20s.

No. XVII. contains ſome uſeful obſervations; but is of too miſcellaneous and indefinite a nature to admit of analyſis.

In No. XVIII. Mr. Ans, of Launceſton, in Cornwall, whoſe experiments have been chiefly made on clayey, loamy, and moory ſoils, recommends paring and burning, and the uſe of ſea-ſand as a manure, at the rate of 50 to 150 horſe-teams, weighing about 250 lbs. each, to an acre.

No. XIX. is an eſſay on gypſum, as a manure; by Mr. H. Smith, at Highſtead, in Kent. This is a very curious and intereſting paper, exhibiting the aſtoniſhing utility of gypſum.

No. XX. is a a truly original eſſay, the valuable production of an experienced practical farmer, J. R. Head, eſq. at the Hermitage, near Rocheſter.

The Rev. A. Youle, of Weſt Retford, Nottinghamſhire, recommends, in No. XXI. a ſyſtem of crops of only two years continuance; the firſt year potatoes, the ſecond barley. Let the courſe of huſbandry be as follows: firſt, plough the middle part of the lands to one-ſixth of their breadth, and pare off the ſward on the remaining part; then lay unſlacked lime, on the middle and ploughed part, at the rate of two and a half chaldrons an acre, and cover the lime with the whole of the ſods pared off, forming a bank of equal dimenſions, top and bottom, and making the breadth of it rather leſs than the ploughed part. After the ſods are gathered off, plough the lands for potatoes. Set them in the middle of May; but if the bank ſhould not be proper to plant them on, the loſs, on that account, will not be more than one-ninth of the field. In the beginning of winter, ſhould the land not be of a rich quality, lay parallel to the ſod-bank a quantity of rotten dung, or aſhes, at the rate of five tons an acre; then plough the ſod-bank, and mix the manure with the ſods and lime, and in throwing up the ſides of the mixture, form the new bank of leſs breadth than the former.—In the ſpring of the year, when the field is ploughed, and a few days before the ſowing of barley and graſs ſeeds, ſpread the mixture on the land; this manure will be good for the enſuing crops, particularly for the graſſes, as being the beſt preparation for making the ſurface a fine tilth.

The courſe of crops, recommended by R. Wynne, eſq. of Dublin, in No. XXII. is as follows:—1ſt year, potatoes planted in ridges with the ſpade, and dunged; 2d, potatoes in drills, with the plough; 3d, wheat ſown immediately after the potatoes; 4th, red clover ſown in April on the wheat; 5th, wheat on one year's clover ley; 6th, potatoes in drills, with the plough; 7th, wheat laid down with graſs-ſeeds. "This courſe of crops is by no means admiſſible; it is too ſevere."—*Note by a Member.*

To be concluded in our next.

HISTORY.

PROCEEDINGS OF AGRICULTURAL SOCIETIES.

Premiums offered by the Board of Agriculture, 1804.

No. I.—*Cottage.*

TO the perſon who ſhall build, and deſcribe to the Board, the cheapeſt cottage, being at the ſame time durable and comfortable, with not leſs than two rooms above, and the ſame number below. *the Gold Medal.*

A plan, elevation, and account of the materials and expenſe, verified by certificates, to be produced on or before the firſt Tueſday in May, 1805.

No. II.—*Cottage.*

To the perſon who ſhall produce to the Board the model of the beſt and cheapeſt cottage, on a ſcale of one inch to a foot; with eſtimates of the expenſe of erecting it—*from Five to Ten Guineas, according to merit.*

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

The ſame premium for 1805.

No. III.—*Cottages.*

To the perſon who ſhall build on his eſtate the moſt cottages (proportioned to the rental of it) for labouring families, and aſſign to each land ſufficient for a garden, not leſs than one-third of an acre—*the Gold Medal.*

Accounts of the expences of building—land aſſigned—culture, if any—and ſtate of the families, with the rent paid—verified by certificates, to be produced to the Board on or before the third Tueſday in April, 1805.

The ſame premium for 1806.

No. IV.—*Cows for Cottagers.*

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

Accounts to be preduced of the ſoil—articles cultivated—produce—ſtock kept—and every material circumſtance, verified by certificates, on or before the Firſt Tueſday in May, 1805.

The ſame premium for 1806.

No. V.—*Land for Gottagers.*

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

To be ſent to the Board on or before the firſt Tueſday in November, 1804.

The ſame premium for 1805.

No. VI.—*Culture of Plants.*

To the perſons who ſhall make the moſt ſatisfactory experiments, tending to the improvement of the culture of each of the following plants reſpectively, viz. wheat, rye, barley, oats, peaſe, beans, tares, buck-wheat, turnips, cabbages, rutabaga, potatoes, carrots, parſnips, clover, lucerne, ſainfoin, chicory, hemp, flax, hops—*the Silver Medal.*

Accounts, verified by certificates, to be produced on or before the ſecond Tueſday in May, 1805.

The ſame premium for 1806.

The ſame premium for 1807.

No. VII.—*Soiling Cattle.*

To the perſon who ſhall, through the entire ſummer of 1805, keep the greateſt number of cattle in ſtalls, houſes, or confined yards, and fed entirely in the ſoiling method with green food—*the Gold Medal.*

Certificates of the number of cattle, and acres of food, and ſorts eaten, the quantity of dung made, with other circumſtances of the experiment, to be produced on or before the firſt Tueſday in December, 1805.

The ſame premium for 1806.

The ſame premium for 1807.

No. VIII.—*Compariſon of Food to different Animals.*

To the perſon who ſhall, by experiments, aſcertain in the moſt ſatisfactory manner, and report to the Board, the comparative effect of certain articles of food when given to various kinds of live ſtock—*the Gold Medal.*

Graſſes, natural and artificial, mown and weighed; hay, cut chaff, corn or pulſe, oil-cake, turnips, cabbages, carrots, parſnips, potatoes, &c. compared, in the production of mutton, beef, butter, and cheeſe;—artificial graſſes, cabbages, roots, and corn or pulſe, in the production of mutton, beef, pork, or the fleſh of poultry. It is required that the food be weighed and regiſtered, and the animals alſo, with the increaſed weight noted from every ſort of food.

Accounts to be produced on or before the firſt Tueſday in March, 1806.

No. IX.—*Waſte Land.*

To the perſon who ſhall improve, and bring to the annual value of not leſs than 10s. an acre, the greateſt number of acres heretofore waſte, not leſs than fifty—*the Gold Medal.*

Accounts of the improvement, verified by certificates, including the ſtate of the land before the experiment, and of the cultivation, expences, and produce, to be laid before the Board on or before the firſt Tueſday in March, 1805.

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

The ſame premium for 1806.

The ſame premium for 1807.

No. X.—*Waſte Land.*

To the perſon who ſhall deſcribe to the Board, in the moſt ſatisfactory manner, from actual experiment on not leſs than one acre, the moſt profitable mode, *without the uſe of lime*, of bringing heath-land (the ſpontaneous growth of which is long or ſhort ling, or heath) into cultivation, and a ſtate of improvement—*Twenty Guineas.*

Accounts of the ſoil, previous to the improvement, and the means of effecting it, verified by certificates, to be produced on or before the firſt Tueſday in March, 1806.

No. XI.—*Draining.*

To the perſon who ſhall lay before the Board the moſt ſatisfactory account of one of Mr. Elkington's drainages—*the Silver Medal.*

The ſoil, and ſtate of the land before draining, the method and expence of the improvement, with a plan, and the reſult of the operation, to be produced on or before the ſecond Tueſday in December, 1805.

No. XII.—*Draining.*

To the perſon who ſhall execute, and report to the Board in the moſt ſatisfactory manner, the greateſt drainage, in any method the moſt applicable to the ſtate of the ſoil—*the Gold Medal.*

The ſoil, and ſtate of the land, before draining; the method and expence of the improvement, with a plan, and the reſult of the operation, verified by certificates, to be produced on or before the ſecond Tueſday in December, 1805.

No. XIII.—*Folding Sheep.*

To the perſon who ſhall, by a ſeries of the moſt ſatisfactory experiments, aſcertain the comparative advantages and diſadvantages, and beſt method, of folding or cotting ſheep—*the Gold Medal.*

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in April, 1805.

The ſame premium for 1806.

The ſame premium for 1807.

No. XIV.—*Irrigation.*

To the perſon who ſhall, in a country where irrigation is not generally in practice, water the greateſt number of acres, not leſs than ten, and in the completeſt manner—*the Gold Medal.*

To the perſon who ſhall, under ſimilar circumſtances, water the next greateſt number of acres, and in the completeſt manner—*the Silver Medal.*

Accounts of the old and new ſtate of the land, and its value, and of the method, expence, and produce, verified by certificates, to be laid before the Board on or before the third Tueſday in January, 1805.

The ſame premiums for 1806.

No. XV.—*Horſes and Oxen.*

To the perſon who ſhall make and report to the Board the moſt ſatisfactory experiments on the compariſon of horſes and oxen, in the general buſineſs of a farm—*the Gold Medal.*

The account, verified by certificates, to be produced on or before the laſt Tueſday in April, 1805.

The ſame premium for 1806.

The ſame premium for 1807.

No. XVI.—*Manures.*

To the perſon who ſhall lay before the Board the moſt ſatisfactory account, verified by chemical experiments, or other ſufficient authorities, of the nature of manures, and their effect on the principles of vegetation—*the Gold Medal.*

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

The ſame premium for 1805.

No. XVII.—*Manures.*

To the perſon who ſhall lay before the Board the moſt ſatisfactory account of the application and effect of manures, verified by practical experiments on not leſs than one acre for each ſort of manure—*the Gold Medal.*

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

The ſame premium for 1805.

No. XVIII.—*Marle and Chalk.*

To the perſon who ſhall report to the Board the reſult of the moſt ſatisfactory experiments, made by, or under the inſpection of, the reporter, on marling, chalking, or claying, not leſs than 100 acres of land—*the Gold Medal.*

It is required that the nature and quality of the manure, and of the land on which it is ſpread, be deſcribed.

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in March, 1805.

No. XIX.—*Subſtitute for Litter.*

To the perſon who ſhall make and report to the Board the moſt ſatisfactory experiments to aſcertain the beſt ſubſtitutes for ſtraw, ſtubble, ruſhes or fern, ſo as to anſwer the purpoſe for littering horſes and cattle, and raiſing manure—*A piece of Plate, or Ten Guineas.*

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in March, 1806.

No. XX.—*Manuring Graſs and Arable Lands.*

To the perſon who ſhall draw up and produce to the Board the moſt ſatisfactory account, founded on his own experience, or on ſpecified facts, of the comparative advantages of manuring graſs and arable lands—*the Gold Medal.*

Accounts to be produced on or before the firſt Tueſday in March, 1808.

No. XXI.—*Manuring with Peat.*

To the perſon who ſhall report to the Board the beſt account, verified by ſatisfactory experiments, either on graſs or on arable land, of applying peat moſs, mixed or unmixed, as a manure—*the Gold Medal.*

Accounts to be produced on or before the firſt Tueſday in April, 1806.

No. XXII.—*Salt.*

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

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

To be produced to the Board on or before the firſt Tuesday in December, 1805.

The ſame premium for 1806.

No. XXIII.—*Plough.*

To the perſon who ſhall produce to the Board the plough which ſhall, with the leaſt force, turn a furrow not leſs than ſix inches deep, and nine broad, in the beſt and neateſt manner—*from Five to Fifty Guineas, according to merit.*

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

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

No. XXIV.—*Laying down to Graſs.*

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

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

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

The ſame premium for 1806.

No. XXV.—*Seed-Wheat.*

To the perſon who ſhall, by the moſt ſatisfactory comparative experiments, aſcertain the proper quantity of ſeed-wheat to be uſed

per acre in the common or broadcaſt huſbandry; not leſs than one acre to be applied to each quantity of ſeed—*the Gold Medal.*

Accounts, containing a particular deſciption of the ſoil, and the preparation thereof, including the manuring, if any; alſo the time of ſowing; the various quantities of ſeed employed; with the reſpective products, verified by certificates, to be produced to the Board on or before the firſt Tueſday in December 1804.

The ſame premium for 1805.

No. XXVI.—*Seed-Barley.*

To the perſon who ſhall, by the moſt ſatisfactory comparative experiments, aſcertain the proper quantity of ſeed-barley to be uſed per acre, in the common, broadcaſt huſbandry; not leſs than one acre to be applied to each quantity of ſeed—*the Gold Medal.*

Accounts, containing a particular deſcription of the ſoil, and the preparation thereof, including the manuring, if any; alſo the time of ſowing; the various quantities of ſeed employed; with the reſpective products, verified by certificates, to be produced to the Board on or before the firſt Tueſday in December 1804.

The ſame premium for 1805.

No. XXVII.—*Seed-Oats.*

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

No. XXVIII.—*Preparations for Wheat.*

To the perſon who ſhall make and report to the Board the moſt ſatisfactory experiments, comparing various preparations for wheat, on the ſame ſoil—*the Gold Medal.*

The preparations to include beans or peaſe, drilled and horſe- and hand-hoed; red clover, buck-wheat; tankard turnips eaten on the land; winter tares mown for ſoiling; and buck-wheat ploughed in for a manure.

Accounts, containing a deſcription of the ſoil, previous culture and manure, if any, and the produce and value of the preparatory crops, with the produce of the wheat, verified by certificates, to be produced on or before the firſt Tueſday in March 1807.

No. XXIX.—*Culture of Wheat.*

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

For the next beſt eſſay—*Thirty Guineas.*

For the next beſt—*Twenty Guineas.*

Accounts to be produced on or before the firſt Tueſday in February 1806.

No. XXX.—*Culture of Hemp.*

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

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

No. XXXI.—*Culture of Hemp.*

To the person in His Majesty's colonies of Upper or Lower Canada, New Brunswick, and Halifax, who shall make the most satisfactory report to the Board of the present state of the cultivation of hemp in those provinces, in respect of soil, previous state of the land, manure, seed, culture, watering, dressing, produce, price, and the expence of labour, with the state of population as applicable to this branch of culture; as well as of the obstacles to the extension of it, the best means of removing them, and of promoting the cultivation—*Fifty Guineas.*

The report to be made on or before the first Tuesday in January 1806.

No. XXXII.—*Weighing-Machine.*

To the person who shall, before the 25th of March 1805, produce to the Board, or shall erect in London, in some place to which the Members of the Board can conveniently have access, the machine for weighing cattle alive, as high as 300 stone at 8lbs. and as low as 5 stone weight, that shall be the cheapest in proportion to its accuracy and utility—*Twenty Guineas.*

No. XXXIII.—*Machine for Reaping Corn.*

To the person who shall invent and produce to the Board the best machine for reaping corn—*from One Hundred to Two Hundred Guineas, according to Merit.*

Simplicity, and cheapness of construction, and (if the application of horses or oxen be required) ease of draft, will be considered as essential objects.

To be produced on or before the first Tuesday in May 1806.

No. XXXIV.—*Diseases in Cattle.*

To the person who shall write and produce to the Board the best practical essay, founded on experiments, on the diseases of neat cattle, their symptoms and cure—*the Gold Medal.*

The essays to be produced on or before the first Tuesday in May 1806.

No. XXXV.—*Diseases of Sheep.*

To the person who shall write and produce to the Board the best practical essay, founded on experiments, on the diseases of sheep, their symptoms and cure—*the Gold Medal.*

The essays to be produced on or before the first Tuesday in May 1806.

No. XXXVI.—*Diseases of Swine.*

To the person who shall write and produce to the Board the best practical essay, founded on experiments, on the diseases of swine, their symptoms and cure—*Ten Guineas.*

The essays to be produced on or before the first Tuesday in May 1806.

No. XXXVII.—*Operation of Tillage.*

To the person who shall report to the Board the result of the most satisfactory experiments on the various operations of tillage—*the Gold Medal.*

It is required that the ſoils on which the experiments are made be carefully deſcribed, and that the implements with which the operations are performed be explained.

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in March 1806.

No. XXXVIII.—*Food for Mankind.*

To the perſon who ſhall draw up, and produce to the Board, the moſt ſatisfactory accounts, founded on ſpecified facts, of the comparative food for mankind, produced by the application of graſs-land to cows, for butter and cheeſe; to oxen for beef; or to ſheep for mutton—*the Gold Medal.*

Accounts to be produced on or before the firſt Tueſday in March 1806.

No. XXXIX.—*Food for Mankind.*

To the perſon who ſhall draw up, and produce to the Board, the moſt ſatisfactory account, founded on ſpecified facts, of the proportionate difference between graſs and arable land, in producing food for mankind—*the Gold Medal.*

Accounts to be produced on or before the firſt Tueſday in March 1806.

No. XL.—*Paring and Burning.*

To the perſon who ſhall report to the Board the reſult of the moſt ſatisfactory experiments made by, or under the inſpection of, the reporter, in the paring and burning-huſbandry—*the Gold Medal,*

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in April 1806.

No. XLI.—*Paring and Burning.*

To the perſon who ſhall report to the Board the reſult of the moſt ſatisfactory experiments made by, or under the inſpection of, the reporter, to aſcertain the proper depth of paring, in order to burn, relative to the quality of the ſoil—*the Gold Medal.*

Accounts, verified by certificates, to be produced on or before the firſt Tueſday in December 1806.

No. XLII.—*Burning Clay, Loam, or Marle.*

To the perſon who ſhall make, and report to the Board, the moſt ſatisfactory experiments, to aſcertain the utility of burning clay, loam, or marle, for the purpoſe of manuring—*the Gold Medal.*

It is required that equal portions of land (not leſs than five acres) be cultivated, the one thus manured, and the other without manure, for the compariſon, during three years, each portion under ſimilar crops. The quality of the ſoil, the expence of burning and carting, and the products of the reſpective portions, to be reported to the Board, and verified by certificates, on or before the firſt Tueſday in March 1809.

No. XLIII.—*Leaſes.*

To the perſon who ſhall draw up, and preſent to the Board, covenants conſiſtent with the intereſt of landlords and tenants, that ſhall point out the beſt means of preventing the tenant from leaving his land in an exhauſted ſtate at the expiration of his leaſe—*Twenty Guineas.*

To be produced on or before the firſt Tueſday in May 1805.

No. XLIV.—*Hydraulic Machine.*

A foreign gentleman offers to give a premium of 50 guineas for the plan of a machine, adjudged to be the beſt by the Board of Agriculture, for a ſupply of water.

It is propoſed to raiſe water continually from a rivulet, and effect its elevation to a hill.

1. The rivulet is ſixteen feet wide and one foot deep, and continually flowing a rapid courſe.

2. The fall of the rivulet is from a height of twelve feet.

3. The aſcent to which the water muſt be raiſed is 280 feet.

4. The diſtance of the fall of the rivulet, from the ſpot where the water is intended to be raiſed, is 1500 feet.

5. The drawings exhibited to gain the premium muſt be as accurate as poſſible, with the dimenſions ſet forth, in order that the machinery may be conſtructed therefrom. Such a drawing of this machine, muſt further have annexed to it a ſtatement of its mechanic powers, expence of conſtruction, and ſuch other explanations neceſſary for the clear comprehenſion of the whole.

6. The drawing that gains the premium will be that which will prove that its model will, 1ſt, ſupply the moſt water; 2dly, be of the moſt ſimple conſtruction, and not ſubject to frequent repairs.

To be produced on or before the firſt Tueſday in February 1805.

N. B. *The firſt of the General Conditions applies to this premium.*

N. B. In all caſes where money is offered, the ſucceſsful candidate may have the value in plate, with a ſuitable inſcription.

GENERAL CONDITIONS.

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

2. The MSS &c. ſent in claim of premiums, to remain the property of the Board.

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

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

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

Holkham Sheep-Shearing.

At the concluſion of his Grace of Bedfford's Agricultural Fete, Thomas William Coke, eſq. M. P. for the county of Norfolk, renewed his uſual and very general invitation to the Breeders and Agriculturiſts preſent, to favour him with their company at his ſhearing and ſhow of ſheep, &c. Many accepted the invitation, and haſtened acroſs the country, a diſtance of near 120 miles, by every mode of conveyance which the inns or private friends afforded; others went round by London, for the convenience of the mails and ſtage coaches; and by Sunday evening Mr. Coke's hoſpitable and extenſive manſion at Holkham, and every inn and farm houſe in the neighbourhood, were filled with viſitors. Thoſe who have been in the habits of attending Mr. Coke's "Clipping," as it is here provincially termed, did not fail of noticing with pleaſure the rapid and great improvements which are ſtill making in Holkham Park, and on all the ſurrounding domain of its truly patriotic owner; but thoſe who had never before viſited this part of the kingdom could not ſuppreſs their admiration at the high ſtate of cultivation into which ſo very large a tract of land, naturally ſterile and barren, has been brought, and at the very fine and thriving plantations which are raiſing, on land which naturally produced not a tree of any kind, but was, till within a few years paſt, a vaſt plain of chalk, covered only by a few inches of ſand, ſo extremely light, that it ſhifted and blew about like new fallen ſnow, with every wind. The neatneſs and comfort which is here obſervable in the dwellings, even of the meaneſt cottagers, and the ſtately manſions, as they would be termed in moſt other countries, which the farmers occupy, were equally admired by ſtrangers, with the degree of intelligence and ſpirit of improvement which their hoſpitable occupiers poſſeſs.

On Monday morning the buſineſs of the meeting commenced, at Longlands, the reſidence of Mr. Wright, the bailiff on Mr. Coke's extenſive farm, all of which lies within Holkham Park, and is moſt taſtefully interſperſed as well as ſurrounded by plantations. The company from the hall, and the Breeders and Farmers of the neighbourhood, with their viſitors, being aſſembled, the ſhow of new Leiceſter Rams took place, and occupied all the forenoon. About 200 of the company having partaken of a ſumptuous dinner at Mr. Coke's table, they aſſembled again to be preſent at the ſale of ſeveral lots of Leiceſter ewes.

On Tueſday forenoon, the exhibition of Mr. Coke's South Down Rams, and of the different fat Leiceſter and South Down ſhearling Wethers, and of Leiceſter and South Down Theaves, ſent in by others as candidates for the prizes, were minutely examinded by the Breeders and Amateurs preſent; the Prize Sheep were firſt examined in their wool, and being ſhorn, were again exhibited. The operations of two Threſhing Mills, on a ſmaller ſcale than the one which Mr Coke has had in uſe on his extenſive farm, were inſpected by the Farmers and Mechanics preſent; one of them, made by Mr. Burrel, of Thetford, has its motion partly communicated by ſtraps inſtead of cog-wheels, and has a ſecond ſet of rollers to return the ſtraw to the beaters, for more effectually cleaning out the corn: the other machine is by Mr. Wigfull, and has the motion of the drum communicated by the friction of a wheel againſt a roller, inſtead of uſing wheels with teeth, or ſtraps. The Rev. Mr. Munnings, with a view, as it was preſumed by many, of diſcouraging ſimilar attempts, ſhewed a ſheep which had been produced by croſſing with ſeveral breeds: he alſo exhibited a compound agricultural implement, and diſtributed printed papers, which, with a ridiculous whimſicality, deſcribed it under the name of *Aratrum-raſtrum-et-aliud!* About three o'clock, at leaſt three hundred Noblemen, Gentlemen, and Agriculturiſts, ſat down to dinner with Mr. Coke, at the hall, and afterwards attended the letting of his Leiceſter Rams, but few of which were diſpoſed of; a circumſtance which may, perhaps, be accounted for, by Mr. Coke having relaxed in his exertions to diſſeminate the Leiceſter breed, ſince his tenants, Mr.

John Reeve, Mr. George Smith, and others, have ſo ſpiritedly embarked in the breeding of theſe ſheep: Mr. Reeve's annual ſhew and letting of Tups, was held at his farm at Weighton, about ten days ago; and Mr. Smith's firſt ſhow and letting of Leiceſter Tups was held on Saturday ſennight, on his farm, called Leiceſter-Square, near South Crick. On Tueſday evening, ſome good Devon cattle were ſold; and a Norfolk Ox, of ſurpriſing ſize, was ſhewn by a Gentleman in the neighbourhood, who had bred it: a very fine Devon Bull, and ſome very fine promiſing Calves of the ſame breed, were alſo exhibited by their owner.

On Wedneſday morning the company aſſembled, and inſpected the carcaſes of the fat Wethers, which had been ſhewn alive on the preceding day, and then attended the ſale of ſeveral lots of South Down Ewes. After which, about 250 perſons partook of an excellent dinner at the hall: when the cloth was withdrawn, the company drank "The King," "The Plough;" after which, Mr. Coke having left the room to fetch ſome papers, his health was drank with three times three: on his return, after thanking the company, he remarked, that previous to ſtating the ſucceſs of the various Candidates for the Prizes, he ſhould obſerve, that the original object of this Meeting was for improving the breed of Norfolk Sheep, a diſtrict of the country ſo well adapted to the breeding of ſheep, but which poſſeſſes a very bad natural breed; that he could call upon ſeveral Gentlemen preſent, who had tried the Leiceſter as a long-wool'd breed, and the South Down as a ſhort-wool'd breed, and ſhould be happy to hear their ſentiments on the comparative merits of theſe with the original Norfolk Sheep; that ſome prejudice had ariſen againſt the South Downs, from a ſpurious breed of thoſe Sheep having got abroad; that the genuine South Downs were an excellent breed, and ſo were the Leiceſter; and it was not his intention to give a deciſive opinion on their comparative merits. Mr. Coke then ſaid, that Mr. Ellman and Lord Somerville, the Judges who had been appointed to decide on the South Down Sheaves, (and more competent judges could not be found in the kingdom,) had declared the five pens of Theaves, conſidering wool and carcaſe, to be the very beſt they had ever ſeen together. Mr. Coke then called upon Mr. Charles Money, and handed him a Silver Cup, value ten guineas, ſtated to him, that he had produced "the beſt fat ſhearling Leiceſter Wether in his wool," for which this had been adjudged to him, and pleaſantly added, "it can't be in better hands, for, from your known conviviality, we have no doubt but you will fill it before you get home."—Mr. Coke then delivered to Mr. Thomas Purdy another large Cup, and ſtated, that the ſame had been adjudged to him, for having produced "the beſt fat ſhearling South Down Wether in his wool," but added, that the Judges remarked that the wool was not equal in goodneſs to the carcaſe.

Mr. Purdy was again called on, and preſented with another large Cup, for the beſt pen of three Leiceſter Theaves in their wool; and Mr. Smith was preſented with a ſmaller Cup, for the ſecond-beſt pen of the ſame Sheep. Mr. Coke again called upon Mr. Purdy, and handed to him a third Cup of the larger ſize, for "the beſt pen of three South Down Theaves in their wool."—Mr. Robert Overman was alſo preſented with a ſmaller Cup, for the ſecond-beſt pen of the ſame Sheep. It was then ſtated, that Mr. Overman and Mr. Reeve, the Judges appointed to decide which was the beſt Boar produced, bred by the perſon exhibiting it, and not exceeding the age of twelve months, had adjudged the Cup, value five guineas, to Mr. Seffield.—Mr. Coke then preſented a Cup, value ten guineas, to Sylvanus Bevan, eſq. as "the perſon who has, under the improved ſyſtem of irrigation, converted into water meadow, the greateſt quantity of land in the moſt complete manner." Some juſtly merited compliments then followed from Mr. Coke to Mr. John Reeve, for having been the firſt among his tenants to introduce this moſt capital improvement upon his farm at Wighton. Mr. Coke lamented that the Premiums which he offered laſt year of "a Cup, value ten

guineas, to the perſon who ſhall feed the greateſt number of horſes (not fewer than five) with Swediſh Turnips," and another Cup, value ten guineas, to the perſon who ſhall produce the moſt ſatisfactory experiments on not leſs than twenty acres of land, to aſcertain the comparative merit of the drill, and broadcaſt, or dibbling huſbandry," had produced no candidates: he then proceeded to ſtate, that the Premiums for the next year ſhould be the ſame as the preſent, with the addition of, 1ſt, A Premium of ten guineas to the Shepherd who ſhould, on the 1ſt of June next, "have reared the greateſt number of young Lambs in proportion to his flock;" 2d, "A Cup, value ten guineas, for the beſt Leiceſter Ram;" 3d, "A Cup, value ten guineas, for the beſt South-Down Ram;" and, 4th, "A Cup, value fifty guineas, for the beſt Ram of the Norfolk breed, provided it is deemed a good one."

Mr. Coke explained his motive in offering the three laſt premiums to be the exciting a competition between the breeders of theſe three ſorts of Sheep, and the latter premium was made ſo high, in order to obtain the ſight and knowledge of a good Norfolk Sheep, if ſuch a one can be produced. The toaſts then proceeded, with "A fine fleece and a fat carcaſe:" "Breeding, in all its branches." Sir Joſeph Banks having left the Meeting, his health was drank; and after ſeveral other toaſts, Mr. Coke roſe and drank the health of the Company, thanked them for their attendance, and concluded a neat ſpeech with a moſt hearty and general invitation to the next year's Clipping. The Company then repaired to the Longlands Farm, and the South Down Rams were lett, there being many competitors for ſeveral of the Sheep; and thus ended this uſeful, inſtructive, and entertaining Meeting, during which parties of the Company were made to view the highly-cultivated farms in the neighbourhood, in occupation of Mr. Robert Overman, Mr. John Acre, Mr. Money Hill, and others; in particular the water meadows, which have been recently made upon Mr. Reeves's, Mr. Beck's, and Mr. Fuller's farms, under the direction of Mr. Smith, of Bath.

In the abſence of Mr. Coke, ſome intereſting converſations paſſed among the Norfolk Farmers who were preſent, concerning the ſubſcription which was a few months ago made by them, of two guineas each perſon, for a piece of plate, to be made by Ward and Green, of Ludgate-ſtreet, value ſix hundred guineas, and which is to be preſented to Mr. Coke in a few days by the Committee appointed for that purpoſe. A Gentleman who had ſeen this handſome token of the veneration and reſpect in which Mr. Coke is held among his neighbours and tenants, deſcribed it as a ſuperbly emboſſed ſilver vaſe, near three feet in height; on its top is an elegant figure of Ceres; round the top of the vaſe are emboſſed figures of a South Down Ram and a Devon Ox, excellently done after models from the life, by Mr. Garrard; on the oppoſite ſides are figures of a Norfolk Team and Plough at work, and of Cooke's Drill, the implement generally in uſe for drilling the crops in Norfolk: between the handles, on the ſame level, are a wheatſheaf and a bunch of turnips. Beneath this, on one ſide, is Mr. Coke's arms, with the motto, *Prudens qui Patiens*; and on the oppoſite ſide the following inſcription:

Preſented to
THOMAS WILLIAM COKE, Eſq. of Holkham,
By the FARMERS of Norfolk,
As a token of their eſteem
For the
Liberality of his conduct as a Landlord,
And
Of their gratitude
For the benefit of his example
As a Practical Farmer,
And moſt valuable Member of Society.
June 1804.

At the corners of the ſtand are four female figures, emblematical of the

four ſeaſons, between which are four tablets with beautiful emboſſed figures, repreſenting the different agricultural operations of each ſeaſon.

The newly-watered meadows upon Mr. Beck's farm at Weſt Lexham, was viſited by Mr. Coke, Sir Joſeph Banks, and ſeveral perſons of diſtinction, before the graſs was cut, in their way from Woburn to Holkham; and on Friday morning his Grace of Bedford and the Earl of Darnley alighted from their carriages in their way back to town, and ſpent ſome time in examining the meadow, and the hay which was then making upon it. This meadow was begun upon ſince Chriſtmas laſt, and yet has borne a very good crop of graſs.

Among the company at Holkham we noticed his Grace the Duke of Bedford, Earl of Darnley, Lord Somerville, Sir Joſeph Banks (Preſident of the Royal Society), Sir John Fordyce (Surveyor General of the Crown Lands), Sir Thomas Carr, Sir Charles Davers, Thomas Anſon, eſq. George Gunning, eſq. A. Wilbraham, eſq. Loraine Smith, eſq. John Motteau, eſq. Money Hill, eſq. —— Crips, eſq. Mr. Nollikens (the Statuary), Mr. Solomon Williams (the Artiſt who painted the Trial of Algernon Sydney), Mr. Humphrey Davy (Chemical Profeſſor), Mr. Smith (Mineralogiſt), &c. This rural feſtival was never more numerouſly attended. The prize for the South Down ewes was well conteſted, and we believe there never were ſeen five better pens of ewes together. There was a great competition for hiring of South Down rams, all of which were let the laſt evening. At the above meeting, Mr. Shepherd of Chippenham, in Cambridgeſhire, exibited a new implement for ſowing of turnips or clover, which met with general approbation, with many other agricultural implements deſerving attention.

Nearly three hundred noblemen and gentlemen and agricultural amateurs, ſat down to dinner each day with Mr. Coke, and as many below ſtairs ſhared in the hoſpitality of Holkham hall. The company departed with much apparent ſatisfaction, ſtrongly impreſſed with Mr. Coke's extreme attention and affability to all preſent. After the examination of the South Down and Leiceſter ſheep, the prizes were adjudged as follows:

Prizes for one year old South Down Ewes.

The firſt to Mr. Purdy, a cup, value ten guineas.
The ſecond to Mr. Overman, a cup, value five guineas.

Prizes for one year old Leiceſter Ewes.

The firſt to Mr. Purdy, a cup, value ten guineas.
The ſecond to Mr. Smith, a cup, value five guineas.

Prizes for fat Wethers.

To Mr. Purdy, for the beſt South Down wether two years old, a cup, value ten guineas.

To Mr. Money for the beſt Leiceſter wether, 2 years old, a cup, value ten guineas.

The judges for the South Down ſheep and Leiceſter weathers, were Lord Sommerville and Mr. Ellman of Glynd.

Thoſe for the Leiceſter ewes, were Mr. Whitworth of Lincolnſhire, and Mr. Creaſy of Norfolk.

Particulars of Sheep killed at Holkham, June 26.		lb.	oz.
Mr. Coke's South Down ewe, 3 years old	per quarter	27	8
	looſe fat	17	0
	pelt	8	0
	head and pluck	8	0
Mr. Coke's South Down wether	per quarter	34	4
	looſe fat	20	0
	pelt	8	6
	head and pluck	8	8

Mr. Purdy's South Down wether, 2 years old	per quarter	29	8
	looſe fat	14	8
	pelt	8	0
	head and pluck	9	0
Mr. Roſe's Leiceſter wether, 2 years old	per quarter	34	4
	looſe fat	16	8
	pelt	9	0
	head and pluck	11	0
Mr. Money's Leiceſter wether, 2 years old	per quarter	34	12
	looſe fat	15	0
	pelt	10	0
	head and pluck	10	8
Mr. Blyth's South Down wether, 2 yrs. old	per quarter	29	4
	looſe fat	17	0
	pelt	9	8
	head and pluck	10	8
Mr. Purdy's Leiceſter wether, 2 years old	per quarter	32	0
	looſe fat	13	8
	pelt	9	8
	head and pluck	9	8
Mr. Coke's Leiceſter wether, 2 years old	per quarter	38	0
	looſe fat	14	0
	pelt	13	8
	head and pluck	10	8

Suſſex Agricultural Society.

The annual ſhew of cattle and ſheep for the prizes given by the Suſſex Agricultural Society, will be at Cowes, on Wedneſday the 1ſt day of Auguſt next, being the intermediate day between Brighton and Lewes races.

A general meeting of the ſubſcribers will be held at the White Hart Inn, at 11 o'clock in the forenoon preciſely.

At a general meeting, for diſtributing their ſeveral premiums to the induſtrious and deſerving poor, held at the White Hart Inn, Lewes, June 23, 1804.

The following were the ſucceſsful candidates.

For the 15l. to five labourers who have brought up and ſupported, to the age of two years, the greateſt number of children (within the laſt fifteen years, in habits of induſtry, with the leaſt proportionate relief from the pariſh, viz.

Five pounds to John Back of Rodmell, nine children, and having received 3l. 9s. relief from the pariſh for medicines.

Four pounds to Thomas Aris of Rodmell, ſeven children, and having received 13l. 8s. relief from the pariſh.

No claimants for the three other premiums in this claſs.

For the ten pounds to four wives or widows of labourers, who ſhall have done the moſt work in huſbandry between the 20th day of October, 1802, and the 2d day of October, 1803.

Four pounds to Suſannah Collins, widow, of Waldron, 199 days.

For the five pounds to two houſhold men-ſervants, employed in huſbandry, under the age of 25 years, who ſhall have received wages during the greateſt number of years (not leſs than five) in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters of their continued good behaviour.

Only one claimant, whoſe certificate was informal.

For the five pounds to two houſhold men-ſervants employed in huſbandry, above the age of 25 years, who ſhall have lived the greateſt number of years (not leſs than ſeven) in the ſame ſervice, and ſhall produce a ſatisfactory certificate of his good behaviour, viz.

Three pounds to William Pullen, houſhold ſervant, employed in huſbandry to Mr. William Denyer of Billinghurſt.

Two pounds to Edward Apps, houſhold ſervant, employed in huſbandry to Mr. Robert Burt of Ninfield.

For the ten pounds to three labourers, who have, with the aſſiſtance of their wives and children under 10 years of age, in working by taſk or otherwiſe, during the laſt harveſt, earned the moſt money (not leſs than ſix pounds) in proportion to the prizes at which they have taken their work, viz.

Five pounds to William Tapper, labourer to Mr. Drew of Petworth, having earned, with the aſſiſtance of his wife, 9l. 7s. 4½d.

Three pounds to Henry Matthews, labourer to Mr. John Lee of Storrington, Mr. Richard Everſhed of Pulborough, and Mr. Henry Hadfield of the ſame place, he having earned, with the aſſiſtance of his wife, 8l. 19s. 9d.

For the five pounds to two women-ſervants in every kind of ſervice under the age of 25 years, who ſhall have received wages during the greateſt number of years (not leſs than five) in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters or miſtreſſes of their continued good behaviour, viz.

Three pounds to Elizabeth Ticehurſt, ſervant to Mr. Joſeph Morris of Lewis, 9 ¾ years.

Two pounds to Phillis Banniſter, ſervant to the Reverend Mr. Lervin of Iſield, nine years and four months.

For the ten pounds to the four labourers in huſbandry, having been married, who ſhall have lived the greateſt number of years (not leſs than ſeven) in the ſame ſervice, and who ſhall bring ſatisfactory certificates from their employers of their continued good behaviour, viz.

Four pounds to Thomas Burtenſhaw, labourer to Mr. Bine of Newtainber, 45 years.

Three pounds to James White, labourer to Mr. Lindfield, of Hurſtpepoint, 39 years.

Two pounds to Thomas Holman, labourer to Mr. Chatfield of Ditchling, 37 years.

One pound to Thomas Simmons, labourer to Mr. Hamſher of Patcham, 33 years.

The Society have great reaſon to lament the continued inaccuracy of cirtificates, as on that ground many claimants have been excluded, whoſe praiſe-worthy conduct they have no doubt would have entitled them to premiums.

South Down Agricultural Society.

London Inn, Ivybridge, June 6, 1804.

RICHARD KING, Eſq. Preſident, in the Chair.

The minutes of the laſt general meeting, and alſo of the meeting of the Select Committee, having been read.

JOHN SPURREL PODE, Eſq. was elected Preſident for the year enſuing.

New Members.

Rev. Mr. Rigby, Rev. Mr Savage, Mr. Robert Fuge, Mr. Robert Fuge, jun. Mr. Jeffery White, Mr. James Mitchel, Mr. George Mitchel, Mr. James Sellick, Mr. James Torring, jun. Mr. William Bowden, Mr Soper, and Mr. Edwards.

The following premiums were adjudged.

Firſt.—This premium is withheld until the 1ſt day of Auguſt next, when Mr. Henry Rivers, Mr. Jaſper Parrot, and Mr. James Williams (three of the Society's Inſpectors, will again inſpect Mr. Farley's horſe, of Paigriton, if he is produced to them If the horſe's eyes ſhould then appear to be in a better ſtate (in their opinion) than they do at preſent, Mr. Farley will be intitled to the premium of three guineas for the beſt ſtallion for getting ſtock

fit for the road or pack; if otherwiſe, the ſaid premium will be divided between Mr. Bickford Hele of Deptford, and Mr. Sampſon Croker, of Ugborough, whoſe horſes may be exhibited again for the Society's premiums.

Second—There being no competition for this premium, half of it was adjudged to the Rev. Roope Ilbert, for producing a very fine colt of the draught kind, well worth the attention of breeders, 1l. 11s. 6d.

N. B. This colt may be exhibited again for future premiums.

Fifth.—To Richard King, Eſq. of Fowelſcombe, for the beſt bull under three years old — — — 3 3 0

Sixth.—To Mr. Sampſon Croker, of Ugborough, for the beſt breeding cow — — — 5 5 0

Seventh.—To the Rev. Simon Webber of Dodbrooke, for the beſt heifer between two and three years old, calculated for breeding 3 3 0

Eighth.—To Chriſtopher Savery, Eſq. of South Efford, for the beſt ram — — — — 5 5 0

Ninth.—To Mr. James Sellick of Harberton, for the ſecond beſt ditto — — — — 5 5 0

Tenth.—To Mr. James Sellick, for the beſt hog, or two-toothed ditto, bred in this diſtrict — — — 5 5 0

Eleventh.—To Mr. Jaſper Parrot of Berry Pomery, for the ſecond beſt ditto — — — 3 3 0

Twelfth.—To Mr. Jaſper Parrot of Berry Pomery, for the beſt lot of breeding ewes

Thirteenth.—To Chriſtopher Savery, Eſq. for the beſt lot of two-toothed, or hog ewes — — — 5 5 0

Fourteenth.—To Richard King, Eſq. for the beſt two year old fat whether killed on the ſpot — — 3 3 0

Fifteenth.—To Mr. Richard Hudder of Ugborough, for the ſecond beſt ditto, ditto — — — 2 2 0

Seventeenth.—To Mr. John Weddicombe of Ugborough, for the beſt ram's fleece, ſhorn on the ſpot — — 2 2 0

Eighteenth.—To Mr. James Sellick of Harberton, for the ſecond beſt ditto, ditto — — — 1 1 0

Nineteenth.—To Daniel Farley of Paignton, the beſt ſheepſhearer 2 2 0

Twentieth.—To Thomas Callard of Staverton, the ſecond beſt ditto — — — — 1 1 0

Twenty-firſt.—To George Grills, jun. of Modbury, the third beſt ditto — — — — 1 1 0

Twenty-ſecond.—To Roger Saunders of Aſeton Gifford, the fourth beſt ditto — — — — 0 10 6

Reſolved, That the Secretary ſhould write to all thoſe members whoſe ſubſcriptions are in the rear, and requeſt the payment of them.

That the thanks of the meeting be given to the Competitors for the day, and to the Preſident for his marked attention.

RICHARD HAWKINS, Secretary and Treaſurer.

Derbyshire Agricultural Society.

At the Shew of Cattle and Breeding Society, held at the Wheel Inn, in Derby, on Wedneſday the 11th of July, the prizes were reſpectively determined as follows.

For the beſt three theaves, Mr. Smith, Foremark park, 4l. 4s.
The ſecond beſt ditto, Mr. Smith, Repton, 3l. 3s.
The beſt ſhear hog ram, F. N. C. Mundy, Eſq. 3l. 3s.
The ſecond beſt ditto, Mr. T. Jowett, Draycot, 2l. 2s.
The beſt two ſhear ram, Mr. R. Jowett, Dracott, 3l. 3s.
The ſecond beſt ditto, R. C. Greaves, Eſq. 2l. 2s.
The beſt ſhear hog weather, Mr Smith, Foremark park, 3l. 3s.
The ſecond beſt ditto, Mr. Smith, Repton, 2l. 2s.

The beſt two years old heifer, Sach. Pole, Eſq. 4l. 4s.
The beſt three years old ox, Mr. Harvey, Hoon Hay, 3l. 3s.
The ſhew was thought to be an exceeding good one.

South Hants Agricultural Society.

At the Anniverſary Meeting held at Southwick, the 26th day of June laſt, Richard Goodlad, eſq. was elected Preſident, and Thomas Stares, eſq. Vice-Preſident, for the enſuing year. The following Premiums were alſo adjudged:

Two Guineas (half of the Premium offered, there being no competition) to Mr. Hood's Ploughman, for having, with four horſes, ploughed a quarter of an acre of land in a workman-like manner.—Five Shillings to the boy.

Five Guineas to Mr. Green, of Kingſton, for having produced the fineſt Cart Stallion.

Two Guineas to Mr. Sharp, of Havant, for the fineſt Cart Filley, bred in Hampſhire.

One Guinea and a Half to Mr. Eyles, for a fine Boar.

Three Guineas to Mr. Butler, of Havant, for the beſt two years old Bull.

One Guinea to Mr. Mitchell, of Weſt Hill, for a half Norman Bull, which was deemed to poſſeſs conſiderable merit.

One Guinea (half the premium, as before) to Mr. Butler, for a Leiceſter Ram.

One Guinea (half of the premium) to Mr. Eyles, for a South Down Ram.

One Guinea (half of the premium) to Mr. Hood, for a fine Sow.

Three Guineas to Mr. Butler, for the fineſt three years old Cow, bred in Hampſhire.

Two Guineas to Mr. Boſwell, of Buriton, for the fineſt two years old Heifer, bred in Hampſhire.

Two Guineas to W. Welch, of Eaſtmeon, ſervant in agriculture to Mr. Eylse, forty years.

Two Guineas to W. Gardiner, labourer in Agriculture to Mr. Richards, nineteen years.

Two Guineas to Richard Harfield, a boy employed in huſbandry by Mr. Hood, for five years.

One guinea to Thomas Woods, jun. a boy employed in huſbandry by Mr. Purvis, for the like term.

Three Guineas to W. Hall, Shepherd to Mr. Joſeph Merrett, of Fareham Farm, for having reared ſixty-four Lambs from fifty-three Ewes.

One Guinea to A. Richardſon, Shepherd to Mr. Hood, for having reared one hundred Lambs from ninety-four Ewes.

Two guineas to Ann Beechan, Dairy-Maid to Mr. John Kennett, of Hambledan, ſix years.

Several new and uſeful Implements in Huſbandry were produced by Mr. Fitzherbert, which were made by Mc Dougale, of Oxford Street, London.

Fareham, July 6, 1804. W. W. MAIDMAN, Secretary.

Wynyard Agricultural Meeting.

A very numerous and highly reſpectable meeting of the gentlemen farmers, aſſembled at Nynyard, on Thurſday the 28th ultimo, when the following premiums, ſome time ago offered by Sir H. V. Tempeſt, Bart. to his tenants, were adjudged and given as follows.

To Mr. Richard White, of Kelloe, for having the moſt effectually underdrained the greateſt number of roods in his farm, ſince 30 May, 1803. A Silver Cup, value 10 guineas.

To Mr. John Wetherall, of Old Durham, for having laid down to graſs 8 acres of land, in the moſt judicious manner. A Silver Cup, value five guineas.

To Mr. Joſeph Walker, of Longnewton, who produced the beſt cow and calf, bred by himſelf. A ſilver cup, value five guineas.

To Mr. Richard White, of Kelloe, who produced the beſt one year old breeding ſow-pig. A ſilver cup, value three guineas.

To Mr. John Wetherell of Old Durham, who produced the beſt one-ſhear wether. A ſilver cup, value 5 guineas.

To Mr. Joſeph Walker, Longnewton, who produced the beſt pen of five (one-ſhear) grinners. A ſilver cup, value five guineas.

The following premiums having been offered by Sir Henry to breeders in the county of Durham, were at the ſame time adjudged and given as follows.

To J. D. Neſham, Eſq. of Houghton-le-Spring, who produced the beſt pen of five (one-ſhear) ganders. A ſilver cup, value 25 guineas.

To Mr. James Clark, of Bradly Hall, who produced the beſt one-ſhear wether. A ſilver cup, value 25 guineas.

Robert Colling, Eſq. of Brampton, and } were the
Charles Neaſon, Eſq. of Chilton, } Judges.

The following premiums were offered by Lord Hervey to his tenants and cottagers, but not claimed at this meeting, viz.

For the beſt cultivated farm. A cup, value 10 guineas.

For the beſt crop of turnips. A cup, value 5 guineas

For the beſt crop of drilled beans. A cup, value 3 guineas.

For the greateſt number of roods of quick fence, moſt judiciouſly planted. A cup, value 5 guineas.

For the moſt approved machines or implements of huſbandry, invented or purchaſed by a tenant. A cup, value 5 guineas.

To the beſt ploughman. Five guineas.

To the ſecond beſt. Three guineas.

To the day labourer, (not having a cow) employed by Sir Henry, or any of his tenant, ſince May day, 1803, who ſhall have brought up, in the habits of induſtry and religion, the greateſt number of children born in wedlock, without parochial aſſiſtance. Five guineas.

To the beſt culture of quickſet hedges. Five guineas.

To the ſecond beſt. Three guineas.

The company, conſiſting of ſeveral of the moſt reſpectable amateurs and breeders of this and the neighbouring counties, aſſembled about 12 o'clock, and proceeded to view, with the minuteſt attention, the ſtock ſhewn for the premiums. During the inſpection many judicious remarks were made, and much intereſting diſcuſſion took place.

The company afterwards inſpected a drill machine (by Perkins) belonging to Sir Henry, for ſowing the ſeed and manuring at one operation. And were ſhewn a remarkable fat Kyloe Ox, fed by Sir Henry. A pen of grinners, and five very good ſhearling rams (of the Leiceſterſhire breed) which were fed by himſelf, &c.

Sir Henry having declared his intention of holding ſimilar premiums, and holding the meeting annually, as it was propoſed by a gentleman preſent to open a ſweepſtakes of five guineas each, for breeders within the county of Durham, to ſhew the beſt five (one-ſhear grinners) at Wynyard Meeting, in 1805, which was immediately entered into by 10 ſubſcribers.

The company, conſiſting of upwards of 500, partook of a ſumptuous dinner at Wynyard, at four o'clock, and the day concluded with the greateſt harmony and ſatisfaction to the breeders and agriculturist.

Ashford Wool Fair.

On Wedneſday the 8th of Auguſt, the following premiums will be diſtributed according to the opinions of the judges to be then appointed.

To the perſon who ſhall produce the beſt long woolled ram tag. A cup, value ten guineas.

To the perſon who ſhall produce the ſecond beſt ditto. Two guineas.

To the perſon who ſhall produce as above, the beſt long woolled two-yearling ram. Five guineas.

For the ſecond beſt ditto. Two guineas.

To the perſon who ſhall produce the beſt pen of five long woolled ewe tags. A cup, value five guineas.

For the ſecond beſt ditto. Two guineas.

To the perſon who ſhall produce the beſt of five ſhort woolled ewe tags. A cup, value five guineas.

To the perſon who ſhall produce the beſt three yearly or aged bull. Five guineas.

For the ſecond beſt ditto. Three guineas.

Five guineas to the owner of the beſt pen (not leſs than three) of two years old wethers, fed upon graſs only.

The cattle and ſheep to be entitled to the above premiums, muſt have been bred in the county of Kent (the ſheep to have eaten no corn or oil cake) and certificates will be required to be delivered to the judges of the manner in which they have been ſupported for ſix months previous to the day of ſhewing.

Treaſurer, B. R. RIGDEN.

Extract of a Letter from a Northern District, dated July 14.

In this diſtrict we have had ſeveral fine rains within the laſt two months, but the weather has been, generally, too cold and windy to counteract the effects of the late wet and ſevere ſpring; and, upon the whole, our crops of corn have but an indifferent appearance, eſpecially upon the wet or ſtrong lands. In almoſt all ſituations, the wheats, except on very dry rich ſoils, are very thin; the plantss, however, have lately improved in colour, and now ſeem in a pretty vigorous state; and if the weather, from this time till the end of harveſt, prove favourable, the huſbandman may reap a crop conſiderably beyond his preſent expectations.

On old meadows, the hay crops are great, but clover and rye-graſs crops are generally very light.

Sheep having been much reduced in condition by the late unfavourable winter and ſpring, wool has fallen much ſhort of the uſual quantity: the demand for the long has been uncommonly great at advanced prices.

Turnips, upon light lands and the beſt loams, have a favourable appearance; but upon thoſe ſoils which are a little ſtronger, they did not vegetate regularly, the plants ſeemed unhealthy, and were attacked by very ſmall black jumping beetles or clocks, which have deſtroyed moſt of them. It is an advantage of our drill ſyſtem, however, that, in ſuch caſes, ſeed can be ſown in thoſe parts of the line where the plants are deſtroyed, and covered in without injuring thoſe which have eſcaped their enemies, as it is unneceſſary to uſe the plough or the harrow. This method has been purſued upon ſeveral farms, and as we have had ſome fine rains in the beginning of this month, it will probably be ſucceſsful.

The Potatoe crops, in general are not luxuriant, and contain a very great number of curled plants. I wiſh ſome of your correſpondents would inform us of the cauſe and best mode of preventing this baneful malady.

In moſt ſituations the paſtures have been good, notwithſtanding which, lean cattle and ſheep have been ſold at 20 to 25 per cent. below the prices obtained laſt year.

Cattle forward in condition, have been readily ſold at good prices, thoſe of beef having continued high (8s. 6d. to 9s. per ſtone) till lately.

During the laſt three or four weeks, the prices of grain have been as under.

Wheats, 6s. 8d. to 7s. 6d. per Wincheſter buſhel.
Oats, 2s. 8d. to 3d. per ditto.
Potatoe ditto, 3s. to 3s. 4d. per ditto.
Barley, 3s. to 3s. 4d. per ditto.
Rye, 3s. 4d. to 4d. per ditto.
Grey Peaſe, 4s. 6d. to 5s. per ditto.

The quantities of grain in the poſſeſſion of farmers are very ſmall.
Beef is now ſold at 7s. 6d. to 8s. per ſtone of 14 lbs. ſinking the offal.
Mutton at 7s. to 8s. 9d. per ditto, ditto; and
Long wool, at twelve pence halfpenny, to 13d. per lb.
Short ditto, laid, 13d. to 13½d. per lb.
Short ditto, white, 14d. to 11½d. per lb.

Graſs ſeeds have this year vegetated exceedingly well, though large quantities were ſown among oats, owing to the extreme low price of barley †.

The Property Tax, *as it affects farmers*, is conſidered, in this part of the country, oppreſſive and impolitic. Their diſcontent is becoming louder, and will probably promote petitions to the legiſlature, praying that they may be put upon a footing with their fellow ſubjects.

Since writing the above, I have viewed my turnips, about 60 acres of which I ſhould have preſumed, within the laſt few days, to have ſhewn againſt any equal number of acres, on ſimilar ſoil, upon any farm in the kingdom. Mark, however, how the the pride of man is humbled, and how ſuddenly the moſt propitious proſpect of the huſbandman are changed! Many, even of the moſt vigorous looking plants, are now (except their fibrous parts) entirely deſtroyed by the ſame kind of black caterpillars which about twenty years ago ſpread their devaſtations far and wide through our turnip fields. They ſeem to have a moſt rapacious appetite, and I fear their havoc will become general.—I have juſt opened my Bible at the book of Job.

Extract of a Letter from Narberth, dated July 1.

On Friday the firſt of June, a ſhearing match took place at Narboth, in Pembrokeſhire, when the following Premiums, given by the Narborth Farmer's Club, were thus adjudged.

The firſt, 1l. 1s. to Wm. Price, labourer to Mr. James Thomas, Kilrath.

Second, 15s. to Phil. Cunnick, labourer to Meſſrs. Evans and Eaton, Bletheriton.

Third, 10s. 6d. to Morris Williams, labourer to ditto, ditto.

Fourth, 7s. 6d. to Levi James, recommended by James Lewis, Eſq. Grondry.

Fifth, 5s. to Evan Nichol, labourer to John Harding, Eſq. Clynderwon.

Ten candidates ſtarted; each clipped four ſheep. Cloſe and even clipping, without cutting the ſkin, and the time ſpent in ſhearing, was the criterion by which the judges were guided.

Ploughing Match.

Upon the 22d ult. the annual ploughing match of the Stranraer Farmer Society took place at Mr. Lennox's in Mark of Inch, that being a central ſituation for the diſtrict to which the Society belongs. The field was a plain fallow, requiring the laſt furrow before being drilled for turnips. As the ſtate of the weather had long retarded the operations of huſbandry, and many valuable individuals had been lately laying aſide their private occupations to join the military preparations of the country, a large competition was not to be expected. However, thirteen ploughs ſtarted and finiſhed their reſpective allotments, each containing nearly one third of an acre, betwixt three hours and a half and four hours fifteen minutes. Upon the whole the work was executed much to the ſatisfaction of the ſpectators, as, and after a moſt minute and judicious inveſtigation, the prizes were adjudged as follows:—The firſt to John M'Dowall, ſervant to Mr. Lennox, Mark; the ſecond to Alex. Paterſon, ſervant to Mr. Maitland, of Freugh; the third to John Learmont, ſervant to Mr. Simpſon, Culhorn; the fourth to Francis Pringle, ſervant to Mr. Cathcart of Genoch; the fifth to Andrew M'Adam, ſervant

† From all the information I can collect, the quantity of this grain, cultivated this ſeaſon, is not above one half of the uſual number of acres.

to Mr. Middleton. Barfolus; the fixth to Robert M'Comb, fervant to the Earl of Stair; and the feventh, to John Bell, fervant so Mr. Shank, Curgie —A fmall compliment was alfo made to John M'Dowall, who obtained the higheft prize, on account of his having plowed the pattern ridge, and laid off the diftances of the different allotments, in a very accurate and maflerly ftile.—The Society alfo allowed half a crown to each of the unfuccefsful competitors, being refolved to encourage the defective, as well as reward thofe who excel. When the bufinefs was over, the Chairman of the Society, and fuch other members as found it convenient to attend, dined at the King's Arms Inn, Stranraer, where they fpent the evening in that cordial conviviality which becomes fuch occafions, and heightened on the prefent, by the gratifying reflection, that whilft every worthy and loyal fubject is more or lefs occupied in meafures of defence for our national independence, without rifk, there can ftill a little time be fpared by the public fpirited, to promote the internal improvements of the country, and thus continue to render it the better worth defending.

Caution to Farmers.

Confiderable depredations are at prefent going on among the growing crops, by means of a fmall fnail either brown or white. The crops of flax, oats, or barley, feem to vanifh gradually, from a caufe that does not appear in day light. The earth feels as if it were heaved, or excavated, and a number of fmall holes may be obferved, by which the little plunderers have eafy acceſs to their fubterraneous retreats. They iffue out from thence about ten o'clock in the evenings, and continue to come out till towards midnight, ravaging the crops till morning appears. In this manner they efcape notice, and are fafe from crows, poultry, &c. which by daylight might probably pick them up. Potatoe ftems are eaten acrofs, and fall off, clofe by the ground; bean ftalks meet a fimilar fate; flax, oats, wheat, and barley, when ferioufly attacked, go entirely away. The little creatures, if not obferved, may propagate in the foil, and deftroy fucceffive crops in it. This has frequently occurred in gardens; it has alfo happened in the fields, where potatoes, wheat, and barley, all in fucceffion, have been totally deftroyed on the fame field. Turnips are alfo fometimes eaten up by the fmall nail, when the fly is blamed for the mifchief; and the damage committed in this way has, in particular feafons, been very great.

The remedy is eafy, and may be effectually applied:—Let the ground where the depredations are going on be rolled, by night, for three fucceffive times, with a heavy roller. The firft operation fmooths the furface, and deftroys fome fnails; the fecond renders the earth very firm, and a confiderable execution takes place; the third rolling entirely fhuts up the retreats of the fnails, and for the moft part eradicates them altogether. After this, new crops may be fafely fown; and grafs feed or turnip feed, may be fcattered over the bare furface, before the laft rolling. Mr. Henry Vagg, of Somerfetfhire, fecured his turnip fields by this fimple operation, when his neighbours loft all. Mr. Stewart, of Hillhead, effectually cured a beautiful field, laft feafon, that would otherwife have been wholly deftroyed, for that, and perhaps alfo for fucceeding crops.

There is a dun worm, from one inch to two inches long, of the thickneſs of a quill, which appears to give fome affiftance to the fnail, in her depredations at prefent. It is fo tough that rolling has no chance to deftroy it, unleſs to a very imperfect extent. Probably foot, equally fown in a calm evening, by the hand, may have as good effects with this creature as it has with the wire worm; this application may anfwer in fmall fpots; or gardens, where rolling is inconvenient; it may alfo be proper to try quicklime, in the fame manner, if foot cannot be obtained, fowing it when there is fome dew, or gentle moifture, that it may operate immediately on the bodies of the inſects. The mole probably devours a variety of inſects, which retreat below the furface of the ground, ducks grub them up in gardens, when they appear

in day light; crows and poultry eat up the worms whenever they can find them—yet, in particular seaſons, the damage which they commit is very great.

Recipe for Weaning and Fattening Calves, by his Grace the Duke of Northumberland.

To feed and fatten calves, at about one-third the expence which it coſts, to ſatisfy them with new milk only.—Take one gallon of ſkimmed milk, four ounces of common treacle, one ounce of linſeed oil-cake, finely pulverized. Stirring the milk and treacle in mixture, with a ſpoon, drop in gradually the pulverized oil-cake: continue the ſtirring, till the whole mixture appears in one fluid. Add this preparation to thirty-one gallons of other ſkimmed milk. Make the whole nearly as warm as new milk from the cow. The coſt of the treacle and oil cake does not exceed ſixpence for the thirty-two gallons.

An experiment has lately been made at Lyons to try the effects of vaccination in preſerving fine woolled-ſheep from the ravages of the ſcab, which prevailed in the neighbourhood, and had already extended its pernicious influence to a flock of common ſheep, belonging to *M. Flandres D'Eſpinay*. Another flock of the Merinos breed, belonging to the ſame gentleman, was ſubmitted to vaccination, which produced its uſual effects and preſerved the flock in the midſt of the contagion. Forty of the ſheep which had undergone the operation were placed among the infected flock, but they withſtood the attacks of the diſeaſe, while not one of thoſe which had not been vaccinated eſcaped.

M. De La Huge diſcovered, during his travels, a ſpecies of wheat, a ſingle grain of which produces a trunk with from twelve to eighteen ſhoots. Each ſhoot has a bunch compoſed of ten or twelve grains. This diſcovery has been announced to the Miniſter of the Interior in France, and from it much advantage is expected.

Prices of Raw Hides, Hay and Straw, &c. for July, 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	3 8 to 4 0	3 8 to 4 0	3 8 to 4 0
Middling — —	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6
Ordinary — —	3 0 to 3 2	3 0 to 3 2	3 6 to 3 2	3 0 to 3 2
Market Calf — —	10 6	10 6	10 6	10 6
Eng.-Horſe — —	14s to 17s	14s to 17s	14s to 17s	14s to 17s
Sheep Skins — —	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Lamb Skins — —	2 6 to 3 6	2 6 to 3 6	2 4 to 3 6	2 6 to 3 6
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*
St. James's—Hay —	4 15 0	4 14 6	4 0 0	4 12 6
Straw —	1 19 6	1 18 0	1 15 3	1 15 3
Whitech.—Hay —	4 16 0	4 13 6	4 12 6	4 17 0
Clover —	5 10 0	5 10 0	5 13 0	5 15 0
Straw —	1 13 0	1 12 0	1 13 0	1 15 0
Newbury.				
Wheat — — —	38s to 59s od	35s to 63s	40s to 67s od	40s to 67s od
Barley — — —	24s 6d to 22s	25s to 30s od	27s to 32 od	28s 6d to 32s
Oats — — —	25s od to 28s	24s 6d to 27s	28s to 30s	28s to 31s
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 — — —	48s to 52s	49s to 53s	48s to 52s	52s to 58s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	26s 6d to 28s	27s to 31s	28s to 32s	28s to 32s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — — —	26s to 29s	27s to 30s	27s to 30s	28s to 31s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s

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

Price of Hops.	First Week	2d Week	3d Week	4th Week
Bags.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Kent — —	76 to 94	75 to 96	70 to 90	74 to 88
Suſſex — —	74 to 90	75 to 88	70 to 86	74 to 82
Eſſex — —	74 to 90	75 to 88	70 to 86	76 to 88
Pockets.				
Kent — —	86 to 116	94 to 110	80 to 100	80 to 100
Suſſex — —	84 to 112	80 to 100	80 to 90	76 to 92
Farnham — —	140 to 180	120 to 160	120 to 160	120 to 140
Seeds.				
Red Clover per cwt. —	30 to 80	60 to 75	40 to 75	30 to 72
White Clover, ditto —	50 to 110	40 to 95	40 to 95	40 to 90
Treſoil, ditto —	20 to 42	10 to 45	10 to 44	20 to 40
Carraway ditto —	— to 75	— to 75	60 to 65	58 to 63
Coriander ditto —	16 to 20	16 to 20	13 to 15	13 to 15
Turnip, (per buſhel) —	22 to 24	14 to 21	16 to 26	12 to 22
White Muſtard Seed —	8 to 10	8 to 10	8 to 10	8 to 10
Brown ditto — —	12 to 16	12 to 16	11 to 16	11 to 16
Canary Seed	7 to 8	7 to 8	7 to 8	7 to 8
Rape Seed, (per laſt) —	37 to 39	37 to 39	37 to 40	40 to 44
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 6 to 5 6	4 6 to 5 6	4 6 to 5 6	4 6 to 5 8
Mutton — —	4 0 to 5 0	4 4 to 5 0	4 4 to 5 0	4 8 to 5 4
Veal — —	4 8 to 5 8	4 8 to 6 0	4 8 to 6 0	4 8 to 6 4
Pork — —	3 0 to 4 0	3 0 to 4 0	3 4 to 4 4	4 0 to 4 8
Lamb — —	5 8 to 6 8	4 0 to 5 4	4 8 to 6 0	5 0 to 6 0
Head of Cattle—Beaſts about	1,700	1,300	1,700	1,800
——— Sheep	1 ,000	14,000	18,500	18,000
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	21 to 22	21 to 22	21 to 22	21 to 22
Ditto, 60lb. to 65lb each	23 to 24	23 to 24	23 to 24	23 to 24
Merchants Backs —	21 to 22	21 to 22	21 to 21½	21 to 21½
Dreſſing Hides —	21 to 22½	21 to 22½	21½ o 22½	21½ to 22½
Fine Coach Hides —	22 to 23½	22½ to 23½	23 to 24	23 to 24
Crop Hides for cutting	22 to 23	22 to 23	22 to 23	22 to 23
Flat Ordinary —	21 to 22	21½ to 22	21½ to 22	21½ to 22
Calf Skins, 30 to 40lb. *p.* doz.	32 to 36	32 to 38	32 to 38	32 to 38
Ditto, 50lb. to 70lb. do.	30 to 35	33 to 36	32 to 36	32 to 36
Ditto, 70lb. to 80lb. do.	29 to 31	29 to 32	29 to 32	29 to 32
Sm. Seals (Greenland)	51 to 54	48 to 51	48 to 51	48 to 51
Large do.	51 to 71 10s	51 to 71 10s	51 to81 00s.	51 to 81 00s
Tanned Horſe Hides	25s to 3 s	25s to 36s	25s to 35s	25s to 35s.
Goat Skins *per* doz.	30s to 66s	—s to —s	30s to 65s	30s to 65s
Price of Tallow.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
St. James's Market —	4 2½	4 2	4 2½	4 3
Clare Market — —	4 2	4 2½	4 2½	4 3
Whitechapel Market —	4 2	4 1½	4 0	4 1
Per ſtone of 8lb. Average	4 2	4 2	4 2	4 2½
Town Tallow — —	71 6	71 0	71 0	71 0
Ruſſia ditto (Candles) —	71 0	71 0	70 6	71 0
Ruſſia ditto (Soap) —	69 0	70 0	68 6	68 0
Melting Stuff — —	58 0	58 0	58 0	57 0
Ditto rough — —	38 0	38 0	38 0	38 0
Graves — — —	4 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 — —	88 0	88 0	88 0	88 0
Curd ditto — —	92 0	92 0	92 0	92 0
Candles, per dozen, —	11 0	11 6	11 0	11
Moulds — — —	12 0	12 6	12 0	12

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 JULY 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	57	11	29	3	29	0	28	2	38	6	41	1		
Surrey	63	10	30	0	28	8	28	10	40	0	42	0		
Hertford	50	4	35	6	25	9	21	4	31	3	32	0		
Bedford	45	8			23	6	23	3	34	6	36	9		
Huntingdon	47	11			22	3	21	0	29	1				
Northampton	51	0	32	0	23	4	22	8	34	6	32	0		
Rutland	52	0			25	6	22	6	32	0			57	3
Leiceſter	51	0			25	5	21	1	34	10			36	2
Nottingham	57	8	34	0	26	0	26	2	40	6				
Derby	59	4			24	6	23	2	39	0	36	0	31	0
Stafford	54	2			31	2	25	7	41	8			34	10
Salop	49	8	37	6	32	6	27	4					66	3
Hereford	45	1	30	4	33	10	29	10	43	10	43	4	59	3
Worceſter	48	8			30	5	30	9	39	5				
Warwick	55	4			32	3	27	5	42	5			44	6
Wilts	54	0			31	4	28	4	42	8				
Berks	62	10			30	1	30	4	42	3	41	8		
Oxford	52	8			27	6	27	8	38	0	44	0		
Bucks	51	10			26	0	25	2	35	4	39	3		
Brecon	52	3	33	7	29	2	24	0					38	9
Montgomery	49	10					21	8					49	3
Radnor	45	10			28	7	24	9					67	10

Maritime Counties.

Eſſex	58	2	28	6	27	9	29	6	32	9	38	6		
Kent	58	1			28	8	28	0	32	0	39	6		
Suſſex	56	0			28	0	29	3						
Suffolk	49	3	27	0	25	0	26	2	28	8	36	0		
Cambridge	45	3			24	0	19	8	29	8				
Norfolk	47	6			24	3	22	8	29	0	32	6		
Lincoln	47	3	28	10	24	2	21	2	31	7				
York	53	11	37	8	25	11	22	9	33	6	58	8	40	2
Durham	58	3					24	6						
Northumberland	55	2	38	0	25	9	23	11	31	0	34	0	18	0
Cumberland	58	2	41	1	26	10	24	4						
Weſtmorland	61	11	39	6	27	6	24	9					19	7
Lancaſter	61	9			29	8	26	4	39	6			20	2
Cheſter	52	6					28	9	41	0			20	5
Flint	49	6			32	8								
Denbigh	55	6			32	0	22	5					40	8
Angleſea							18	0						
Carnarvon	58	0	42	0	26	4	18	0					38	2
Merioneth	53	9	44	0	32	0	24	0					35	9
Cardigan	57	0			24	8	17	4						
Pembroke	49	10			31	4								
Carmarthen	64	6			34	0								
Glamorgan	57	10			37	0	24	0						
Glouceſter	48	6			27	3	24	8	35	11				
Somerſet	54	6			32	8	29	4	42	0				
Monmouth	52	9												
Devon	58	6			27	7	26	3						
Cornwall	57	3			35	2	22	2						
Dorſet	52	11					30	9						
Hants	53	0			30	5	25	8	28	1				

LONDON PRICES OF GRAIN for *July*, 1804.

MARK-LANE, *Monday, July 2.*

WE have had but an indifferent ſupply of Grain, with the exception of Oats, at market this morning, and the ſales of moſt articles briſk, and at better prices than laſt Monday. Fine ſamples of Wheat were in requeſt, and from 1s. to 2s. per quarter higher. Barley, from the ſhort ſupply, was likewiſe dearer; and Malt is up 3s. per quarter ſince this day ſe'nnight. Grey Peaſe are alſo higher. The two ſorts of Beans ſell freely at laſt ſtatement. We have a good ſupply of Oats, but which do not mend in price. In other articles, but little variation.

Price of Grain, on board Ship, as under.

Wheat	30s to 56s	Malt	58s to 63s od	Grey Peas	34s to 38s od
Fine	57s to 59s od	Oats	19s to 25s	Beans, new	33s to 38s
Rye	24s to 26s	Polands ditto	26s to 27s od	Old ditto	—s 44s
Barley	22s to 27s od	White Peas	34s to 37s od	Ticks	27s to 35s

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Monday, July 9.

We have had a conſiderable demand for Wheat this morning, and the ſupply being ſhort, the ſtands were cleared early, at an advance of 3s. per quarter. We have likewiſe a ſhort ſupply of Barley, and which, with Malt, is dearer. Peaſe and Beans, of the various kinds, are on the riſe; but there are ſcarce any Grey Peaſe at market. Oats are a good ſupply, and ſell better than laſt Monday. Flour is dearer.

Wheat	34s to 60s	Malt	60s to 65s od	Grey Peas	—s to 40s od
Fine	60s to 63s od	Oats	21s to 26s	Beans, new	36s to 40s od
Rye	26s to 28s od	Polands ditto	27s to 28s 6d	Old ditto	44s od
Barley	25s to 29s od	White Peas	34s to 40s od	Ticks,	30s to 37s od

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Monday, July 16.

Our markets of Wedneſday and Friday, at no time bearing any compariſon with the more important one of Monday, we ſeldom note any variation in the prices of grain on thoſe days; the ſales, however, of Wheat, were certainly briſker on Friday than laſt Monday; and this day, a moderate ſupply and many buyers, cauſed a further advance at firſt of the Market, but prices rather abated at the cloſe. Barley and Malt hold dearer. In the articles of Peaſe, Beans, and Oats, we have rather better prices, but the ſales were not ſo free as laſt week.

Wheat	36s to 63s	Malt	62s to 68s od	Grey Peas	40s to 42s od
Fine	64s to 67s od	Oats	20s to 25s	Beans, new	36s to 40s od
Rye	25s to 28s od	Polands ditto	26s to 28s od	Old ditto	43s od
Barley	25s to 31s od	White Peas	37s to 40s od	Ticks	33s to 38s od

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Monday, July 23.

To the obvious tendency of the Corn Bill now before Parliament, is aſcribed the preſent advance in the price of Wheat. Since our laſt, that article has riſen two and three ſhillings per quarter; but on account of the large ſupply up for this morning's market, the ſales were not ſo briſk as on Friday. Rye, with Barley and Malt, and White Peaſe, are all dearer. Grey Peaſe, with the different ſorts of Beans, vary little from laſt Monday's quotation. Good Oats command good prices; but the ordinary, of which we have plenty, are dull, and ſell very indifferently. Rape Seed is advanced, and Flour dearer.

Wheat	40s to 64s	Malt	64s to 70s od	Grey Peas	39s to 42s od
Fine	60s to 69s od	Oats	21s to 25s	Beans, new	35s to 40s od
Rye	28s to 30s	Polands	26s to 27s 6d	Old ditto	43s od
Barley	26s to 30s od	White Peas	40s to 45s od	Ticks	30s to 38s od

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

Names of Coals.	Mon. 2d s. d.	Wed 4th s. d.	Frid. 6th s. d.	Mon. 9th s. d.	Wed 11th s. d.	Frid. 13th s. d.	Mon. 16th s. d.	Wed 18th s. d.	Frid. 20th s. d.	Mon. 23d. s. d.	Wed 25th s. d.	Frid. 27th s. d.
Adair's Main												
Baker's Main												
Bedford Main												
Benton					46		47 9			47 9	46 9	47 6
Biddick Main				48 6		49 6						
Bigg's Main		47								50 6		51
Bladon Main												
Blyth	41 5											
Boundry												
Bourn Moor	42 6									45 6		
Brandling												45 6
Bowes Main												
Byker												
Bedford												
Chous												
Cowpen					43 6							
Eden Main	39											
Eighton Main					44					45 6		
Flatworth												
Greenwich Moor												
Harraton												
Hartley		42 6		43 6		44						46
Heaton Main										51		
Hebburn Main		47		43 6	49 6	50				51		
Holywell	41 9					44				43 6		
Kenton Main		45 6	47 6							49 6		45 6
Montague Main		40										
Murton												
Marton Moor												
Newbottle												
New Tansfield												
Old Ducks												
Primrose												
Pitt's Tansfield M	44 6				45 9	40				44 6		
Percy		47		48 6								
Rectory										50 6		
Ruffel's Main										44		
Simpsons Pontop				44 6		45						
Sheriff Hill											42	
South Moor		36 6										
Stanley Main												
St. David												
Team												
Temple						48 6				48 6	48 6	49
Percey												
Tyne Main												
Eighton												
Walbottle Moor	39 6											
Walker		45 6			48	48 9				50 6	50 6	
Wall's End	47 9			48 9	50	51	51 6			51 6	52	51 6
Willington	46	45 6		47 6	48 6		49 6			50 6		
Windsors Pontop												
Wyam Moor										43 6		
Wentworh												
Whitefield												
Wooler Main												
Warwick Main												
Warwick												

TO OUR READERS AND CORRESPONDENTS.

WE shall be glad to receive the proposed observations on the Royal Farms, as soon as it suits the convenience of our Northern Correspondent.

The Letter from P. R. sent with the peculiar condition of being inserted in the present number, having been received after the date required, (the 18th) will be returned on application by the author, or on the presentation of an order from him. We beg it may be understood by P. R. that such a requisition of immediate insertion is by no means agreeable to us, because inconvenient for the purposes of the work, unless the subject of the communication be of a temporary nature, and the design of it would be defeated by delay.

We have the pleasure of announcing an abstract of the projected Corn Bill, with the assistance of a professional correspondent, who has made the law of this subject the immediate object of his attention: in the mean time, we assure our readers with pleasure, that it is the intention of Government that the Bill should pass through all its stages before the present Sessions of Parliament is terminated.

We think it right to return our thanks to Veterinarius, for the changes in the arrangement of his subject, in consequence of our recommendation, and we hope this public acknowledgment will supercede the necessity of a private communication.

The numerous communications we have been favoured with on the subject of tithes are under consideration, but as an apology for the decision we may make, we must refer our kind contributors to the first paragraph of the notice to correspondents in our last number.