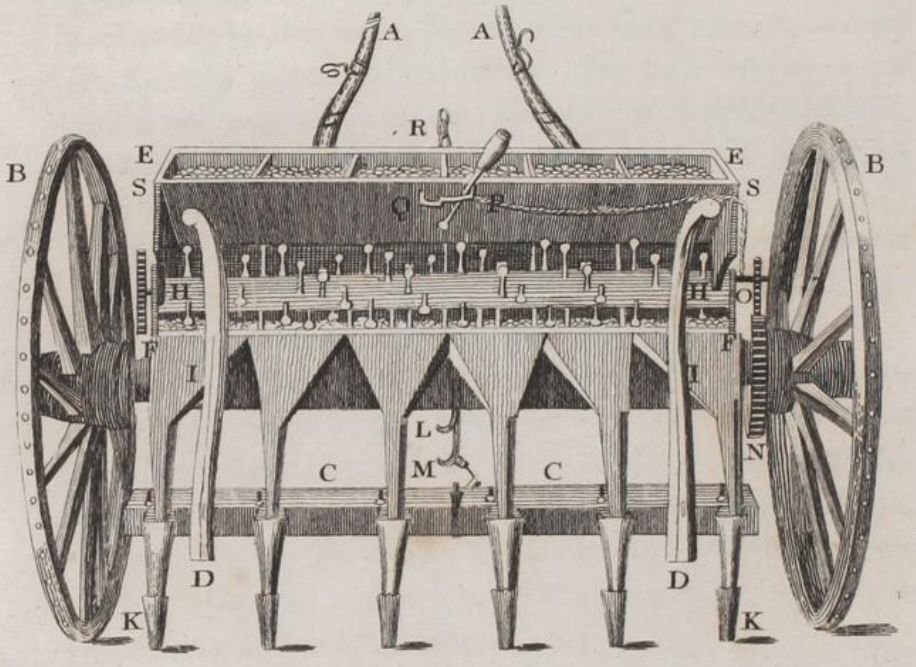
COOKE'S PATENT DRILL MACHINE.

Improved & simplified & capable of being converted into a

HORSE HOE.



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DESCRIPTION OF MR. COOKE'S PATENT DRILL MACHINE FOR SOWING SEED OF EVERY KIND, AND AT A VARIETY OF DISTANCES, ACCORDING TO THE JUDGMENT OF THE HUSBANDMAN.

WITH A PLATE ANNEXED.

IT will appear extraordinary to our readers that either from want of useful curiosity in the public, or from contracted views of personal interest in the proprietor, the most ingenious invention for the improvement of husbandry, has never been sufficiently made known through the ordinary channels of periodical information. Considering every article of beneficial intelligence, is a sort of public right, to which our readers are entitled in common with the rest of our countrymen; we shall endeavour as clearly as possible, to explain the structure of Mr. Cooke's drill, but the peculiarities attending its employment, we shall probably not be able minutely to examine within the limits of the present article.

This drill comprises two different engines, the one is exclusively for sowing the land, the other for hoeing it at the different periods from the formation of the first shoot to the approach of the vegetable, to a state of maturescence. To the first, we shall entirely confine ourselves at this time in illustration of our plate: of the other, we shall give a plate and similar description in the ensuing number, and perhaps, in the third, we shall make some further observations on the practical use of both, we having ourselves employed them through an extent of about 150 acres. The description of the sowing machine is as follows:

A. A. Shafts of the machine, applied to the axis of the wheels, so that the horse may go on the land, or in the furrow, without setting a foot upon the land, either for the purpose of drilling or horse-hoeing.

B. B. The wheels.

C. C. Coulter beam, with holes or mortices for the coulters, at different distances.

D. D. Handles of the machine applied to the coulter beam, also to the axis of the wheels, by hooks and eyes or staples.

E. E. Upper seed-box in partitions, covered by a lid, to protect the grain or seed, from wind or rain.

F. F. Lower seed-box in partitions.

G. G. Slides between the upper and lower seed-boxes, for regulating the quantity of seed sown.

H. H. Cylinder, with cups or ladles of different sizes for different sorts of grain or seeds; by which the grain or seeds are taken up and dropped into the funnels, I. I. and conducted thereby into incisions or drills, made in the land by the coulters, K. K.

L. A hook applied to the axis of the wheels.

l. A chain applied to the coulter beam, the last link of which being put upon the lowest hook, will prevent the tubes of the tunnels from being displaced, when the machine is crossing deep furrows or gutters.

M. A pin of iron, projecting from the coulter beam, which being lifted on the hook L at the end of the land, will bear the coulters out of the ground, while the machine is turning round, or on any other occasion, without labour to the person who attends the machine, in supporting them.

N. A cog wheel.

O. A cog wheel turned by the wheel N.

P. A lever and string, passing over a pulley to the axis of the cylinder H. by moving the lever P to the notch in the staple Q, the wheel O will be lifted out of generaton with the wheel N, by which means the distribution of grain or seed may be stopped at pleasure, in an instant, at the end of the land, or on any other occasion.

R. An iron bar with holes in it, by means of which, and a pin going through the holes, the seed-box may be elevated or depressed, so as to keep the lid of the box level with the horison, whether going up or down steep hills, or on level ground.

S. S. Two staples in the ends of the seed-box for the reception of two slips of wood, with canvas to prevent the wind from interrupting the grain or seed, also to prevent dirt or soil falling from the wheels into the funnels, I I.

Having now generally described the machine, we shall next make some observations on its application.

The process of drilling should never be attempted, but when the soil is dry, at least so dry as not to stick like daub to one's feet in walking over it, unless to regain a late, or in other respects a lost fertility.

If the soil abounds with large dry clods, they should be reduced by a heavy roller, and sometimes a spiked roller is necessary for that purpose. Previously to land being drilled, it should be ploughed deep, and harrowed slightly, to level the surface.

The plate represents a back view of the machine, when put together for working.

When the horse is put into the shafts, care should be taken that the chains or tugs by which he draws, are of equal lengths, otherwise the machine will have a constant tendency to deviate from the horse's line of traction. But when the horse goes in

the furrow, the near side may be somewhat shorter; and a chain may be extended from the end of the cross bar to a part of the shaft near the horse's shoulder.

In going from the farm yard to the field, the pin or guide M, must be lifted on to the hook L, which will bear the coulters off the ground. And when going on rough roads, if the coulter-beam C C and the axis of the wheels are lashed together by a rope or chain, it will prevent the coulters receiving any injury, by coming suddenly to the ground.

The grain or seed must be put in the upper boxes E E, an equal quantity in each box.

The cups or ladles upon the cylinders, are of four different sizes, and are distinguished by the numbers 1, 2, 3, 4.

No 1. The smallest size, (painted white) for lucerne, clover, cole, rape, &c. and will sow two pounds per acre. Also for turnips, and will sow one pound per acre.

No 2. (painted red) for wheat.

No 3. (painted green) for barley.

No 4. (painted yellow) for beans, oats, pease, tares, &c.

By raising or lowering the slides G G, a greater or less quantity of grain or seed may be sown at pleasure.

When the slides G G are as low as they can be, the wheat cups painted red will sow something more than three pecks of wheat per acre; and more in proportion, the higher they are raised, not exceeding one bushel and a half when raised as high as they can be, in rows at nine inches a-part.

The cups painted green, when the slides are as low as they can be, will sow one bushel of barley per acre; and more in proportion as the slides are raised, not exceeding two bushels, in rows at nine inches a-part.

The cups painted yellow, when the slides are as low as they can be, will sow almost two bushels of beans, oats, pease, &c. per acre, and more in proportion as they are raised.

Upon soils well cultivated it is recommended not to sow more than one bushel of wheat per acre.

Barley, from one bushel, to a bushel and a half per acre.

Beans, from two, to two bushels and a half per acre.

Pease, two bushels per acre.

Oats, two bushels and a half per acre.

Tares, two bushels and a half per acre.

The idea of over stocking the drill with seed, is very absurd; the crops will be materially injured by so doing.

It is recommended to make experiments upon different soils by sowing different quantities of seed, in order to ascertain the most approved quantity per acre.

If land is in a high state of cultivation, it is hardly possible to sow too little seed, provided the distribution is regular.

The funnels I I, are all numbered 1, 2, 3, 4, 5, 6, and for drilling at nine inches must be applied to their respective places so as to correspond with the numbers 1, 2, 3, 4, 5, 6, of the seed-box; six coulters being fixed in the coulter-beam at the distance of nine inches from each other.

For drilling at twelve inches a-part five coulters must be fixed in the beam, at eleven inches and a quarter from each other, when the order of the funnels will stand 1, 4, 5, 2, 3, 6, and no seed put in the box opposite the funnel, No. 5, when placed as above; the waste funnel may be stopped with paper to receive any seed that may accidentally fall therein.

For drilling at eighteen inches apart, three coulters must be fixed in the left end of the beam, at eighteen inches from each other, when the order of the funnels will stand 1, 2, 3, 4, 5, 6, and seed put in the boxes opposite the funnels 1, 3, 5, only, the other boxes being empty.

For drilling at twenty-two inches, three coulters must be fixed in the beam, one at each end, and one in the middle; when the order of the funnels will stand 1, 4, 5, 2, 3, 6: seed being put in the boxes opposite the funnels 1, 5, 6, only, the other boxes being empty.

Two rows of peas at nine or twelve inches apart, and a space of twenty-two inches alternately, has been tried and approved.

In level lands without ridge and furrow, if the attendant on the machine cannot find a straight side to begin at, he should mark out with sticks or bushes a straight line along one side of the field for his direction, and when drilling at nine inches, in order to make the space between the two adjoining drills, as he returns equal to the rest, the wheel of the machine must be brought very near the last impression of the coulter, and three inches more distant from the last impression of the coulter, when drilling at twelve inches, and of other distances accordingly.

As the machine approaches the land intended to be drilled, the lever P, should be lifted up from the notch in the staple Q, when the coulters are two feet on this side the exact place where the seed should be deposited; and the pin M removed from the hook L, by lifting up the handles D D.

When the machine arrives at the end of the land, the lever P must be moved to the notch Q, which will stop in an instant the distribution of the seed, and the pin M lifted on the hook L, which will support the coulters out of the ground while the machine is turning round.

If the coulter should not make the incisions or drills something more than two inches deep in light sands or loams, and not quite two inches deep, (one and a half is recommended) in strong clays or wet soils, they may be forced into the

ground by the hand, or by weights, or a beam of wood four feet long and three or four inches thick, being suspended by chains or cords at the hooks T T, in the handles of the machine for that purpose.

If in attempting to make the drills straight, the horse should deviate from his proper direction, the coulter beam, with all the coulters, will readily be moved to either side at pleasure, so as to make the drills straight by counteracting the irregularity of the horse's line of drawing.

If the machine should happen to be two wide for any given ridge, one or more funnels may be stopped with a little loose paper, and the seed received into such funnel returned into the upper seed box.

In drilling narrow high ridged lands, the outside coulters may be lowered, and the middle ones raised so that the points of the coulters may form the same curve which the ridge forms.

The top of the seed-box when shut should be kept level with the horizon, whether going up or down steep hills, or on level ground. This will make the distribution of the seed uniformly the same. The higher the front edge of the box is raised upon the bar R, the seed will descend more copiously into the lower boxes, consequently a greater quantity will be distributed.

It is apprehended that if the driver of the machine were to sit on the seed-box, and drive with reins, he might conduct the machine much straighter than by leading the horse.

The lower funnels placed behind the coulters, should be lashed fast to the coulters with leathern thongs or cords: if in lifting up the coulter-beam at the ends of the lands the upper funnels by chance should be displaced, a small nail may be driven into the edge of the seed-box, close above the edge of each funnel, which will prevent the funnels being displaced.

If weeds accumulate upon the coulters they must be displaced by a paddle, if the land be dry, weeds will not be very troublesome; but if wet and clammy, and full of twitch, it will be troublesome, and more or less prevent the seed being distributed regularly in the drills. Such lands had better be made a fallow of in order to clear them from weeds than drilled with any corn whatever. This would be productive of great profit to the cultivator, and more credit to the drill system at large.

When a piece of land is drilled, it must be harrowed once in a place with common light harrows, to cover the seeds and level the surface of the soil as a preparation for horse-hoeing. If the harrows are taken in the direction, the drills are made, there will be no danger of displacing the seed.

Seed wheat should be limed and brined two or three days before it is used, and made dry by spreading it thin on a boarded floor to prevent its heating, so as to kill the seed: if seed wheat is fresh limed and brined, the lime by acting as cement may cause it to clog in the cups. If this should happen upon the field in hazy, foggy weather, so much unlimed wheat as will make it separate may be mixed therewith.

Wheat should not, on any account whatever, be deposited more than two inches deep, (one inch and a half is recommended,) in strong clays or wet soils, nor less than two inches deep in all dry soils. The most approved depth is already ascertained in soils of different textures only by observing at what depth under the surface of the soil the secondary or coronal fibres of plants are formed in the spring.

Lands formed in level ridges four feet six inches wide exclusive of the furrows in strong retentive clays, and wet soils, and nine feet six inches wide exclusive of the furrows in all dry soils, are best calculated for the practical purpose of drilling, in which case the horse will always go in the furrow without setting a foot upon the land.

Land intended to be drilled with carrot seed should be ploughed deep, and for every half acre of land one bushel of saw-dust, and one pound of carrot seed, should be provided.

The saw-dust must be well dried and sifted, to take out all the lumps and chips, and divided into eight equal parts or heaps. The carrot seed must likewise be well dried, but not so as to kill the seed, and rubbed between the hands to take off the beards that it may more readily separate; and being also devided into eight parts, one of the above parts of saw-dust and a part of carrot seed must be well mixed and incorporated together, and so on with all the respective portions of saw-dust and carrot seed, till they are properly combined; in which state, in the saw-dust with the carrot seed intermixed may be drilled with the cups or ladles, No. 2, already described. Carrot seed resembling saw-dust very much in size, roughness, weight, adhesion, &c. being well mixed with saw-dust, will remain so mixed during the sowing. One of the cups, No. 2, filled with saw-dust, upon an average, contain three or four carrot seeds, by which means carrot seed will be as regularly distributed in the drills as any other grain or seed whatever.

If the wind should be high when carrot or any other seeds be sown, it may be necessary to fix a screen of mat or canvass before the seed-box, to keep off the wind; by this, and two side wings S S, the seed will be perfectly screened from wind or rain.

Such is the description of this valuable machine. Our readers ought to be apprized that it cannot be employed on land

which is not in fine tilth. The plough, the harrows, and the roller, must be successively employed to reduce the clods of rough land, otherwise the farmer will be wholly disappointed. We think it extremely material to revive this circumstance in the recollection of the reader, because from the use of the machine on land wholly unfit for its reception, the most unjust prejudices have been formed against it in various parts of the kingdom. When it is employed on a soil adapted to it by a discreet and diligent person capable of conducting it, we have no hesitation in declaring it to be not only the most beautiful, but the most useful system of machinery, that ever was applied in tillage, and if it were universally resorted to throughout the kingdom, the produce of the country would be increased beyond even the extravagant hopes of modern calculators.

AGRICULTURAL CHOROGRAPHY OF ENGLAND.

To the Editor of the Agricultural Magazine.

SIR,

WHILE some of your Correspondents are enriching the pages of your work with observations on distinct counties, parishes, or farms; it may not, perhaps, be uninteresting to some of your readers who are attached to general and comprehensive views, to attend to a few particulars which are connected with what may be called the agricultural chorography of England.

The western coast, through the whole extent of it partakes of the rocky character. The eastern from the north of the Thames to Scarborough, has uniformly low flat shores.—From Scarborough to the Tweed the coast is a medium between the mountainous character and the flat eastern coast below it. The whole of the southern coast from North Foreland to the extremity of Cornwall, is similar to that I have just described, varying between the flat and the mountainous.

The southern counties in the interior have an irregular superficies of hill and dale, while the western assume the mountainous character.

The midland and eastern counties have scarcely a hill till we arrive at the centre of the kingdom, where we see a few insulated mountains, that appear the artificial production of some British Titans, from their incongruity with the country by which they are encompassed.

Proceeding northward, with Derbyshire, the mountainous character begins. Here a chain of elevations takes a north-west direction, which dividing Lancashire and Yorkshire, enters Westmorland, where the mountains fill the whole of the pro-

vince, and a part of Cumberland, when againthey are contracted into a chain, and enter Scotland through Northumberland. These mountains and those of Wales are the only eminences which are considerable enough, correctly, to receive that appellation throughout the island.

By the late improvements of agriculture, it has been discovered to be of the greatest consequence to ascertain the region of chalk.

The great central patria of chalk appears to be in the contiguous parts of Berks, Wilts, Dorset, and Hants. From this vast bed three principal ridges are extended. The first ridge leaving Berks, crosses the Thames, and running northward through Buckinghamshire, enters Bedfordshire and terminates at Dunstable, beyond which place chalk is never seen. The second ridge taking an eastern course, occupies great part of Surry, and part of Kent; then turning near Dartford to the south east, it continues in that direction, forming high grounds, till it meet the sea at Dover. The third ridge runs nearly due south, it is found through the reach of eighty miles in length, and is not above four in breadth, scarcely any where; the part of it extending to Sussex is distinguished by the name of the South Downs, and Portsdown may be considered as part of this great ridge.

There is scarely any chalk in the kingdom excepting in the districts here described.

North of the river Trent all the counties abound in rock. South of that river there is no rock until we approach the coast.

The counties where agriculture under the modern system of improvement is carried to its highest excellence, are those of Norfolk, Suffolk, Kent, and Essex. Kent perhaps has the superiority in the culture of beans, and in drilling the greatest variety of crops: Norfolk for the growth of turnips, but Essex has, perhaps the advantage of the rest in the richness of the soil. Suffolk has for many years maintained the highest rank in the culture of the cabbage, in the animals of the dairy, and perhaps in the breed of the English cart horse. Throughout the whole of the West of England the farmers are justly celebrated for the management of their meadows.

If, Mr. Editor, this paper should be acceptable, it is probable I shall continue my communications on general agriculture, which will be supplied from the minutes I have made in various journies for my amusement in different parts of the kingdom.

Sept. 3, 1803. CHOROGRAPHUS.

ON RESTRICTIVE COVENANTS AND TITHES.

To the Editor of the Agricultural Magazine.

SIR,

IN your July number a Correspondent states that on a landlord granting permission to a tenant to convert grass land into tillage, the increase of rent should be 25 per cent. and, as he says that such a conversion is a hazardous experiment to the landowners, I presume that he considers it more conducive to their interests to restrain the farmer than to leave him unfettered by the original agreement. Whether this increase of rent be more or less than the occupier can afford to pay, I shall not at present enquire; neither shall I state my reasons for dissenting from his opinion respecting the most judicious mode of raising wheat on such grounds, and returning them to grass without deterioration. I beg leave, however, to offer a few remarks on what I deem obstacles to agricultural improvements, and especially on restrictive covenants. If your Correspondent would confine his restrictions to the breaking up of *old, rich, and productive* grass lands only, I would concur in his opinion, for in most parts of this kingdom, even where climate and other circumstances are propitious to the growth and delivery of corn, pastures of this description can readily be let for the purpose of grazing, and on a term of twelve to twenty-one years, at from ten to twenty shillings an acre more than the adjoining tillage land, equal in quality and condition. So that if the principle *that the produce of a country should be suited to the demands of its inhabitants* be just, those who have contended so strenuously for subjecting *all* our old grass lands to the plough, have been the advocates of an injurious system; for most assuredly the ability to pay this additional rent of ten to twenty shilling an acre, arises from the steady and favourable demand in our markets for great quantities of large beef of the first quality, which (on terms sufficiently advantageous) can only be produced on old rich pastures, which are productive of rich, luxuriant and nutritious herbage. I am well aware that the truth of this assertion will be warmly disputed by many of the advocates of artificial grasses; experience, however, confirms me in opinion, that these grasses are not the most profitable for fatting cattle of *all* sizes and descriptions. Among all our celebrated agriculturists and graziers there is not a warmer advocate for broad clover and rye grass than Mr. G. Culley; yet he says, "fogs (or aftermaths as they are called in the southern parts of England,) from old grass, will certainly feed cattle better in Autumn; the richness, luxuriance and strength of such herbage being better calculated for their constitutions." It is

universally admitted that the butter and cheese made on such lands is much superior, both in quantity and quality, to those made on other kinds of grass; but while it is justly considered as injurious to the community to break up *all* our old grass lands, I am decidedly hostile to that unprofitable and disgraceful system of continuing middling, unproductive pastures and meadows, in grass, and exhausted tillage land in constant aration, which practice unfortunately for the landlord, the tenant, and the public, is pursued in many parts of the country. I believe nothing is better understood by practical husbandmen in almost all parts of the world, than that fresh land—land which has continued some time in grass, produces the most luxuriant and valuable crops of corn; and British agriculture, in our best cultivated districts, has clearly proved that old tillage land will produce crops of broad clover and rye grass, which will raise much more beef and mutton per acre, than those *inferior* old pastures; and that artificial grasses and corn alternately is the most advantageous method of renovating and fertilizing lands which have been long under the plough. I therefore contend that the agreements between landlords and tenants should contain no clauses prohibiting the ploughing of any grass land whatever, with the exception of the rich and productive grazing pastures already mentioned, water meadows, and some old land pastures, which are incumbent on clayey and very wet substratums: nor should the latter be bound to keep a certian quantity of land *at all times* in grass, for it is obviously absurd and detrimental to the interest of the country, to point out before hand, what should be regulated by the demands of the markets—arguments therefore seem unnecessary to prove the impropriety and danger of providing large supplies of beef and mutton for a people, who either from necessity or choice, are calling *loudly* for corn, and it would be grating and insulting to attempt to *force* those who wish to consume animal, to live on vegetable, food. Unquestionably if tenants were not restricted further than I have mentioned, they could afford to pay a higher rent, and certainly this must appear, (in the abstract at least) to *every landlord*, an important advantage. But here another consideration, namely, whether the present advantage may not turn out a future and permanent loss, demands their attention; and from the want of practical knowledge, owing to their being engaged in public business, &c. &c. they are unable to determine what course would best promote their real interests. Land agents or land *doctors*, are therefore entrusted with this momentous business, and unfortunately most of these gentlemen are but ill-qualified to decide with propriety: the landlord's fears are therefore corroborated, and by the written agreements it is declared to be little less than sacrelege for the

unhallowed hands of the tenant to expose the interior riches of his landlord's naturally fertile but unproductive soil—that the breaking up of such grass lands and occupying them under that system which is denominated *Convertible Husbandry*, grass and corn alternately—would permanently lessen their value, is an opinion which I hesitate not to say proceeds from prejudice: for experience has demonstrated that it is an ameliorating system in all cases, where the ground is not over cropped, and where it is well cleaned, pulverized, and manured; and it should be recollected that all other tillage land which is over cropped, and not properly cultivated and manured, is deteriorated as well as that which has been recently under old grass, and that covenants which would lead to a proper rotation of crops, and proper cultivation and manuring, would be highly advantageous. I have said that experience has fully proved the utility of the system I am recommending. This has not, however, been the case in every district,* and therefore it may be necessary to adduce some arguments in its favour, and to assign reasons for the good effects which have resulted from it.† It is universally admitted that dung, composed of vegetable and animal matter, is the most enriching manure with which the practical agriculturist is acquainted: I must therefore request land-owners, and their agents, to consider how much more dung can be raised from a few crops upon fresh soil, than from the same number upon old tillage lands, which are equal in number of acres—that one good crop furnishes the means of obtaining another; and that dung accumulates somewhat like money at compound interest; and then to be allowed to ask them which system is best calculated to keep the soil in a progressive state of improvement; that which raises great crops of straw and much manure, or that in which the quantity of these valuable articles is well known to be comparatively small. Experience proves very clearly that under convertible husbandry a judicious farmer is seldom or never in any material want of manure. The same unerring test proves that, in almost every instance, there is a general and great deficiency under the other system. And when I assert that under the former the land not only raises more dung, but requires less than under the latter; in other words that fourteen loads per acre will render fresh land more productive than old land can be rendered by the application of twenty-one, and that calcareous manures, (lime, chalk, &c.) are highly beneficial to the for-

* In many it is not practised.

† The increase of rent, however, which a tenant will give for a farm on which he can pursue convertible husbandry in preference to constant corn and perennial grass *for a long term*, ought to be received as evidence of its superior utility.

mer, and of little or no utility to the latter, I advance no more than what almost every practical and scientific agriculturist will support. The advantages then to the landlord, the farmer, and the community, from this alternation of grass and tillage, will appear still more striking when we consider that under it, great crops of wheat can be raised from the application of lime only; and consequently, that from the whole of the dung being applicable to the turnip land, a great additional weight of that invaluable root may be obtained, and nothing is better calculated to increase the size and improve the quality of the dunghill.

It was undoubtedly the increase of manure which the celebrated Roman, *Cato*, who possessed much knowledge of agricultural affairs, had in view, when, on being asked, what was the best system of rural economy, he answered, "that which raises the most food for cattle." To increase the size of, and enrich his dunghills, should be one of the principal objects of the farmer, and as this is obtained in a greater degree by that system of husbandry which preserves the soil fresh and fruitful by alternate grass and arable crops, than by any other, it should, unquestionably, meet universal preference, with the exceptions already mentioned. It cannot injure the quality of the soil, but must on the contrary improve it. Those landholders and agents, therefore, who prevent its adoption, pursue a conduct which is highly injurious to the country and her soil, which conduct cannot be justified on the ground of preventing deterioration of their property, unless they can prove that it is injurious to keep land fresh, that an old fogged and unproductive pasture, will raise more beef and mutton than a rich and productive crop of clover and rye grass, and that the fertility of the soil can be better preserved by a small than a large supply of dung. But, Sir, suppose that we admit for the sake of argument, and for that only, for I deny the truth of the position, that their old pasture land would really be injured in some degree by being converted into tillage for a few years, even under the most judicious management; would they be injured upon the whole by the introduction of convertible husbandry? Certainly not. The warmest advocates of the old system have now contended, that old tillage lands are not much improved by being laid to grass.

Many writers on this subject have alledged, that tithes are the cause of the baneful system of constant grass and permanent tillage. For my part, I shall not positively assert that they are not in some degree the cause. I must, however, beg leave to state in opposition to such high authority, that I have lived in England nearly all my life, that I have occupied, and do at this moment occupy, lands which are, and others which are not, subject to tithes, and that I have never but in one or

two instances, discovered that they operated so as to prevent the breaking up of old unproductive grass grounds.—Indeed if we allow what I have already stated in favour of convertible husbandry to be well founded, viz. that it produces more rent to the landlord and greater produce and profit to the farmer, it will be rather difficult to prove that the payment of tithe operates in such a manner, unless we consider that English land-owners and the English tenantry are not, *like* the rest *of mankind,* influenced by a regard to their own interest, which would be absurd. These land-holders seldom or never, *at least in the course of my observation, I have never remarked that they do,* bring the payment of tithes forward in discussing the propriety of ploughing old grass land. The only motive by which they seem to have been actuated in refusing leave to plough such ground, is a regard to their interest, or what they conceive to be their interest. With respect to the occupiers, it is, *notwithstanding the payment of tithes,* with deep regret that they receive the refusal of a license to break up fresh pasture or meadow land, where they labour under no restrictions, their management proves that tithes seldom, or never, prevent their pursuing convertible husbandry in preference to any other system.—They well know that the interest of the tithe-holder is intimately blended with their own, and therefore do not forego their own benefit to reduce that of their neighbour. For these reasons I think it fair to conclude that restrictive covenants, rather than tithes, are the cause of so many old pastures and meadows remaining in their present disgraceful state. I must beg, however, to be understood as by no means friendly to the continuance of the tithe system, which I am satisfied is highly detrimental to the *improvement* of waste and poor lands.—All I contend for is, that it is not injurious, *in so great a degree* as many writers on the subject have represented. Few men are better acquainted with the vexatious modes of collection, in which several proprietors indulge themselves, than I am.—From an impropriator I have received, for some time past, the most discouraging and injurious treatment; still however, I endeavour to make my farm as productive as possible, well knowing that I cannot injure the tithe-holder without injuring myself; and that if the land had not been subject to the payment of tithes, the landlord would have expected a greater rent.

On productive land, supposing the tithe-holder to refuse a money payment, the occupier beholds one tenth of his corn and manure removed from his farm, from the remainder harvest, he reaps a profit, but on waste and inferior land, the case is much worse; there he not only beholds the tenth part of his

crops carried away from the premises, but also a considerable part of the *capital* employed in the *improvement* of these poor soils, which every man of experience knows to be a very expensive undertaking. In many cases their produce for several years is very little, if any thing, more than equal to the seed which they require, and for a great space of time the occupier would be greatly out of pocket, even if he could appropriate to himself the *whole* produce. Here then, tithes unquestionably operate as a bar to *improvements*, for which reason, and also with a view of terminating any disputes or ill will, which they may cause between parishioners and their pastors, the effects of which are highly injurious to society, I would warmly recommend a commutation. I am firmly of opinion with your correspondent, Mr. Middleton, that our clergy and religion might be as well supported without the power to take tithes in kind, as they are at present. Indeed I am much inclined to believe that both would, under a proper commutation, stand upon a more agreeable and secure basis. Many objections have been advanced against this desirable measure, but with what justice, I own I cannot discover, when the proposed plan of commutation would not only remove a bar to improvements in agriculture and the breeding of live stock, but secure to tithe-holders the full value of their property, together with the advantage of having that property increased in proportion to the future increase of the value of land. The best plans of commutation which I have heard of, are those which are recommended in, I think, the Agricultural Survey of Hampshire, and a late periodical publication on rural affairs. The authors of these plans advise the appointment of commissioners, with proper authority to assertain, as nearly as possible, the proportions which the tithes for many years past have borne to the rents of the various descriptions of land, viz. of arable land, of rich grass land, and of pastoral districts or wastes, and that the proportions of all present and future rents should be paid to the tithe-holders by the occupiers of the lands * by annual payments, for all time coming. Thus would the payments of the occupiers be fixed for the term of a lease which would secure to them the advantages of their improvements, and to the tithe-owner an increase of allowance, at the *expiration of the term*, proportionate to the advance of the landlord's rent. This plan seems simple, easy of execution, and susceptible of such regulations as would prevent fraud, and be likely to increase to a great extent, and in no great space of time, the improvement and tithes of the country. These authors have, I believe, given it as their opinion, that on the first kind of land, the tithes will be found to have been about

* Both parties being bound by act of Parliament.

one sixth, on the second, about one tenth, and on the third about one fifteenth of the rents for many years past.

What effects the removal of such obstacles to agriculture and the improvement of our waste and unproductive lands, as those I have mentioned, would produce on our prosperity and national power, cannot be precisely calculated. There is, however, abundant reason to conclude that as Great Britain and Ireland, under the present system, contains sixteen to seventeen millions of people, we could under the propitious effects of more perfect and judicious regulations in our agriculture, tithes and corn trade, support a population of nearly twenty-five millions. At some future period, perhaps, I may transmit you such facts and calculations as will lead to shew that this is not vague conjecture; at present, I feel that I have encroached too much on your time, and shall therefore conclude by recommending the following lines to the attention of our legislators and land and tithe owners.

"Let us cut off these legal bars
"Which crush the culture of our fruitful isle.
"Were they removed, unbounded wealth would flow;
"Our wastes would then with raised produce smile,
"And England soon a second Eden prove."

Yours, &c.

AGRICOLA NORTHUMBRIENSIS.

EXPERIMENT ON THE GROWTH OF WHEAT.

To the Editor of the Agricultural Magazine.

Sir,

I TAKE the liberty of sending to you a table of results of a set of experiments made principally with a view to ascertain the values of different Steeps in curing the Smut in Wheat, and of promoting its growth; with twelve samples of smutty and twelve samples of good wheat, steeped in twelve different solutions of the most common acids and alkalies, and salts most easily to be procured; and if you think they merit a place in your Magazine, they are at your service. The wheat was sown at Leighton, Bedfordshire, in a field belonging to Mr. Grant, and on a sandy soil: and as the next wheat sowing time will soon be here, I presume it will be acceptable to some of your readers. The solutions were all made cold, and the samples were twenty-four hours in steep.

The columns marked A are the results from the good wheat, and those marked B are from the smutty samples. It will be worth remembering that neither of the samples that were steeped in the solutions of nitric acid came up, excepting a single corn in the good sample, and which produced upwards of 1200 corns.

THE TABLE.

Substances used.	Specific gravity of the solution.	Number of Smutty Ears in 3 sheaves.		Bushels of good wheat per acre.		Cwt. of straw per acre.	
		A.	B.	A.	B.	A.	B.
1 Solution of Potash	1,357	1	81	21 6	13 6	36 6	29 1
2 —— of Muriat of Potash	1,097	3	218	20 2	10 1	36 0	21 1
3 —— of Nitrat of Potash	1,080	7	115	23 8	14 3	36 9	31 9
4 —— of Soda	1,056	9	159	20 2	11 7	35 6	26 7
5 —— of Muriat of Soda	1,089	——	290	24 0	14 5	41 5	33 3
6 —— of Sulphat of Soda	1,047	12	241	21 6	12 3	38 5	27 8
7 —— of Muriat of Ammonia	1,026	1	150	19 8	17 6	35 4	30 2
8 —— of common Soot	1,025	——	123	20 8	11 4	34 8	25 3
9 —— of Lime saturated	1,003	——	2	21 9	12 4	38 7	25 9
10 —— of Nitric Acid	1,016	——	——	——	——	——	——
11 —— of Muriatic Acid	1,011	——	13	20 7	16 1	35 7	34 1
12 —— of Sulpharic Acid	1,050	——	——	20 4	17 8	35 4	37 1
13 Dry in its natural state	——	6	323	20 3	14 7	35 7	31 0
14 Washed in common water	——	None sown.	107	——	18 3	——	38 5

I am, Sir, your most obedient servant,

B. BEVAN.

ON THE RURAL ECONOMY OF THE ISLE OF THANET.

To the Editor of the Agricultural Magazine.

SIR,

HAVING lately spent some time in the Isle of Thanet, and having been struck with the excellent system of husbandry there pursued, I have arranged the most important particulars respecting the same for my own entertainment and instruction. These are much at your service should you think them worthy of insertion in your Magazine.

The greatest length of the Isle of Thanet, extending from the North Foreland to its western boundary does, not exceed eleven miles; its breadth may be about three fourths of that distance. It contains upwards of twenty-six thousand acres of land, separated from the ocean by a high and broken cliff

of chalk, the outline of the country, when you quit this boundary, appears flat and uninteresting. The irregular form of this impregnable barrier (which is elevated sixty feet above the sea) suggests the idea of some violent convulsion of nature, or of its frequent contests with the waves of the neighbouring deep. In several places immense caverns of chalk have been scooped out, by the incessant activity of this powerful agent. Through some of these openings, roads have been made for the conveyance of sea weed from the coast, which is carefully watched after every storm, by the attentive inhabitants of the island, who are acquainted, by long experience, with the value of this rich manure.

From the neighbourhood of Margate the prospect is enlivened by a full view of the navigation of the Thames; a sight highly gratifying to the feelings of every patriotic Briton.

The air is pure, but keen, as the coast is exposed for a considerable extent to the north east wind, by the refreshing breezes of which the atmosphere is cooled during the height of summer, when vegetation becomes parched on the dry and chalky soil.

Though there is no commonable or waste land, yet the country is open, and the want of green hedges gives but a dreary appearance to the prospects when the corn is carried; particularly as the eye in vain searches for the *lovely green sward*, which in other counties so soon revives under the influence of the autumnal rains. The only meadows in the district are to be found in the low grounds, which skirt the island, and which were formerly an arm of the sea, by which vessels were enabled to enter the Thames without sailing round the north Foreland. These are called marshes, and amount to above three thousand five hundred acres. The soil is principally a stiff clay, mixed with sand and the exuviæ of sea shells.

The Isle of Thanet contains ten parishes, yet seven churches only remain. We look in vain for Woodchurch, Sarre, and Stonar. These have yielded to the hand of time; and their situations are only marked by heaps of ruins.

There is little or no wood in the island. Small plantations have, however, in some places been reared for shelter round the farm houses. The trees are principally elm. In the vallies these succeed, but wherever they rise within reach of the marine atmosphere, they soon turn their withered heads from the blighting storm. In some not only the leaves but the bark disappears, and the branches become completely naked.

Fennel, thyme, and marjoram abound in the hedges, which plants being peculiarly grateful to the bees, are supposed to give superior flavour and value to the honey of this district.

The farmers are wealthy, industrious, and intelligent. The

farms are generally large, and frequently occupied by the owners of the soil; who, proud of their independence, were eagerly exerting their means of defence against the inroads of our inveterate foes.

Many inhabitants draw their substance both from sea and land, and are equally skilled to drive the plough or to direct the helm.

The *soil* of the island may be denominated a chalky loam, or rather a light loam upon a chalky subsoil. This staple is in several places of considerable depth, descending above a foot and a half before it reaches the chalk. The natural fertility of the soil must be great, and this advantage has been improved by an excellent system of agriculture. They have long been acquainted with the drill husbandry, to which the soil is particularly favourable. By an early attention to hoeing crops, they have brought cultivation to a garden neatness.

The Kentish turnrest is the plough principally used, it is drawn by four horses. Shims and horse-hoes are employed for clearing the soil of weeds.

On the poorer parts of the island the course of crops which has been long practiced is fallow, barley, clover, wheat. Except in Suffolk and Essex there are, I believe, but few places in England where the fallow is given for spring corn, a practice which cannot be too highly commended. The manure being laid on the fallow for barley, secures a vigorous plant of young clover, the roots of which, when strong and flourishing, furnish a favourable matrix for wheat. On light land, however, where turnips can be fed off, the Norfolk practice is beyond all doubt the superior husbandry. On three fourths of the stiff land in the kingdom the fallow and dunging are given for wheat.

Where the land is brought into good condition, peas or beans are frequently substituted for a fallow, as peas, barley, clover, wheat; or fallow, barley, beans, wheat.

On the most fertile lands in the island they have adopted what is called the round tilth of Kent, viz beans, wheat, barley. In this case the manure is laid on the barley stubbles for beans, and the barley is sown late that the wheat stubble may be previously well worked. The barley is drilled in rows from seven to ten inches apart. Four bushels of seed are allowed when sowed broadcast, and from two and a half to three bushels when drilled. The succession of two crops of white corn ought to be avoided.

The wheat is drilled in a similar manner on the bean-stubble, which is first cleaned of surface weeds by the use of a shim. As the crop advances the hoe is used liberally. The produce of the wheat and barley, but particularly of the latter, is very great.

The management of their bean husbandry, is excellent. The beans are drilled in furrows eighteen inches apart, at the rate of from three to four bushels per acre. These are horse hoed as soon as they appear; they are afterwards hand-hoed, and finally the ground is earthed up against the stems.

They begin sowing beans early in February, and labour with assiduity, working the teams in the afternoon, till this important operation is concluded. From considering the strength of the tap root and the success with which beans are cultivated on the stiff lands of Essex and Middlesex, I was surprized to see such good crops in some parts of this district! where the staple was thin and the subsoil light and gravelly. This places in a striking light the hardy and accommodating nature of this plant, and the beneficial influence of good cultivation.

Lucern and sainfoin supply the place of natural pasture. The lucern is chiefly sown broadcast, it is cut green for the cattle in the stables. Tares are cultivated for the same purpose. On account of the want of fences cattle are not allowed to range at large till after harvest. Lucern, owing to the depth and size of its roots, is enabled to stand dry weather better than many other artificial grasses; of this I had sufficient proof during the present summer, it being the only green vegetable to be discovered in the fields. It was much esteemed in Italy by the Romans, and now flourishes in Egypt. Broadcast lucern, after having stood six years, is apt to be overcome by the natural grass of the soil; in this case frequent harrowings are recommended, but I have found a full dressing of coal ashes, to be more effectual in reviving the lucern than any other application. The roots being still in the height of their vigour, throw out shoots and branches which overcome all opposition. Lucern might, I apprehend, be more generally cultivated in Middlesex, in the place of winter tares, which is a very precarious crop. Though the last spring was unfavourable, and vegetation was for some time at a stand, yet I had lucern eighteen inches high in the middle of April. Winter tares generally failed last year in my neighbourhood.

The Isle of Thanet farmers break up their sainfoin leys for corn by paring and burning. Radish seed is frequently sown instead of beans, and canary on clover leys, or bean stubbles, in place of wheat. These are sown in furrows about ten inches asunder, and afterwards kept clean with repeated hoeings. The canary is suffered to ripen at that distance, but every other row of the radishes is cut up with a horse-hoe, so that the rows ripen twenty inches apart.

Sea weed enters into the composition of all the dunghills on the island. It is mixed with layers of dung and earth and chalk, and in some places sea sand is added to the heap.

In order to form a just estimate of the value of this manure, we should look to the coast of Scotland, where the poor inhabitants have to contend with an unfriendly climate and a barren soil. In this valuable gift we behold the beneficent hand of providence stretched out for their relief. The important discovery has been made that corn ripens earlier where the manure has been laid. It is unnecessary to remark of what incalculable advantage this must be in a climate where the harvest is frequently interrupted by the Tangle, (*Fucus Palmatus*) having a long stalk and a broad leaf. The northern farmers frequently spread it directly on the land as they collect it from the shores, and plough it in as fast as possible. They consider a load of sea weed equal to a load of dung; but at the time of sowing barley it is considered as nearly of double value, partly owing to its being, as they say, ripe at that season, and therefore having the strongest manuring quality, and partly owing to its efficacy in producing fine crops of barley both in quantity and colour.

Barley from sea weed is much esteemed by the maltsters, and is in great request for seed, particularly by the upland farmers, as it is said to ripen a week earlier than any other. In some parts of Scotland, it is observed that this manure is of too scalding a nature to be often repeated, without some admixture of soil or other compost. Without this manure, on many parts of the coast, they assert the farmers could not pay their rent. These facts which are stated in several places in that valuable work, Sir John Sinclair's Statistical Survey of Scotland, are applicable to the bright colour and productive crops of the Isle of Thanet barley, which is generally sold for seed at a high price in the London markets.

There is nothing worthy of notice respecting the cattle of this district. The sheep are from Romney Marsh, or resemble a cross between that breed and the South Down. The cows are a mixed breed between the Welch and the long horned. The hardest breed would be best adapted to a situation which so severely feels the drought of summer. It is corn, and not live stock, that flourishes in the Isle of Thanet. The horses are the strong black, some of which are produced from mares of the Flanders breed.

I wish I could give a satisfactory explanation of the curious appearances in the shoulders of animals that have been hard driven, noticed by your Correspondent from Bath. There may be effusions of serum, distinct from the red globules of the blood, similar to what are found in the cavities of the Thorax, and Pericardium in cases of Pneumonic inflamation which have terminated fatally.

White Webb Farm, A. WILKINSON, M. D.
Enfield Chace, Sept. 17, 1803.

COWS KEPT FOR THE DAIRY MUST NOT BE PERMITTED TO FEED ON THE DEAD LEAF OF THE TURNIP.

To the Editor of the Agricultural Magazine.

SIR,

I OBSERVE in your Catalogue of Experiments in the last Number, "a method of making excellent butter from the milk of cows fed upon turnips, by C. Crowe, Esq. of Kipling."

It might be impertinent in me, on any other subject, to question the judgment of this country 'Squire, but as I have spent a long life in the business of the dairy, and with the cold hands of old age, still continue the duty, I shall venture to make a remark regarding that paper.

It is proposed that "when the milk is brought into the dairy, to every eight quarts, one quart of boiling water be added;" and he says, "by keeping strictly to this method, I have constantly, during the winter, sweet and well-tasted butter from the milk of cows fed upon turnips."

By this plan it is supposed that the principle which constitutes this taste of the turnip in the milk, will be exhaled with the steam. In the first place I must oppose my experience to that gentleman's; and assert, that I have long tried this expedient without producing the desirable effect. But the method appears to me completely to answer the design, if the additional precaution be used of *preventing the animal from feeding on the dead leaf of the turnip*, and I am inclined to think by the concluding sentence in the account of that experiment, due care is taken in this respect in 'Squire Crowe's dairy.

I know, Mr. Editor, the importance of correctness in these experiments, and I cannot avoid giving you a little article of of instruction. You must not depend upon the information you receive from these country 'squires, for they are much better acquainted with the transactions in the kennel and the stable, than in the dairy and the farm, and from what I have frequently witnessed in the families of our manorial lords, with whom I have lived, the produce of the market is often substituted for the labour of the dairy, while the pretty damsel of the churn receives compliments and rewards for her dexterity, from her luxurious master.

When you have made the necessary corrections to render my meaning intelligible, you may insert this letter, from your friend and servant,

Cambridge, Sept. 6, 1803. JANE PARTRIDGE.

ON PATENTS, METALLIC CUPS FOR SEED, EXPENCE OF IMPLEMENTS, &c.

To the Editor of the Agricultural Magazine.

SIR,

IN your Number for January last I perceive your Correspondent enquires, if the Hertfordshire Turnip Drill he alludes to, would be an infringement on the patent obtained for Mr. Cooke's Drill.

The date for which all patents are granted is limited to fourteen years, after which " the discovery, whatever may be its importance, is laid open to the industry of the nation, and all the future advantages become a public indefeasable right."* If, therefore, Mr. Cooke's patent for his drill obtained for the said term of fourteen years have expired, your Correspondent can be guilty of no infringement on the rights established by the royal grant.

If this Turnip Drill of Agricola Norfolciencis be a new contrivance, he may undoubtedly obtain a patent for it. If it be not wholly a new contrivance, but an alteration from an old one, and the alteration be material and useful, it is also the fit subject of a patent.

You make the following observations, Mr. Editor, or rather Messrs. Editors, in a note at the foot of this letter.

" We presume that using cups turning on a cylinder in a circular cell, would not be deemed an infringement of Mr. Cooke's patent, or Mr. Amos would not have ventured to apply them to his drill; indeed, Mr. Amos is not the only person we recollect to have used metal cups, as the late celebrated Mr. Winlaw, of Margaret-street, Cavendish-square, constantly applied them to drills of different constructions; nor do we believe that Mr. C. as Agricola Norfolciensis observes, means to assert that he is the original inventor."

If metallic cups as employed by Mr. Cooke were used before the date of his patent, they could constitute no part of that gentleman's patent right, and as far as respects him, are open to every body. No patentee can obtain any exclusive rights with regard to any portion of his machinery, excepting that of which he is the inventor, and which never has been in use before, in any part of the united kingdom.

I observe one objection in the paper to which I have alluded, which, in justice to the manufacturers of agricultural instruments, should not pass unnoticed. " One great impediment to the general introduction of the new stystem of husbandry is the extravagant price of the late improved implements; but it is particularly to be lamented that so useful an

* See Collier's Essay on the Law of Patents, ch. 2. page 23. of which some notice was taken in the Critical Catalogue of our last Number.

article as Cooke's Drill Machine, should not be more simplified, so as to render the purchase of one easy to every occupier of land; for at present none but the wealthier part of the community can possibly afford so large a sum as eighteen or twenty guineas, for a single implement of husbandry."

I admit it to be true that the expence of these utensils are often too great for the ordinary farmer, but I cannot admit that the artificer often receives more than the fit compensation for his labour and ingenuity. Mr. Cooke's Drill, under all its recent improvements, I shewed to a very experienced workman in the vicinity of my farms: I examined with him the expence of the different parts of this complicated and beautiful machine, and instead of being astonished, as some might suppose, at the extravagance of the charge, he was surprised it could be afforded at so inconsiderable a price.

With respect to what is proposed of simplifying the machinery in order to make it less expensive, it may be answered that the merit of this implement depends on its complexity: there is no variation can be made in order to render it more simple, which would not deprive it of some obvious utility.

I am, Sir, &c.

Aug. 20, 1803. AN EXPERIMENTAL FARMER.

THE CULTURE OF LUCERNE.

To the Editor of the Agricultural Magazine.

SIR,

I NOTICE a proposal which is stated in the 39th experiment of your last number, for the culture of Lucerne broad cast. Of all the vegetable productions, this is one of the most valuable, and its importance is the greater because the increase is so prodigious every succeeding year. In ordinary grasses, we are obliged to manure to keep up the crop; lucerne, without any additional manure, will, the second year, four times exceed the first, and the third year sixteen times exceed it, under a proper system of cultivation.

Whatever respect I may entertain for the experiment stated from A St. Ledger, Esq. it is now completely established, that the most advantageous way of cultivating lucerne, is in rows according to the drill system, by which means it can be periodically earthed up by the horse hoe, and the increase, when this precaution is attended to, is a sort of agricultural miracle, which few would believe without the immediate evidence of their senses.

Before the seed is deposited in the ground, the earth should be ploughed as deep as can be done with any convenience, and without turning up the sub-soil, and a rich loam in good heart and tilth is best suited to the purpose. The seed should be

carefully mixed with fine mould, and 12lbs. is sufficient for an acre. The first year, the appearance is weak and sickly, and is very discouraging to the eye of that person who is not sufficiently acquainted with the system of nature. She has ordained, that her most vigorous and powerful productions should be diminitive and feeble in their nascent state, and slow in their progress. During this year, the horse hoe must be applied with the utmost caution, and by the most skilful and experienced hand, otherwise the minute fibres of the roots would be swept off from the soil, to which, they yet but imperfectly adhere. The distance of nine inches in the rows, is sufficient for working the horse hoe with perfect security, if properly managed, but if the attendant be not accustomed to the use of this implement, the foot or spear of the hoe (I allude here to the hoe with Cooke's Drill) may be reduced an inch at the heel, or the distance of the lucerne may be extended to twelve inches. During this first year, all the rows must be hand weeded, especially in land subject to run to gras. The horse hoe will keep the intermediate spaces clear, but cannot, in course, be admitted to touch the rows.

The second year, the farmer begins to obtain the reward of his labours. The root has taken powerful hold of the ground, and the horse hoe may be applied by the rudest hand: the flourishing state of the plant, prevents any necessity for hand-weeding, as all noxious growth is smothered beneath it. The third year, the horse hoeing should still be continued, the crop is abundant, and the plant is so firmly rooted in the ground, that the heaviest harrows may be drawn over it in the spring, without injury.

Some years ago, the cultivation of this plant was attended to, but it has been of late most shamefully neglected. It is not so surprising that the common farmer should be reluctant to sacrifice the rent and charges of the first year, but it is astonishing, that men of fortune, enterprize, and experiment, should have abandoned this valuable production, which is equally suited to keep the beast in condition, for the dairy or for the market. Lucerne goes twice as far as cabbages in feeding bullocks, and it bears a much higher proportion of the nutricious quality on the comparison with turnips.

Of green lucerne, a large milch cow, will eat about 84lbs. weight in twenty-four hours, if more be given, the animal will probably waste it.—The only precaution necessary is, that it should be given the day after it is cut, not the same day, as in that case the animal is subject to swell. The butter produced by this food, is equal to any from cows fed in the best meadow.

It surprises me, that in the great variety of useful articles introdued in the eight volumes of your work, this subject should

have eluded the particular attention of your intelligent correspondent, and I particularly wish to see in some of your succeeding numbers, a few calculations on the actual produce on their own farms.

I am, Sir, yours, &c.

Huntingdon, 18th *Sept.* 1803. F. E.

FRENCH AGRICULTURE.

To the Editor of the Agricultural Magazine.

SIR,

PERHAPS no work has been ever published so beneficial in the great circle of human science, as the French Encyclopedia. It appeared in 22 volumes, of folio: four thousand two hundred copies were soon printed off, and it has become the common source from which almost all the learning of Europe is derived.

Under the article Grain, a quotation is made from a book of moderate merit, but which has become extremely scarce.—"The advantages and disadvantages of Great Britain, compared to France in respect to commerce." "If, says the Encyclopedia, (introducing this quotation,) we take a view of the provinces of France, we not only see a great quantity of land capable of the highest culture, wholly neglected, (en friche) but the land which is cultivated, produces little in proportion to its fertility, because the peasant is deprived of the resources necessary for the practice of his art."

"It is not without extreme pleasure, that I have observed in the government of France, this error in her system, the consequences of which, are so fatal to the designs of her ambition: but I cannot avoid reflecting with anxiety on the immense power and opulence that country would acquire, if she were to avail herself of the natural advantages resulting from the extent of her population, and the fertility of her soil."

While others, Mr. Editor, are endeavouring to reduce the comparative power of France by the force of arms, I would recommend to our peaceful farmers, to increase the wealth of their country by the influence of the arts, by rendering every acre of the British ground abundantly productive, and thus by connecting the personal with the patriot feeling, conduce equally to individual and public happiness.

As I have noticed this great undertaking, in which the labours and talents of a thousand individuals are said to have been concerned, I will not omit to expose an error that has crept into the work, which has not wholly escaped the attentions of the historical critic.

"The English," say they "have often experienced a scarcity of grain which has been advantageous to us by the freedom

established in the commerce of this article in the reigns of Henry the fourth, Louis the thirteenth, and in the earlier part of the time of his immediate successor."

I must contradict this statement. In 1598, under Henry the fourth, the exportation of grain, was expressly forbidden, and the prohibition was continued through the whole of the time of Louis the thirteenth, and during the 71 years of the protracted reign of Louis the fourteenth. To obtain the privileges of exportation, during all this period it was necessary to apply to the council of state, which made no determination, but referred the petition uniformly to the government of the province from which the application was made. It was not until the year 1764, a short time before the accession of Louis the sixteenth, that the export of grain was thrown open, with some necessary restrictions for years of infertility.

I shall conclude this paper, with merely recommending the perusal of the "Enquiry into the Nature and Causes of the Wealth of Nations;" to those who wish to understand the merits of the important question connected with this subject.*

Yours, &c.

Soho Square, Sept. 1, 1803. ANTIGALLICUS.

* Adam Smith, vol. ii. p. 243. see Digression concerning the corn trade and corn laws.

ON SUPERFICIAL DRAINING.

To the Editor of the Agricultural Magazine.

SIR,

EVERY experimental farmer is acquainted with the Mole Plough, and with the ponderous Drain Plough, which has so long been deposited in the room of exhibition of the society for the encouragement of Arts, Manufactures, and Commerce. These immense machines can only be drawn on land of an ordinary consistency, by chains of great strength, and the combined power of eight or ten strong horses, which are accustomed to a dead pull, and will not therefore counteract each other. I am not disposed to question the merit of the former, but the utility of the latter is completely exploded, and the society to which I have alluded, would do wisely to exclude it from their collection, as well as all other implements, that from repeated and judicious experiments, have been proved to be useless, that sufficient space may be afforded for the progressive improvements in the implements of agriculture.

The principal intention of this paper, is to point out at the season, when the winter is commencing; a means of cheaply draining pasture land, by which any farmer may lay dry during the wet months, a hundred acres a day with two com-

mon ploughs, having two horses to each of them, or fifty acres with a single plough.

At the lower part of each field, through the whole length, about a rod from the ditch, a deep furrow should be opened, and perhaps it would be convenient to go twice over it with the same plough, to increase the depth to about nine inches.

With this common drain, other drains of about the depth of six inches must communicate; these may be made with the plough, with great convenience, at the time when the land is neither very wet nor very dry, and they must not be at right angles with the principal drain, but in general must form more or less acute angles, according to the shape and level of the field.

In ploughing these auxiliary drains in wet weather, the sod will in general be found to return into the furrow; in very dry weather, the ground will be difficult to penetrate, and the surface of the drain will not be even and regular, so that neither a very wet or very dry time must be chosen. All these sur-drains, must be ploughed so that the sod be turned the same way in each of them, and the ploughman must commence at the higher part of the field, and descend to the lower. It is usually right to form them as exactly parallel as can be easily executed, and perhaps the distance of three rods will be sufficient, unless the land be very wet and poachy in winter, and in that case two rods distance between the parallells will be found more effectual.

It will not be always necessary that these descending furrows should communicate with the principal or leading furrow we first described: the preservation of the parallel line, will frequently require short furrows, which may be carried into a permanent ditch on the side of the field, and often in boggy parts, it will be found convenient to cut with the plough small cross drains, thus effecting a channel of communication between two or more of these descending drains.

To avoid circuity in our description, we must observe, that where inequalities of surface in the same field require it, the intelligent farmer will examine the position of his land, and will apply those common principles in the art of draining with which few persons accustomed to tillage are unacquainted.

The next consideration is, what should be done with the sod which is turned up in these intersections of the field? It may be disposed of in two ways. Those farmers who consider their land would be disfigured by such incisions with the plough, may turn the sod back again in the spring with the spade, and the surface of these channels will rarely be found less productive than the rest of the field, if the sod be covered in with care, as soon as no inconvenience is apprehended from the wet season. Another method is to divide

the sod into lengths of about eighteen inches, with the spade, and toss it into a cart which may be unloaded at the field gate, or along the side of the field; and these mixed with quick lime, with the assistance of the frost of the ensuing winter, will form an excellent dressing for the land in the spring, the precaution of turning it being resorted to as usual at the proper time.

In the latter method little or no loss of land will accrue, as natural grasses will shoot up early in the spring. The following winter the same process may be repeated, and no further trouble will be necessary with respect to the position of the drains, as, whether the sod be turned back or be removed for compost, the direction of the channel will be sufficiently obvious.

The experiments that are usually recommended are only suited to large fortunes, and scientific agriculturists; the plan here proposed has been adopted by the writer over the extent of 150 acres, where the practice of land-ditching had been neglected. The expence of land-ditching in the cheapest counties, and under the most favourable circumstances, amount to one pound sterling an acre, and sometimes will exceed three pounds an acre. The poor farmer is seldom capable of enduring this charge, but by the expedient here proposed, he will be enabled to derive almost all the advantages of land-ditches, at a very small expence of labour, to be performed at the time when the horses of his team would be disengaged after the business of the winter sowing is concluded.

I am yours, &c.

Okeham, Sept. 3, 1803. A LITTLE FARMER.

P. S. I have been given to understand by a letter I have seen from Mr. Thomas Bury, Agent to the Duke of Bridgwater, that at Broughton, near Manchester, the same method of sur-draining has been practiced with success in "considerable quantities of stiff clay, pasture, and meadow land."

MR. SAUNDERS's METHOD OF REARING AND FEEDING PIGS.

To the Editor of the Agricultural Magazine.

Sir,

PERMIT me to convey my best acknowledgments for the very flattering reception and countenance you offered to Viator's communications, in the Fortieth Number of your valuable Magazine, relative to my new mode of rearing and feeding Pigs. You are pleased, in the most handsome manner, to express yourself as follows:

"Viator's account of Mr. Saunders's method of rearing and

feeding pigs, deserves our best thanks, and we flatter ourselves that he has enabled us to lay before our readers a subject, which, for its novelty and importance to the public, cannot be exceeded." In communicating an opinion that the discovery which I claim peculiarly as my own, (for I do not know of any one who has hitherto pursued the same mode) is most essentially important to the public, I hope I shall stand acquitted of arrogance. If the plan I CAN POINT OUT of rearing and feeding pigs, should be generally acted upon, it is my belief that it would reduce the price of butcher's meat, of every description, one third at least of its present value. For, Sir, I consider, such is the prolific nature of pigs, that their increase throughout the kingdom, might, by this means alone, be extended within a period of *two* years, in a *tenfold* degree beyond what they are at present; and prodigious as such an increase would be, they might certainly be maintained at the low rate of one penny a head per day:

In an *Agricultural* point of view, the discovery is most important; for an immense quantity of *animal manure*, of the first proof and quality, might be constantly raised; and to dwell upon the benefits that would hence universally arise, by drawing an amazingly increased, nay the highest possible produce, from the land, must be superfluous.

But it is difficult to foresee, or to calculate, upon all the advantages that would ultimately arise to the community, (I ought, perhaps to say to the world at large) if my discovery were acted upon to the extent that my wishes ardently lead me to hope it one day will.

It might create for millions an ample and unlooked-for sustenance, and, in its consequences, might tend to increase the population of the globe. Notwithstanding which, it might remove, in future, not only the actual visitation of famines, so afflicting in their nature, and so desolating to the human species; but the bare apprehensions of them, and by these means, add infinitely to the happiness of mankind. It might create inexhaustible stores, by various ways, to the national wealth. It were needless, however, to dwell upon these particulars, or to offer any of the numerous arguments I might adduce to manifest the almost unlimited utility of the discovery.

I regret that I have not the pleasure of knowing even the *name* of the Gentleman who, through the medium of your Magazine, has so handsomely introduced to the notice of the community the fact of the discovery.

This Gentleman is somewhat incorrect in certain of the particulars he has spoken to; he is, however, correct when he notices my assertion that "I can maintain any number of pigs, taking large and small together, at the very low rate of

one penny a head per day," and the public I am confident might lessen that sum. At the same time, perhaps the value of the discovery does not so much consist in the cheapness of the mode in which the pigs may be maintained, as it does in the prodigious increase of numbers that may hence be constantly and universally raised; thereby adding infinitely to the stock, both of *animal manure* and of *animal food:* articles unquestionably of the highest importance to man.

But, Sir, it is become a subject of very general remark in this neighbourhood, that in the event of my communicating to the public my mode of rearing and feeding pigs, (and I have been earnestly sollicited so to do,) that I ought not only to be re-imbursed the expences I have sustained in partly carrying the plan I had allotted to myself into execution, but that I am intitled to a further claim upon the generosity of the public, in being the author and communicator of a discovery so extensively valuable and important.

I lament that my pecuniary resources will not enable me, consistently with prudence, for the present, gratuitously to offer the secret to the public; at the same time if it be for my country's good, (and of which I cannot entertain a particle of doubt,) and my revered King and Country should demand it of me, I will engage to disclose it at a day's notice, trusting to their accustomed liberality for any renumeration of services they in their wisdom and generosity may think proper to make me. And, really considering that we are again embarked in war, which much induce the scarcity and high price of provisions, of every denomination, to the inconvenience of all classes of people, I feel myself called upon by every tie of duty, of humanity, and of honourable feeling, to make an *immediate* disclosure of the discovery. In justice, however, to myself, I must add, that till very recently I never looked for any other return of services than what my individual exertions might hold out to me; but I now consider that in regarding individual exertion, so far from benefiting I might essentially *sacrifice* the public interests, by procrastinating the period of disclosure. And this is the leading motive that has urged me to take the opportunity, through your excellent and extensively-circulated Magazine, of expressing my sentiments upon the subject, that if such should be the will of the public, they may institute an enquiry into the truth of my assertions, and in appreciating the merits of the discovery and communication, they may act as in their wisdom they may think best.

I am, Sir,

Your very obedient servant,

Stroud, Sept. 20. 1803. JOHN SAUNDERS.

To the Editor of the Agricultural Magazine.

SIR, *Sept.* 17. 1803.

ON the 12th instant, I sent you a paper on restrictive covenants and tithes; since which I have received your number for the last month, in which I observe, that two able contributors to your magazine, are seriously engaged in discussing the important question, whether tithes are prejudicial to agriculture and the interests of the country. I also observe that one of these gentlemen recommends to your correspondents, the perusal of the Rev. Mr. Howlet's pamphlet, in which, he says, that author incontrovertibly proves the truth of this assertion, "That tithes, so far from being prejudicial, are actually, in an high degree, beneficial to agriculture."*— Anxious to defend the institutions of this free and enlightened country against unmerited obloquy, I ventured, in opposition to the ideas of many respectable agriculturists, to whose opinions in general, I bow with the utmost deference, to state (in my letter of the 12th instant,) that tithes are not so prejudicial in their operation, as to prevent, in any great degree, the conversion of old and unproductive pastures and meadows into tillage. In going thus far, I imagined, that I had proceeded to as great a length as the ground was tenable; I now find, however, that the Rev. Gentlemen in question, goes much further, and that we have a *prospect* of enjoying the pleasing reflection, that our legislators have not been so inattentive to the best interests of their country as many critics have represented. But I must still be allowed to defend my former opinions, 'till I receive a *new light* from the arguments and the "facts" alluded to by Agricola Norfolciensis; and also to say, *the arguments and "facts" must be very strong, and well calculated to obliterate deep impressions, that will cause me to swerve from these opinions.* With a view of illustrating them, I beg leave to do what I had not leisure to do when I last wrote to you, to subjoin some pretty long calculations.

Many of our old pastures and meadows may be broken up by a plough and two good horses, driven by the ploughman; but where the land is covered with much coarse, rough and unprofitable herbage, or where apprehensions are entertained of the depredations of the grub, I conceive that the most advantageous mode would be to pare and burn, and that the Debtor and Creditor's account will stand (supposing the field to contain twenty acres of good land,) as under.

* I did not before conceive that any of the defenders of the tithe system, had attempted more than merely to prove that it was not detrimental to agriculture.

First Year.

		£.	s.	d.
Dr.	To paring, burning and spreading ashes, 24s.* per acre, on 20 acres -	24	0	0
	Ploughing and harrowing 20 acres, at 8s. per acre - -	8	0	0
	Turnip seed and sowing - -	2	5	0
	Hoeing turnips - - -	5	0	0
	Rent 37s. 6d. per annnum per acre	37	10	0
		76	15	0

		£.	s.	d.
Cr.	By turnips at 5l. 5s. 0d.	105	0	0
	Deduct tithe - -	10	10	0
	From which -	94	10	0
	Take expences as above	76	15	0
	† First year's profit -	17	15	0

Second Year.

		£.	s.	d.
Dr.	To ploughing and harrowing, supposing a considerable part to receive two ploughing before seed time, 12s. per acre	12	0	0
	Seed, supposing most of the land to be sown with wheat, and the remainder with barley and oats. Partly drilled and partly sown broadcast. Wheat 6s. barley 3s. and oats 2s. per Winchester bushel - - - - -	9	5	0
	Horse hoeing, weeding, &c. -	1	0	0
	Rent 37l. 10s. 0d. Harvesting 14l. 0s. 0d.	51	10	0
		73	15	0

		£.	s.	d.
Cr.	By crop of wheat, barley, and oats at the above prices, supposing sheep to have been folded upon the turnips in consuming the whole. - - -	160	0	0
	Deduct tithe - -	16	0	0
	From which - -	144	0	0
	Take expences as above -	73	15	0
	Second year's profit -	70	5	0

* I am aware that in some districts, this price will be thought too high, and that in others it will be deemed too low. It must be recollected, however, that in calculations of this nature, neither the prices of corn nor those of labour, &c. can be exactly adapted to the local circumstances of all parts of an extensive country.

† I include no expences for terms, &c. &c. which are common to both freshand old tillage land.

Third Year.

		£.	s.	d.
Dr.	To two ploughings, and drilling, for beans, including two horse hoeings, &c. -	21	6	8
	Seed sown with intervals of 28 inches -	9	0	0
	Rent 37l. 10s. 0d. Harrowing 8l. 0s. 0d.	45	10	0
		75	16	8
	Topping the beans, to prevent too great a luxuriance, and promote fructification	1	10	0
		77	6	8

Cr.	By crop of beans at 4s. 6d. per bushel - - -	135	0	0			
	Deduct tithe - -	13	10	0			
	From which - -	121	10	0			
	Take expences as above	77	6	8			
	Third year's profit -	44	3	4			

With twenty acres of old tillage land *of an equal quality*, managed and manured in the general mode, viz. two crops after a fallowing, or fallow crops; the Debtor and Creditor account will, I conceive, stand thus:

First Year.

		£.	s.	d.	£.	s.	d.
Dr.	To ploughing, harrowing, and clearing the fallow ground, and that for the fallow crops, 30s. per acre - - -				30	0	0
	Wheat, to sow on sixteen acres of land (six acres after drilled beans and turnips) - - - - - -				12	0	0
	Seed, beans and turnip seed - -				3	9	0
	Lime and carriage thereof, 8s. per load				22	8	0
	Carting dung - - -				6	0	0
	Rent 30l. 0s. 0d. Harvesting four acres of beans 1l. 12s. 0d. - -				31	12	0
	Hoeing six acres of turnips and four ditto of beans - - -				3	16	0
					109	5	0
Cr.	By six acres of turnips and four ditto of beans - -	48	0	0			
	Ten ditto in bare fallow*	0	0	0			
		48	0	0			
	Deduct tithe - - -	4	16	0			
		43	4	0	43	4	0
	First year's expence				66	1	0

* Here it may be asked why I do not calculate on a drilled leguminous crop upon the whole twenty acres, as in the case of recent land. I answer

	Second Year.	£.	s.	d.
Dr.	To seed barley for four acres, 9s. per acre	1	16	0
	Weeding and hoeing - - -	1	0	0
	Harvesting 12s. per acre - -	12	0	0
	Rent 30l. 0s. 0d. - - -	30	0	0
	First year's expences as above (balanced)	66	1	0
		110	17	0

Cr.	By second year's crop, sixteen acres of wheat, 6s. per bushel - -	124	16	0		
	Ditto, four ditto of barley 3s. per bushel -	21	12	0		
		146	8	0		
	Deduct tithe - -	14	12	9		
		131	15	3		
	Deduct expences for two years as above - - -	110	17	0		
	Profit at the end of the second year - -	20	18	3		
Dr.	To ploughing and harrowing 7s. 6d. -				7	10 0
	Seed, oats and peas - - -				11	10 0
	Horse hoeing and weeding - -				1	16 0
	Harvesting - - - - -				10	15 0
	Rent - - - - - -				30	0 0
					61	11 0
Cr.	Third year's produce, oats and peas* - -	86	0	0		
	Deduct tithe - -	8	12	0		
	From which - -	77	8	0		
	Take expences as above	61	11	0		
	Third year's profit -	15	17	0		

In calculating the expence of *improving*, viz. rendering waste and poor soils productive, I shall estimate upon twenty acres of a *middling* quality, (in the state which our ancestors

that old tillage land in general, notwithstanding what a Hertfordshire farmer says of my Scotish brethren relative to summer fallows, will not afford more than *one half* for such husbandry, unless beans a foot long, and much less wheat than can be obtained after a bare fallow, would give satisfaction.

* In all these calculations the seed and produce are reckoned at 6s. per bushel for wheat, 3s ditto for barley, and 2s. ditto for oats. Perhaps the seed should have been reckoned a little higher.

have left vast tracts in many parts of the country,) bearing evident marks of the plough, with many bawlks of stones in them, and requiring draining. Such lands generally lye upon the skirts of enclosed and improved districts; and are occupied by breeders of sheep and cattle, affording to the tithe holder about 4d. to 6d.; and to the owners a rent of 5s. or 6s. an acre. Here winning out the stones, draining, and inclosing, are, obviously, the first steps toward substantial meliorations. Let us suppose that the proprietor of the soil pays the expence of *building* the new *dike*, (which I am apprehensive is not generally done by the landlord, and that it is built entirely, or mostly, with stones, (which in such situations are preferred to earth dikes, the latter requiring expensive and yearly fencing, &c.) the expenditure of the tenant previous to the introduction of the plough, for winning stones, draining, carriage, &c. &c. will amount, on a moderate computation

				£.	s.	d.
To three guineas per acre, or	-	-		63	0	0
Then, Ploughing the first time* 18s. per acre				18	0	0
Seed oats fifteen quarters, at 16s. per qr.				12	0	0
Harrowing, 4s. 6d. per acre	-	-		4	10	0
Harvesting and weeding	-	-		10	10	0
				108	0	0
Cr. By first crop of oats 1½ qr. per acre, 16s. per qr.	-	24	0 0			
Deduct tithe	- - -	2	8 0			
		21	12 0	21	12	0
First year's expences				86	8	0
Second Year.						
Dr. To ploughing, harrowing, gathering, burning, cleaning, and preparing the field for turnips, 40s. per acre	-			40	0	0
Hoeing turnips, 9s. per acre	-	-		9	0	0
Lime, including carriage, spreading, &c.				50	0	0
				99	0	0
Cr. By second year's crop (turnips,) 40s. per acre	- -	40	0 0			
Deduct tithe	- -	4	0 0			
		36	0 0	36	0	0
Second year's expence	-	-		63	0	0

* Most of such lands are either too stoney or too thin for paring and burning.

Third Year.

Dr.	To ploughing and harrowing, 9s. per acre				9	0 0
	Seed Oats - - -				12	0 0
	Grass Seeds* 20s. per acre		-		20	0 0
	Rolling and Stoning -		-		2	10 0
					43	10 0
Cr.	By crop of oats 4l. per acre	80	0	0		
	Deduct tithe - -	8	0	0		
	From which - -	72	0	0		
	Take expences as above	43	10	0		
	Profit the third year -	28	10	0		

From these calculations (which I flatter myself the greatest number of practical agriculturists will deem pretty just,) it appears that from the cultivation of but a small quantity of *fresh* soil, a profit may be reaped of 95*l.* 8*s.* 1*d.* more than can be obtained from the same quantity of old tillage land of equal quality, (at four fifths of the rent,) in the same space of time; and that in improving the same quantity of waste land of a middling quality, the necessary expenditure will, in an equal time, exceed the amount of its produce, by about 139*l.* including three years rent *omitted in the account*. It is evident then, that in the first case, a tenant can better afford to pay tithe, than in the second, and consequently, that that tax, will not prevent his breaking up old, and unproductive (but *naturally* rich) grass land. It may be contended that when these grounds are continued under the system of convertible husbandry, the profit from them will be less than in the above case. Perhaps it may be so, *but it is of vast importance for landholders to recollect that this is by no means the consequence of their soil being deteriorated,* (for *that* under proper management, will unquestionably be rendered better,) but of the necessity for the application of more expensive manure than ashes obtained by paring and burning—the only kind I have assigned them for three years, immediately after their being converted into tillage—which ashes, though not so *permanently* beneficial as lime, dung, &c. contain what is highly advantageous in bringing into action the productive powers of the soil: namely, alkaline salts, and the carbonaceous principle. This diminution of profit, however, arising merely from the difference in the expence of obtaining proper manure, is in most situations, not very material, and easily calculated by the practical farmer. The new field, if incumbent on a tolerably dry bottom, is now fit for convertible husbandry;

* Such land should not be returned to grass till the turf and vegetable matter be sufficiently reduced.

under which system and a proper application of manures, almost every crop may reasonably be estimated at five pound an acre,* the titheholder, therefore, will receive ten pound per annum, or ten shillings per acre from it; which, with the landlord's rent, will amount to sixteen shillings per acre. The annuity necessary to liquidate the above 139*l.* in nine years,† will, I think, be nearly twenty pounds,‡ and to avoid fractions I will take it at that sum, or twenty shillings per acre per annum. This field, therefore, will now cost the tenant about thirty six shillings per acre, and it requires but a small share of practical knowledge to prove, that, *on such lands, at such a rent,* three years expences are generally about equal to three years produce, or fifteen pound per acre; where then, is the excitement to improvement? Set aside tithes, however, or reduce them to the original sixpence per acre, and the tenant will enjoy a considerable renumeration for his skill, industry and enterprize.—Upon this important subject, Mr. Editor, I feel inclined to say a good deal more, and to animadvert upon the lesson of Agricola Norfolciensis; for the present, however, I shall leave that task to your more able Correspondent, Mr. Middleton. I cannot, however, dismiss the subject, without remarking that in discussing the effects of tithes, the clergy are too frequently introduced as the *sole* proprietor, whereas the lay impropriators in many districts, are the principal titheholders, and undoubtedly the most difficult to agree with, and the greatest enemies to commutations.

Yours, &c.

AGRICOLA NORTHUMBRIENSIS.

P. S. It is almost unnecessary to observe that when I estimate three years expences on newly improved lands, (held under a rent of 30*s.* per acre) at 15*l.* an acre, or the amount of its produce for that space of time, I have in view three years in a state of tillage with proper manuring, &c.—Here the advocates for tithes will say, *but under convertible husbandry, the land will be one, two, and three years in grass, when, though the value of its produce may be diminished, the expences will be so small as to leave a profit.* This, however, will be very small and confined to the first year's crop: of hay

* This is confirmed by many experiments in various parts of the country; and by my own practice on many scores of acres in this farm. Happily, however, it is not subject to tithe.

† This brings us to the expiration of a term of thirteen years from the entry of the tenant, who could not, *the first spring*, commence such an improvement, and I must observe that this term is longer than that of four fifths of English leases.

‡ Reckoning compound interest at five per cent per annum—five per cent however, is too little, that can be obtained without the trouble and risk of engaging in the hazardous business of improving land, or without being concerned in any business whatever.

and aftermath, during the second and third years, none can be expected. And besides, I must remind these gentlemen that five per cent per annum is too small an interest, that thirteen years is a longer term than most English landlords grant their tenants, and that if the endurance of the lease be shortened, we must increase the above annuity, or, (which is the same thing) the rent of the land.

THE ERRORS OF WRITERS ON THE SUBJECT OF FARMING.

To the Editor of the Agricultural Magazine.

SIR,

THE letters and papers on agriculture, &c. selected from the correspondence of the Bath and West of England Society, published in nine volumes, have been properly compressed in a late publication into the compass of two.

I have read with some patience and with more pleasure the voluminous productions on the same subject, from the collection of Mr. Arthur Young, but considering the numerous papers in that work which have become obsolete and useless, the various tales of experimentalists who have been disappointed in their projects, and the political farrago which of late years has been introduced into that publication, I should be very happy to see the thirty or forty volumes to which it extends, reduced to three or four. I am confident an intelligent writer on agricultural subjects could contract the work into this compass, and I hope to see it effected by some competent person.

It is the misfortune of agriculture, that the undeserved contempt to which it has been exposed has prevented men of genius from comparing its theory and its practice; and hence a tribe of writers have intruded themselves on the notice of the public (not only in the volumes of Mr. Young, but in every other receptacle of farming intelligence) who have never been able to comprehend their own ideas, much less to transfer them on the public mind. I have seen with great satisfaction, that in your periodical production you have at least avoided the vulgar error so common with Mr. Young, of crouding your pages with political disquisitions: if that gentleman had been at all aware of the ridicule with which his state papers are treated at the meetings held on our country market days, he would not so freely have blended potatoes with parliaments, butter with banking, and split peas with parochial guilds. We are inclined to address these intruders on rustic business in the language of a celebrated foreigner.

"Heureux Parisiens, jonissez de nos travaux, et jugez de l'opera comique!"

A STUDENT IN AGRICULTURE.

Buckingham, August 10, 1803.

ON THE ADVANTAGE OF A FARMER'S UNDERSTANDING SO MUCH OF BOTANY, AS TO KNOW WHAT IS MEANT BY THE SEXUAL SYSTEM OF PLANTS.

To the Editor of the Agricultural Magazine.

SIR,

I LATELY sent you remarks on the advantage accruing to a farmer, by his understanding the proper cultivation of a Kitchen-garden, and also recommended him to be so much acquainted with Botany, as to understand what is meant by the sexual system of plants.

I now have the oportunity of describing a circumstance that has just happened to a farmer, for want of that knowledge, which will prove of serious consequence to him, and probably be the occasion of his losing some hundred pounds, especially if the affair be not amicably settled, without having recourse to law.

A London seedsman has this summer sent to a nursery-man at Leicester, a large quantity of seed, warranted to be the true Swedish turnip-seed; he has sold it as such, and upwards of one hundred acres of land have been sown with it.

It proves to be a spurious sort, and the plants partake of the nature of Rape or Cole, and there is not the least appearance of the root forming a turnip. It appears to have been occasioned by the turnips having been planted within the reach of the rape or cole, and impregnating the flowers of the turnip with their farina, and the consequence is that the crop of turnips is spoiled and lost.

The season is now too far advanced to sow more seed, and those farmers who trusted to it, will be disappointed in not having any turnips for their sheep, and it also happens that the crops of turnips in general are very indifferent, many persons having been obliged to sow two or three times.

The farmers are most of them coming to the nurseryman with their complaints, and want to be reimbursed for their loss and disappointment; some rating their damages and loss at several guineas per acre, and the grower of the seed will be obliged to compensate those persons who bought it, for their loss.

A similar circumstance, I read a few months ago, of a farmer having been obliged to pay several hundred pounds, for selling some turnip seed different from what he sold it for. On the trial it was proved that it was not designedly done, but ignorantly, by raising the seed too near other sorts, and their farina intermixing.

Two years ago, some cauliflower seed was sent here from London, which proved to have been impregnated with green bracoli or cabbage. From that seed not one true white cauli

flower was produced, and many gentlemen had not a cauliflower fit to eat, but a number of loose spikes of flowers of a pale green colour.

From these proofs I strongly recommend, that farmers should pay attention to not planting turnips and cabbages intended to raise seed from them, in the neighbourhood of each other.

All the different varieties of cabbages, boorcole, brocoli, cauliflowers, cabbage-turnip, turnip-rooted cabbage, rape, cole and turnips belong to the same genus of plants, under the article Brassica, and will intermix with each other, and produce spurious sorts.

If the farmers would also raise their own seeds, it would save them money, and they would be certain of having a true sort, if managed with proper care, by not planting two sorts too near together.

In raising Swedish turnip-seed, no white, but the deepest coloured ones should be taken, which is easily known by paring a bit of the skin off those of the most regular shape; and with only one stem. By following these directions, you will have a true sort, and if you raise more than you want, you may readily dispose of it, and the sale will pay you well for your trouble.

The farmers here were a long time before they were reconciled to them, but at length they have been induced to sow them, being convinced of their superiority, they not being destroyed by the frost, and giving the mutton a finer flavor.—Though they are called Swedish, their native country is Lapland.

Linnæus gives the following description of it, "This plant originally from Lapland, our farmers have found of more benefit than all the other winter plants together; its greatest property is, resisting the severest frost, so that while the soil may be frozen a yard deep, this root is in no degree affected. It is a plant easily cultivated, and produces a luxuriant crop.—The roots will frequently weigh nine pounds. It is none of the least recommendations of this plant, that it is as good a preparation for corn, as a fallow of mere ploughing."

Leicester, Sept. 22, 1803. R. WESTON.

A COMPARISON BETWEEN THE UTILITY OF THE OX AND THE HORSE IN TILLAGE, BY A FRENCH WRITER.

To the Editor of the Agricultural Magazine.

SIR,

THE following curious paper occurs in the 21st volume, 76th page, of the Genevese edition of the works of Voltaire, which I have sent to you because the subject is discussed in two papers introduced into your last number.

"Farming is divided into two classes, culture on a large and on a small scale; the latter which has extended over the far greater portion of the territories of France, is considered as unproductive, and as an ineffectual struggle of the indigent against the pressure of necessity."

"This does not appear to me correct, the culture by horses is not more advantageous than by oxen. The practice of modern times in the use of oxen, is perfectly consistent with the ancient system. In Hesiod, Xenophon, Virgil, and Columella we never see horses engaged in the business of tillage. Oxen would never have been brought into disgrace if they had not been universally employed in France by the poorest order of farmers, and as this class of cultivators can deposit nothing valuable in the earth, they can extract nothing out of it."

"The labours of oxen are as profitable as those of horses. If the former are less active, they continue longer on the field: they are supported at a smaller expence, they incur no charge for shoeing:* their harness is not expensive: as their vigour decays they are yet fit for the butcher, and thus both their life and death are profitable, which cannot be said of the horse."

"Horses are only capable of being used for agricultural purposes in those parts of France where oats, and similar provender is cheap. For these obvious reasons four or five times more land under tillage, is indebted to the labour of the ox, than to the employment of the horse."

It is nearly half a century since these strictures were made by this intelligent observer, but as common sense is the same in every age and nation, most of them will be found applicable to our own time, and to our own country.

Sutton, Aug. 20, 1803. H. G.

* Since the observations of Voltaire were made, much advantage has been found to be derived from the art of defending the foot of this animal from exterior injury. E.

ON PARING AND BURNING.

To the Editor of the Agricultural Magazine.

Sir,

I Observe in your publication of last month some observations from the authority of Colonel St. Leger, of Yorkshire, on the quantity of ashes to be obtained from paring and burning. The proportion he produced was two thousand four hundred bushels from one acre.

The quantity is greatly varied from the circumstances under which the ignition proceeds, and no useful conclusion can be

drawn from this experiment, as we are not informed of the analysis of these ashes.

This mode of improvement by paring and burning should not be adopted on every species of soil. Clays and loams are hardened and not mended by the process, and in general poor soils that have few vegetables growing in them will receive the least advantage. There are but two objects which the intelligent farmer proposes to himself in this method.

First, It converts vegetables and their roots into coal.

Secondly, It destroys the old sickly roots, and affords space for the more vigorous.

With respect to the first, the intention will be wholly disappointed if a violent active fire be employed with the accession of air, so as to produce a white heat: by this method all the valuable ingredients are sublimed and dissipated, and an unproductive ash only remains. A slow smothering fire, shut out as much as possible from the external air, will leave a valuable and nutricious aliment for the future improvement of the land.

With regard to the second, to fill up the ample room which is thus procured in the soil to the best advantage, fresh seed should be committed to the ground.

When these considerations are fitly attended to, the popular prejudice will be removed respecting the diminution of the soil, and paring and burning will be found one of the most valuable expedients for restoring defective vegetation.

I am, Sir, yours, &c.

B. A.

ANALYSIS OF MANURES.

To the Editor of the Agricultural Magazine.

Sir,

AT this time when the enquiries of the diligent chemist are so usefully and extensively applied to promote the wishes of the laborious farmer, the analysis of some of the common and valuable manures from the authority of Buckert will perhaps not be unacceptable in your periodical work,

105 lb. Fresh cow dung contains:

Coal . . .	3.75
Calx and Magnesia	1. 2
Argil . . .	0.15
Silex . . .	2. 4
Fixed Salts . .	0. 6

135 lb. Rotten cow dung contains:

Heavy inflamable air .	cubic inches	1360
Fixed Air		120

Water	lb.	81 . 0
Coal		10 . 0
Calx and Magnesia		3 . 0
Argil		0 . 6
Silex		5 . 0
Vol. Alk		0 . 65
Gyps		0 . 9

105 lb Fresh horse dung contains:

Water	lb.	88 . 0
Coal		10 . 2
Calx and Magnesia		1 . 5
Argil		0 . 5
Silex		3 . 0
Fixed Salts		0 . 21

105 lb. Earth resulting from rotten horse dung.*

Heavy inflammable air	cubic inches	1 . 64
Fixed Air		1 . 0
Water and Oil	lb.	38 . 15
Coal		18 . 75
Calx and Magnesia		6 . 2
Argil		1 . 5
Silex		23 . 43

105 lb. Sheep's dung contains:

Coal	lb.	25 . 0
Calx		9 . 28
Magnesia		1 . 0
Argil		0 . 6
Silex		0 . 29
Fixed Salts		0 . 72

105 lb. Soap Boiler's waste contains:

Calx	lb.	57 . 0
Magnesia		11 . 0
Argil		6 . 0
Silex		21 . 0

Nothing could be more material to the improvement of the country than the discovery of the component parts of the manures employed. Whoever is accustomed to watch the labours of the field will have seen how much industry has been not only useless, but pernicious. Yet when the food of plants, and nature of the soil, which is to administer that food are correctly ascertained, the fatigue of exertion will be sustained with patience because it will be productive.

Mr. Ruckert has not confined himself to the analysis of manures. In order to determine the coincidence between the cause and effect, between the manure employed and the vegetable produced, he has ascertained the ingredients of the following species of produce. To the analysis we attach his own figures, excepting that the calcareous and muriatic principles

are included under the same head, as the small quantity contained of the latter does not deserve the trouble of separation.

One hundred parts of the lixiviated ashes of

	Silex.	Calx and Muriate.	Argil.
Wheat	48 parts.	37	15
Oats	68	26	6
Barley	69	16	15
Bean	65	25	10
Rye	63	21	16
Potatoes	4	66	30
Red Clover	37	33	30

As these examinations tend immediately to establish the fundamental principles on which all agricultural improvements must depend, I hope they will not be thought unacceptable, and will be admitted to receive publicity through the medium of your ingenious work.

I am, Sir, yours, &c.

AN ESSEX FARMER.

ANSWER TO AGRICOLA NORTHUMBRIENSIS ON THE COMPARATIVE UTILITY OF OXEN AND HORSES IN AGRICULTURE.

To the Editor of the Agricultural Magazine.

SIR,

I Observe the arguments introduced by Agricola Northumbriensis in your last number, on the question of the preference of horses to oxen for tillage, and I remark an error in his mode of argument, which we have often too much occasion to notice. He founds his objection to the use of oxen, on his own experience, without exposing to us in what that experience consists. He must therefore pardon me, if I entirely separate from the enquiry not only his conjectures, but his experience where the particulars are not detailed. It is not enough to establish his position, if he should say that "the lands I occupy are more favourable than other lands to the working of oxen, yet were I bound to give them even, but generally the preference to horses, I am strongly of opinion that a great reduction of the rents which I could otherwise afford, would become indispensable," nor are we more satisfied when he proceeds in the same strain, "I am of opinion that the necessary number of oxen would consume so much of its produce *were they employed in labouring it*, that I could not afford to pay much, if any thing, more than one half the present rent."

The more extensive our observation, and the more correct our judgment, the greater our facility in proceeding from particulars to generals. The question of rent, or no rent, may be a very important one between this Northumberland farmer and his landlord, but is of very little consequence to the question

on the species of animal most adapted to agricultural pursuits; I shall, however, endeavour to separate from the extraneous matter the arguments he employs, and take them as nearly as I can in the order in which they appear in his letter.

The first observation I meet with of any importance occurs after half his labour in the composition of that letter is performed. It has been stated, that whatever may be the question of profit or loss with the individual, the use of oxen may be preferable to horses in a national point of view, because more human food will be by that means provided for the markets.

The only answer he makes to the observation, is "under the latter" (the use of horses) "I am persuaded that I send more human food to market than I could possibly do under the former," (the use of oxen.)

This mode of reasoning affords no facts on which any determination can be formed: it is a conjecture which may be right or wrong, but supplies no evidence. The northern farmer might have availed himself of a conclusive argument from the very terms of the question; for whatever tends to the loss of the individual farmers must conduce to the loss of the state, as the produce of the state is nothing but an aggregation of the profits of these individuals.

This correspondent of yours has two species of land, on which the ox it seems is equally pernicious; the one is wet and subject to be poached by that animal, the other is dry and injurious to his feet. If this farmer is able to shew that the ox is destructive of the purposes of farming on both wet and dry land, he will completely succeed in establishing his position. But he has rather undertaken too much: it is well known that the animal is employed with advantage on some of the most yielding soils of the kingdom, and that the improvements in the method of shoeing, with which your correspondent seems unacquainted, has guarded against the latter inconvenience, which indeed is very rarely experienced in the labour of tillage.

Your correspondent says, that he cannot conceive one pair of oxen out of fifty which with one man will perform near so much work as two horses, and so fond is he of this observation that within the space of a few paragraphs, he gives it in three different ways. First, it is, as we have stated, one pair of oxen; then it ascends to twenty pair of oxen; and in the third instance, he increases to twenty-five pair against an equal number of horses. At last, he avows his opinion, that "on an average it will require six oxen of four years old or upwards, with one man and a boy, to perform as much work as two good horses, driven with reins by the holder of a properly constructed

plough." But in that case, he introduces this singular privation, "keeping corn" he says "from the oxen."

It is impossible to bring the matter to any decision, by proceeding in this obscure way; all questions on agricultural improvements, are questions on profit and loss: whatever occasions the earth to produce the largest crop of useful vegetables, and to support the largest quantity of useful animals at the smallest expence, is the great desideratum in these enquiries.

Permit me to extract some remarks from an experienced and intelligent farmer, with whom Agricola Northumbriensis cannot be unacquainted.

"The comparative merits and demerits of beasts of labour depend on their cost, their keep, their work, and their value after working."

"A powerful handsome six year old ox may be purchased at a much lower price, than a powerful handsome six years old horse."

"Their keep depends in some measure on the prices of hay and corn, and on the size and voraciousness of the beasts to be fed. Taking into the account the unavoidable pilfering of carters, perhaps an ox may be kept at two thirds the expence of a large cart horse."

"In their work, it is unnecessary here to contend for superiority, but you may aspire at equality. Oxen are equally tractable, their strength, like that of the horse, depends upon their breed, age, make and proportions."

"Oxen, after they have worked five or six years, will obtain as much or more in the market than their first cost when turned to labour; whereas old cart horses are not worth their feed in winter, while they are on dry meat; and if knocked on the head produce nothing."

In addition to these remarks, I need only refer your readers to the observations on the utility of oxen in agriculture, introduced into the 325th page of your third volume; and to the introductory article of your last number, where a method of yoking is proposed, most suited to the anatomical structure of the animal, by which in the words of the writer, "the sublime and gigantic force with which he is endowed is rendered subservient to the important duties he has to perform for the supply of human subsistence."

As this letter is designedly confined to the day arguments on the comparative utility of the two species of animals noticed, you will not expect me, Sir, to follow your correspondent through the various situation to which he would lead us. He hurries from the field of industry to the office of the lawyer, and treats of the conditions of leases: from the desk of the attorney to the bureau of the politician, and descants on progressive population. From the apartment of the statesman,

he proceeds to the counting-house of the merchant, and discusses the subject of paper circulation. From this busy sphere of commercial duty, he hastens to the magnificent hall of the senate, and proposes new charges in the system of legislation.

I am a plain reasoner, and am little accustomed to circumvention and circumlocution; but whenever this gentleman will condescend to confine himself to insulated questions, ordinary subjects, and cold arguments, I shall have no objection to continuing with him the correspondence he has commenced in your useful miscellany.

I am, Sir, yours,

AGRICOLA MERIDIONALIS.

ON EXPERIMENTS.

(Continued from page 118.)

XL. ON TRANSPLANTING POTATOE TOPS.

By Mr. Elleray, near Manchester.

ON the 18th of May, 1772, finding some beds I had sown very early with onions to be a missing crop, I was induced to make the following experiment. The year before, I had set some potatoes in another part of my garden, in the common way; and as it is impossible but some will remain in the ground all winter, so I found a number of sprouts about three inches high, which I nipped off close to the ground, and transplanted them into the onion beds, without any further preparation, about a foot and a half asunder, in the same manner that cabbages and cauliflowers are planted. As the season became immediately very dry, I was obliged to give my plants a little water for four or five successive nights; after which they began to flourish, and had the appearance of a promising crop during all the summer. At the usual time, in October, I ordered them to be taken up; and for size, quantity, and quality, they exceeded all I ever had in the common way. Had the ground been fresh, properly manured and prepared, and the plants put down at a proper distance from each other, I am of opinion that the success would have been still greater. Cuttings from the full grown plant will take root in the same kindly manner, if gently watered when put down. Both these experiments are, however, but matters of curiosity.

XLI. ON NUTRITIVE LIME.

By A. Hunter, M. D

Take twenty-four bushels of slaked lime; train-oil foot, sixteen gallons. Mix these together, taking care that the lime be sufficiently cold before the oil is added. This quantity

is thought sufficient for an acre of winter or spring corn. It is intended to supply the place of rape-dust, and should be put upon the land in the same manner. It may also be recommended as a top-dressing for wheat in the spring; the earlier the better. From the few trials that have been made upon this compost, it appears to be possessed of considerable nutritive powers; but as nothing should be adopted as a truth in agriculture, which has not stood numerous trials, the above compost is recommended as an object worthy of future experiment. It is also recommended to gardeners as a top-dressing for all kinds of seeds, as it is presumed that it will prevent the mischiefs occasioned by insects. By the experiments of Mr. Townley, of Belfield, near Rochdale, the oil-compost is found to be of great use in raising large crops of onions. This nutritive lime being upon the same principles, and much easier of preparation, will probably answer the same purposes. It will here be proper to remark, that light soils are best managed by top-dressings: stiff lands require lime and plenty of rotten dung to break the cohesion of their particles. This distinction should be seriously attended to by the cultivators of land, who wish to enlarge their understandings by tracing effects up to their proper causes.

XLII. ON FEEDING HOGS WITH POTATOES.

By Mr. Charles Chaloner.

From an accurate experiment made last year, I dare venture to recommend baked potatoes as an excellent food for hogs. The pork produced by this food was equal to that from barley and beans; but at present I cannot exactly ascertain the comparative experiment with regard to expence; however, I am of opinion that roasted potatoes, considering the improvement of the hogs, is as cheap a food, if not cheaper, than can be given them. I roast my potatoes upon a kiln, similar to what is used by oat-meal shellers for drying their oats. The difference in expence between boiling and roasting the potatoes is prodigious, both with regard to the labour and fuel. A kiln that will cost 3l. will roast potatoes sufficient for the maintenance of more than 20 hogs; and one man will bestow all the necessary attendance upon them, and do other work besides. The action of the fire, by dissipating the crude juices that are contained in raw potatoes, reduces them into a state highly wholesome and nutritious. Boiling does this in part, but not so effectually. A potatoe roasted in the manner above described, partakes much of the nature of a chesnut, and perhaps is not greatly inferior to it.

XLIII. A COMPARISON BETWEEN RED AND WHITE WHEAT.

By Mr. E. Cleaver, of Nunnington, near York.

It is a mistaken notion in those who buy wheat for family use, to give the preference to the white sort, it being a demonstrable fact, that the red is considerably heavier. It is moreover of such a strong body, that provided you weigh 100 lb. of flour made from white wheat, and 100 lb. from red wheat, the latter by taking a greater quantity of water, will make a larger weight of bread. This circumstance is known to few, except bakers and corn-dealers, who, in many of the country markets, buy the red wheat at 8d. and sometimes 1s. per bushel under the price of the white and weaker kind.

XLIV. ON DIBBLING WHEAT.

By John Curzon, Esq.

It is now become very common in the county of Norfolk to dibble their wheat instead of drilling, or sowing it broad-cast. The advantages of this method are numerous. It secures a clean crop of excellent seed, and saves to the community an enormous quantity of wheat, that inevitably must have been consumed and lost in the common method. It besides finds employment for the women and children, at a time when their assistance is not required by the farmer for other purposes. Their labour is therefore a clear gain to the public. It has been objected, that if this method should become general, the farmer could not procure hands to put his work sufficiently forward. I readily grant that the villages could not sufficiently supply the necessary hands, but it should be considered, that, where work is certain, numbers of people are invited from towns and other remote distances. I need produce no arguments, after mentioning the facility with which hands are procured for the gathering saffron and hops. Previous to setting the wheat, the land must be ploughed and manured as for a crop of broad-cast grain. After harrowing it well, and smoothing the surface with a light roller, it is prepared for setting, which is performed by making holes with a kind of dibble used for peas, the man working backwards, and the women and children following, and dropping two or three grains of wheat into each hole. The dibbles are so contrived, that a man may, with one stroke of his foot, make three or four holes at once—the holes about seven inches asunder, and two inches deep. After the whole ground is set, a light harrow must be introduced to fill up the holes; and when the weeds advance, some turnip-hoers must be employed to stir the ground and cut down the weeds; after this, no further care is required till the harvest, when the farmer may be assured of a plentiful and clean crop, in reward for his extraordinary at-

tention. Two pecks of wheat will set an acre; the price of labour about eight shillings. It is now become a common practice to dibble wheat upon a clover lay, after a single ploughing.

XLV. ON POTATOES.

By Gilbert Crompton, Esq.

When potatoes are planted on land that has a disposition to too much moisture, especially when the summer is wet, it generally happens that the crop is injured by water standing in the furrows between the rows. In land so circumstanced, it is a judicious practice to plant the potatoes across the ridge, which will effectually prevent the water from injuring the crop by giving it a ready descent into the furrows that divide the lands.

XLVI. ON FATTING HOGS.

By the Earl of Egremont's Steward.

As there were some young hogs that we wanted to keep over the summer, seven of the largest were put up to fat on the 25th of February. They were fatted upon barley-meal, of which they had as much as they could eat; some days after, the observation of a particular circumstance suggested the following experiment. A hog, nearly of the same size as the seven, but who had not been put with them because they appeared to be rather larger, but without weighing them, was confined on the 4th of March, in a cage made of planks, of which one side was made to move with pegs, so as to fit exactly the size of the hog, with small holes at the bottom for the water to drain from him, and a door behind him to remove the soil.—The cage stood upon four feet, about a foot from the ground, and was made to confine the hog so closely, that he could only stand up to feed, and lie down upon his belly. He had only two bushels of barley meal, and the rest of his food was boiled potatoes. They were all killed on the 13th of April, and the weights were as follow, (8lb. to the stone.)

The hog in the cage, 13 st. 2lb. The other hogs, all of the same breed,

12st.	2lb.
12	3
11	2
11	4
11	4
11	2
12	2

The hog in the cage was weighed before he was put in; he then weighed, alive, 11st. 1lb. He was kept five weeks and five days, and then weighed, alive, 18st. 3lb. He eat two bushels of barley-meal, and about eight bushels of potatoes.—He was sulky for the two first days, and would eat nothing.

ENUMERATION OF PATENTS LATELY ENROLLED.

1803. *May* 10. ELIZABETH BELL, of Hampstead, Middlesex, Spinster; for a method of sweeping chimneys, and of constructing them in such a manner as to lessen the danger and inconvenience from fire and smoke.

——17. George Beaumont, of South Crossland, near Huddersfield, Yorkshire, and Walter Beaumont, of the same place, Manufacturers of woolen goods; for a mixture to be used in the preparation of sheep or lamb's wool, for various purposes.

——17. Joshua Green, of Banbury, Oxfordshire, Manufacturer; for a method of manufacturing corded and ribbed shags, or plushes, composed of different materials, on a principle entirely new.

——23. James Roche, of King-street, Holborn, Middlesex, Gentleman; for a medicine for the cure of the hooping cough.

——28. Chester Gould, of Red-Lion-street, Clerkenwell, Middlesex; for a glass on a new principle, to be used by mariners at sea, instead of the common sand-glasses, when heaving the log, for the purpose of ascertaining the ship's rate of sailing; and also for other uses, either on land or at sea.

——Thomas Fulcher, the elder, of Ipswich, Suffolk, Surveyor and Builder; for a water-proof composition, in imitation of Portland-stone, for stuccoing and washing new and old stone, and brick buildings; and for cementing the joints, and tucking and pointing all stone and brick works that require proof against water and damps.

June 7. John Gamble, of Leicester-square, Middlesex, Gentleman; for improvements on, and additions to, a machine for making paper in single sheets, without seams or joinings.

—— 10. John Randall Pecham, of White Lion-street, Clerkenwell, Middlesex, Watch-maker; for improvements on a lock to a musquet, fusee, carbine, fowling-piece, or pistol.

—— 14. James Fussell, of Mells, Somersetshire, Iron-manufacturer; for a method of working water-wheels, for raising of water, and in a great measure preventing water-wheels from being flooded, and other useful purposes.

—— 14. John Wood, of Manchester, Lancashire, Machine-maker; for improvements upon machines for spinning and reeling of cotton.

—— 14. James Thomson, o fthe city of Edinburgh, Bell-hanger; for improvements in the hanging of bells, window-curtains, window and other blinds.

June 14. John Harriott, of Wapping, Middlesex, and Edmund Cobb Hurry, of Gosport, Southampon, Esquires, and William Crispin, of Gosport aforesaid, shipwright; for a method of making and working windlasses.

——— 18. Thomas Newstead, of Kingston-upon-Hull, Yorkshire, Chemist; for a method of preparing barilla and kelp, and the neutral salts obtained therefrom.

——— 21. Peter Storck, of John-street, Tottenham Court Road, Middlesex, Baker; for a substitute for brewer's yeast, which may be made and used in all weathers and climates.

——— 21. Thomas Brown, of Alnwick, Northumberland, Whitesmith; for a machine for the cutting of tobacco, tallow for tallow-chandlers and soap-boilers; and also for the cutting of turnips, cabbages, carrots, and other kind of roots, for the feeding of cattle.

——— 28. Joseph Everett, of Salisbury, Wiltshire, Clothier; for an article manufactured of different materials, and wove in a peculiar manner, so as to give it an appearance of velvet, which he denominates, *Salisbury Angola Moleskin.*

——— 28. George Woods, of Barbican, in the city of London, Gentleman; for a method of constructing harps, harpsichords, piano-fortes, violins, guitars, and other stringed musical instruments.

——— 28. Archibald Earl of Dundonald; for a method of treating or preparing hemp and flax, so as materially to aid the operation of the tools called hackles, in the division of the fibres, and which is likewise attended with other advantages.

——— 29. Edward Warner, the younger, of Little New-street, in the city of London, Brass-founder; for an improvement upon the air-lamp, the properties whereof consist in reflecting a more general and stronger light by means of certain valves, and a newly constructed burner.

July 6. James Roberts, of Abbotston-Farm, Southampton, Yeoman, and George Cathery, of New Alresford, in the same county, Gentleman; for a method of compleatly and effectually eradicating smut from wheat; and that wheat, when cleansed by their invention, will produce flour of as good quality and value as flour made from wheat of the best growth.

——6. Joseph Manton, of Davies-street, Berkeley-square, in the parish of St. George, Hanover-square, Middlesex, Gunmaker; for a hammer, upon a new construction, for the locks of all kinds of fowling-pieces and small arms.

———27. James Stuart, of London-street, in the parish of St. Dunstan, Stepney, Middlesex; for a method to strengthen ships or floating vessels.

July 28. John Norton, of Rolls-buildings, Fetter-lane, Fleet-street, London, Mathematical Instrument-maker; for an improvement in the construction of a water-mill.

——29. Thomas Kentish, of Baker-street North, Portman-square, Middlesex, Esquire; for a dewick, for the purpose of more expeditiously, with less labour, and at less expense than heretofore, loading and unloading ships and vessels, removing heavy bodies in any direction, and which is also applicable to other useful purposes.

——29. Arthur Woolfe, of Wood-street, Spa-fields, Middlesex, Engineer; for an improved apparatus for converting water or other liquid into vapour or steam, for the working steam engines, for the heating of water or other liquid employed in brewing, distilling, dying, bleaching, tanning, and other processes connected with arts and manufactures; calculated also to make a stronger extract than can be obtained by the processes commonly in use from a given quantity of any vegetable or other substance from which extracts are or may be made without the danger of burning, scorching, or singeing, such vegetable or other substance, and applicable to various other processes.

HISTORY.

National Transactions.

GREAT BRITAIN.

HAVING placed the country in the moſt formidable ſtate of ſelf-defence, by rouſing all the latent energies of the nation, our Government now turn their attention to offenſive operations againſt the foe by whom we are menaced.

Not only Calais and Boulogne, but Havre-de-Grace, and other ports of the Seine, are put into a ſtate of ſtrict blockade. This is, unqueſtionably, a wiſe and ſalutary meaſure: and the vaunting enemy now completely cooped up in his own territories, inſtead of finding it an eaſy matter to ſally forth for the purpoſe of invaſion, will find it extremely difficult to obtain his own colonial produce—and muſt be indebted for its poſſeſſion, to a ſlow and circuitous paſſage through the North of Europe.—General Moore is on the point of ſome ſecret expedition: he is already at Shorn-Cliffe, prepared to embark with about 5000 men at a moment's notice. His direct object is wiſely kept in the dark. Certainly, however, it is not in the preſent inſtance to aſſiſt Portugal—which country, it is highly probable, may ſhortly be levelled at by the Firſt Conſul, though it does not appear ſhe is by any means in that danger of immediate attack, which has been repreſented by many.

The mouths of all our navigable rivers will ſoon be in ſuch a ſtate, as to defy the entrance of any force, however formidable, and the ſame will be the caſe even with our moſt trifling harbours The Sea Fencibles will render the moſt eſſential ſervices to their country in theſe arrangements; and the Government is now buſy in providing them with the proper means.

The whole amount of our regular troops are as follows:—

IN ENGLAND.

Guards . . .	10,000
Cavalry (Regulars) .	17,000
Artillery, ditto . .	3,000
Regulars, Infantry, including about 20,000 then raiſed for the Army of Reſerve .	46,000
Militia, excluſive of the Supplementary . .	49,000

IN IRELAND.

Regulars altogether .	34,000
Militia . . .	20,000

The regular force now in Britain is not leſs than 100,000 men, the militia nearly the ſame number, and the volunteers full half a million. The force in Ireland has been greatly augmented. The volunteers there are very ſtrong. In and about Dublin alone, there are 10,000 yeomanry. When we conſider theſe facts, and ſee that the late inſurrection in Dublin was not ſo extenſive and alarming as we at firſt apprehended; that the conſpiracy is by no means ſo formidable as we were told; our fears of invaſion ſubſide moſt agreeably.

The trials of the Iriſh rebels have commenced, and ſeveral of them have already been convicted and executed.

We are daily gaining ſome additional degree of knowledge as to the actual extent and formidable nature of the conſpiracy. The rebel General Ruſſel, who, it was for ſome time conjectured, was lurking about the metropolis, has at length been discovered, arreſted, and repeatedly examined at the Caſtle. The execution of Ruſſel is unqueſtionable, and he does not attempt in the ſmalleſt degree to palliate the motives of his conduct, or to deny the vigour with which he meant, if poſſible, to have led forwards the rebellion. This man is one of thoſe who were expelled the kingdom about three years ſince along with Arthur O'Connor, and the other leaders of the Revolutionary Government. His chief operations have been in the Northern Provinces, where he iſſued a proclamation as Commander in Chief of this diſtrict, but where not meeting with the ſucceſs he expected, he fled to Dublin, and had been concealed alternately in the houſes of different rebels, whoſe names are not yet detected.—Ruſſel is ſaid to be a man of ſtrong mental endowments, and ſuperior military talents; he has been a Captain in the King's Army, and has ſerved with high reputation both in the Eaſt and Weſt Indies. We congratulate the Government upon the arreſt of a traitor competent to produce ſo much miſchief; and we truſt that it now begins to perceive as nearly fatal was its own deluſion as to the extent of the conſpiracy: the arreſt of Emmett, Ruſſel, and Redmond, muſt be ſufficient to open their eyes, if any thing can; and yet it is probable we have hitherto obtained a mere glimpſe of the formidable power which was ſecretly exerting itſelf.

FRANCE.—Independently of a caſual glance at this Republic through the medium of Germany, and the French Journals which occaſionally reach us, after having made the circuitous tour of ſome part of the North of Europe, we know no more of its internal tranſactions than if it formed a part of the geography of the moon. The entire extent of the coaſt that ſkirts the Britiſh Channel is, indeed, ſo cloſely watched and prohibited, not only to every thing in the ſhape of an Engliſh veſſel, but to every thing that has had any direct contact with the Engliſh ſhores.

It does not appear that Bonaparte has relinquiſhed his idea of invading our own country at ſome point or another. In reality, it is generally affirmed, that his only motive for prohibiting in ſo rigid a manner all correſpondence between England and France is, that the former may be kept as much as poſſible in the dark with reſpect to the ſtate of his preparations, and the

point from which he means to make his grand ſally. This however, may, or may not be his motive; for if he had totally relinquiſhed the maniac enterprize, ſtill he might be tempted to purſue the ſame plan to avoid the deriſion of the people of this country, and to let himſelf down by degrees. Nevertheleſs, from the buſtle with which France appears to be ſtill univerſally agitated—from the actual preparations on the whole line of the French coaſt from Breſt to the Scheldt, and more eſpecially from the extenſive orders given in conſequence of his recent progreſs through the Netherlands, for cutting timber in almoſt every wood where any is to be found fit for naval purpoſes, and the conſtruction of not leſs than twelve new docks at Antwerp, which are all to be commenced inſtantaneouſly, and completed with the utmoſt diſpatch: from all theſe conſiderations, we have unqueſtionably reaſon to ſuppoſe, that the dream of invading the Britiſh Empire ſtill hangs about him, and that he is yet determined to riſk the undertaking, and once more entruſt himſelf to the hands of fortune.

The lateſt official intelligence from France relates to the decrees of the Firſt Conſul during his excurſion through the country; and independently of the orders we have juſt referred to of an external and offenſive nature, contain others for the interior regulation and improvement of the provinces he viſited—for the repair of old, and the conſtruction of new roads—the conſtruction or deepening of canals—the elevation of embankments, ſinking the beds of rivers—the melioration of the mouths of various ports, and the plantation of many uncultivated downs and deſert mountains; particularly in the vicinity of Ambleteuſe, Wiſſent, Calais, and Dunkirk. Some of theſe regulations appear to be wiſe and worthy of execution; but we obviouſly perceive in the whole a mere wiſh to be buſy—an ambitious anxiety after the character of a great and comprehenſive ſtatesman—a character which the very conſtitution of Bonaparte will never ſuffer him to realize.

We have hither been rather unlucky in our blockading ſyſtem; for a flotilla of not leſs than twenty-ſix gun-boats lately effected their eſcape from Dunkirk to Calais, our own cruiſers being unfortunately to the eaſtward, and the wind ſo powerfully againſt them, that they could not poſſibly overtake them to produce the ſmalleſt moleſtation. They are certainly deſigned for the grand depot, whatever be the ſpot fixed upon for this purpoſe. Be their deſtination, however, what it may, the caſe with which this fortunate manœuvre has enabled them to eſcape, if not the vigilance, at leaſt the vengeance of our own Marine, ſhould ſtill convince us of the impropriety of excluſively confiding in a power that is ſo ſeldom the miſtreſs of its own actions which may be able to ruin the active enterprize by itſelf, or incapacitated from rendering, in the firſt inſtance, even the ſmalleſt degree of benefit.

SPAIN AND PORTUGAL.—Very conſiderable anxiety has been for ſome time paſt felt in this country for the fate of Portugal; and the laſt accounts received from that country do not much tend to relieve it. They are indeed in ſome meaſure contradictory, every perſon writing as he is actuated by his perſonal feelings and apprehenſions, rather than from any authentic information with reſpect to the deſigns of the Chief Conſul of France, or the determinations of the Court of Madrid. Letters of very good authority received in this country, poſitively aſſert that the Court of Madrid had peremptorily refuſed to grant permiſſion to a French Army to paſs through the Spaniſh Territory for the purpoſe of invading Portugal; and it was added, that the French Troops aſſembled at Bayonne, and other places contiguous to the Spaniſh Frontier, had actually been withdrawn into the interior of France. However this may be, we may confidently reckon that the refuſal of the Spaniſh Government to permit French Troops to enter Spain, will only be perſiſted in while the Chief Conſul does not preſs it with vigour, which he will doubtleſs do the moment it ſuits his conveniency.

It is to be regretted that no deciſive meaſures were adopted at the proper moment by Government, with reſpect to the Court of Madrid, which is in fact directed in all its movements by the will of the firſt Conſul. If Miniſ-

ters have ſuffered themſelves to be deceived by the profeſſions of Spain to maintain a ſtrict neutrality, they have been cheated by a mockery which could not have impoſed upon a mere ſchool-boy in politics. We fear they will have much reaſon to lament their inactivity in ſuffering the treasurers of Peru and Mexico to reach the Spaniſh ports in ſafety, while their ultimate deſtination muſt in reality be the ſtrong cheſt of Bonaparte

WEST INDIES.—The remnant of the French army, and the inhabitants attached to the French cauſe, are already reduced to much miſery and diſtreſs in St. Domingo; it is impoſſible to obtain a ſupply of proviſions from the interior of the country, while the Britiſh fleet prevents ſuch ſupply from without: each perſon is already limited to a ſhort ratio by the expreſs deciſion of the Commander in Chief. The Negroes are inceſſantly active on their backs, while the Engliſh ſquadron captured in the front not leſs than twenty French veſſels of different ſizes in the month of July alone. Martinique is alſo ſaid to be blockaded; but we believe the French force to be very conſiderable in this iſland.

Agriculture.

IPSWIICH, SEPT. 10.

OUR harveſt is juſt finiſhed, and one of the moſt favourable we ever recollect; all grain is houſed in as fine order as ever known in this country, a few beans excepted, on backward ſoils. The reports of the wheat crop differ much; a blight or mildew has materially injured the produce in ſome places; but we believe it is partial, and hope not to find it to the extent that was expected. The quality will not be equal to laſt year, nor the ſamples ſo regular, or the weight ſo much; on the whole, we think it may be rated at three fourths of the laſt crop; Barley is conſidered very abundant, and the quality fully equal to laſt year's growth. Oats we think nearly the ſame. What beans remain abroad, ſhould the weather continue fine a week longer, we have no doubt will be ſecured in good order; they are certainly leſs productive than any other grain, and generally believed not more than three fourths of an average crop.

Peaſe are likely to yield well, and the quality good, except on ſome light burning lands. The ſeaſon has been favourable for clover ſeed, and trefoil; the ſcarcity of graſs occaſioned much to be cut for fodder, but the produce and quality of white clover and trefoil we expect to find very good, as alſo of red clover, but the quantity we think will be ſhort.

FARNHAM, SEPT. 8. All the Farnham planters began picking before the hops were ripe, every one will finiſh next week, and moſt of them at the beginning of the week. Our hops never were ſo fine in quality; there never was remembered ſo little mould or any other diſtemper among them. The pariſh will average at about ſeven or eight hundred of an acre; the adjoining pariſhes of Crundel and Alton not ſo many.

WORCESTER, SEPT. 4. We have had in about 280 pockets of new hops; 265 of them ſold at from 4l. 4s. to 5l. or 5l. 5s. per cwt. few above 5l. or under 4l. 15s. the quantity good for firſt picking, ſhall have a large ſupply next Saturday, and many expect prices will lower. Our duty is now laid at 32,000l, and one perſon betted at 35,000l; we think it cannot reach the latter ſum. Our planters all agree the hops riſe faſt, but they go over the ground quick.

MAIDSTONE, SEPT. 15. The plantations of hops in this neighbourhood although very productive, will yet fall conſiderably ſhort of the growth of 1801. The quality various, as many of our grounds are much diſeaſed with the mould. Hops are at preſent ſelling from 4l. 8s. to 4l. 16s. and 5l. Pockets—4l. 4l. 4s. to 4l. 10s. in bags.

CANTERBURY, SEPT. 15. Wednesday was our first hop market and but thinly attended, the planters being employed in picking, but very few fine samples were exhibited; the prices of those which were sold in pockets 4l. 15s. to 5l. 5s. Bags 4l. 8s, to 4l. 12s. For the fine samples 5l. 12s. was demanded, but we do not learn that such a price was obtained.

SOUTHWARK, SEPT. 14. We continue to have an exceeding good trade for all kinds of hops at higher prices; a lot of East Kent was yesterday sold at 5l. 12s. and today some Middle Kent have been sold at the same price, and many at 5l. 5s. and 5l. 6s. The supply has been very fair, but the demand at present is so very great, that unless it slackens or the supply be larger we should not be surprized to see prices still higher. Current prices, bags 3l. 16s. to 4l. 5s. fine 4l. 12s. Pockets 4l. 10s. to 5l. 6s. and 5l. 12s. per cwt. A very general complaint that the hops are turning very red.

From various accounts of the state of the crops for the year, it appears that through Kent, Essex, Hertfordshire, Suffolk and Norfolk, the blight or mildew has run in streams, and has considerably affected the wheat. Some of the grain is shrivelled, burnt and light beyond all precedent. But this misfortune does not appear to be general. In some instances it has taken a whole field, while the next has totally escaped its influence. In others it has run across a field destroying one part, and leaving another a fine full crop. It runs uniformly from the north east, and it does not appear to have at all affected the western counties.

The harvest in the greatest part of Lancashire was over early in September. The crops are very fine and abundant. There is no complaint of the mildue which is said to have injured the crops in the South of England.

Most of the farmers in the Weald of Sussex celebrated harvest home the commencement of September, and more abundant crops of all sorts of grain, speaking generally, were never known. Pease and beans, owing to the long continued dry weather, are rather deficient of produce.

Berkshire Agricultural Society.

Richard Palmer, } Steward.
Rev. Philip Wroughton, }

The next meeting will be held at Reading, on Tuesday September 20, being the day preceeding the September fair, when the following rewards will be distributed.

PLOUGHS. To the owner of the best constructed plough, which shall be worked by the best and cheapest team of either oxen or horses, a piece of plate value 10l.

PLOUGHMEN.—To the best, two guineas.
To the second, one guinea.
To the third, half a guinea.

	£.	s.	d.
IMPLEMENTS OF HUSBANDRY. To the person, being the maker, who shall then produce the most useful implement in husbandry, not in common use	5	5	0
To the next best	2	2	0
WAGGONS. To the maker of the lightest, strongest, and best constructed waggon, which shall be then and there produced	3	3	0
CARTS. To the maker and owner of the lightest, strongest, and best constructed cart, fit to be used with a single horse, for the carriage of burthen or removal of gravel, chalk, dirt or dung	2	2	0

Rewards to industrious Labourers and Servants in Husbandry.

To the labourer in husbandry, who has reared the largest family without assistance from parochial relief	2	2	0
To the second	1	1	0
To the next	0	10	6

To the man ſervant in huſbandry, who has reſided the greateſt number of years in the ſame ſervice, with any member of this ſociety, or his predeceſſor, and is now in his ſervice .	2	2	0
To the ſecond	1	1	0
To the third	0	10	6
To the woman ſervant	2	2	0
To the ſecond	1	1	0
To the next	0	10	6
For encouragement to the five moſt induſtrious perſons in huſbandry, who labouring under any bodily infirmity ſhall have continued to labour notwithſtanding ſuch infirmity, each .	0	10	6
To the parents who ſhall prove to the committee, that their children under twelve years of age, have been moſt uſefully employed in huſbandry.	1	1	0

Newbery, Sept. 2, 1803. BUDD AND GRAY, Secretaries.

Lincolnshire Division of Lindsey Agricultural Society.

Thomas Stone,
Philip Skipfied,
William Halifax, } Judges.

At the ſhew of cattle and ſheep held at Market Raiſin, on Wedneſday Auguſt 24, 1803, the premiums offered were adjudged.

To Mr Robert Aſley, of Baumber, for the beſt and ſecond beſt two ſhear rams.

To William Graburn, Eſq. of Barton, for the beſt ſix gimmers.

To Mr. John Greenfield, of Horſington, for the beſt bull.

To Mr. Paul Pell, of Tupholine, for the beſt milch cow.

To Ayſcoghe Boucherett, Eſq. of Willingham, for the ſecond beſt milch cow.

To Meſſrs. J. and E. Waleſby, of Wold Newton, for the beſt and ſecond beſt two years old heifers.

The following premiums have been adjudged, viz. for the year 1800.

To William Enderby, of Binbrook, for bringing up the moſt numerous family withont parochial aſſiſtance.

To John Smith, of Laceby, labourer in huſbandry, the longeſt time on one farm.

To James Orry, of Caiſtor, ſervant, the longeſt time with one maſter in huſbandry.

To Elizabeth Hutchinſon, of Habrough, ſervant, the longeſt time with one maſter in huſbandry.

For the Year, 1801.

To Robert Hotter, of Apley, for bringing up the moſt numerous family without parochial aſſiſtance.

To George Vicars, of Bardney, labourer in huſbandry, the longeſt time for one maſter.

To William Wrag, of Market Stainton, ſervant, the longeſt time with one maſter in huſbandry.

To Ann Shaw, of Habrough, ſervant, to one maſter in huſbandry.

For the Year, 1802.

To Joſeph Barker, of Woodhall, near Horncaſtle, labourer in huſbandry, the longeſt time for one maſter.

To Alice Parnell, of Horncaſtle, ſervant to one maſter in huſbandry.

Barton, Aug. 30, 1803. THOMAS MARRIS.

Grand Junction Canal.

The Committee of Proprietors of the Grand Junction Canal, having maturely conſidered the propriety of endeavouring by every poſſible means to facilitate the conveyance of fat cattle to the markets of the metropolis and its environs, and being willing to give encouragement to the ingenious and enterpriſing, offer the following premiums:

To the perſon who ſhall cauſe to be built, a boat beſt calculated for the conveyance of fat cattle, ſheep, lambs and hogs, by the canal, twenty guineas.

To the perſon cauſing the ſecond beſt boat to be built for that purpoſe, ten guineas.

For the third beſt boat, five guineas.

The committee reſerve to themſelves the power of adjudging whether any and which of the claimants ſhall be entitled to the prizes. No claims will be admitted unleſs the boats are built, and the plans ſent in within ſix months from the date hereof.

Grand Junction Canal office, No. 12, Eſſex Street, Strand, London, Aug. 18, 1803.

Eſſex Agricultural Society.

At the anniverſary of this ſociety, held on the laſt Monday in September, 1802.

The Right Hon. Lord Braybrooke, Preſident, in the Chair,

IT WAS RESOLVED,

That two ſilver medals be given to two perſons, one to each, who for the crop of the year 1803, ſhall dibble in the greateſt number of acres of wheat, in proportion to the whole quantity of land ſown with that grain, ſo that the ſame be not leſs than twenty acres.

That two ſilver medals be given to two perſons, one to each, who for the crop of the year 1803, ſhall dibble in the greateſt number of acres of any other corn, in proportion to the whole quantity of land ſown with ſuch other corn, (except beans, which are already generally dibbled,) ſo that the ſame be not leſs than forty acres.

That two ſilver medals be given to two perſons, one to each, who for the crop of the year 1803, ſhall drill the greateſt number of acres of wheat, in proportion to the whole quantity of land ſown with that grain, ſo that the ſame be not leſs than twenty acres.

That two ſilver medals be given to two perſons, one to each, who for the crop of the year 1803, ſhall drill in the greateſt number of acres of any other corn, in proportion to the whole quantity of land ſown with ſuch other corn, ſo that the ſame be not leſs than forty acres: and that the ſucceſsful candidates for the drilling premiums be allowed one guinea each for the drill-holder.

No claim to be admitted for any of the crop premiums, unleſs a certificate be delivered to the ſecretary of the ſociety, fourteen days previous to the general meeting for the diſtribution of prizes, ſtating the number of acres dibbled or drilled by each candidate, and ſigned by two reſpectable farmers within that diſtrict.

IT WAS ALSO RESOLVED,

That twenty guineas to be given to labourers and ſervants, in the year 1803, as follows:

Firſt Claſs.—Five guineas to five labourers in huſbandry (one guinea to each,) who ſhall have brought up the greateſt number of children in the habits of induſtry, with the leaſt proportionate relief from the pariſh. The ſame to be certified by the overſeers of the pariſh, or by two reſpectable inhabitants.

Second Claſs.—Five guineas to five houſehold men ſervants (one guinea to each) employed in huſbandry, 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 good behaviour.

Third Claſs.—Five guineas to five women ſervants in every kind of ſervice (one guinea to each,) who ſhall have received wages during the greateſt number of years in the ſame ſervice, and ſhall produce ſatisfactory certificates from their maſters or miſtreſſes of their good behaviour.

Fourth Claſs.—Five guineas to five wives or widows of labourers (one guinea to each,) who ſhall have done the greateſt number of days work in huſbandry, between the 11th of September, 1802, and the 11th of September, 1803. Such number of days, and the different kinds of work in which the women ſhall have been employed, to be ſtated in certificates from their employers.

Theſe premiums to be diſtributed at the Anniverſary of the ſociety, being the laſt Monday in September.

Notice is hereby given, that the perſons who intend to become candidates for the above-mentioned premiums for dibbling and drilling, are requeſted to tranſmit their certificates to the ſecretary of the ſociety, fourteen days previous to the next anniverſary meeting, as above directed.

And the perſons who intend to become candidates for the premiums to labourers, &c. are deſired to tranſmit their certificates to the ſecretary, on or before the 19th of September next, (any ſent after that time will not be allowed,) diſtinguiſhing the claſs to which they belong.

N. B. Each labourer's certificate muſt be ſigned by a member of the ſociety, the forms of which may be had of the ſecretary gratis.

Chelmſford, Auguſt 24, 1803. JOHN GOULLING, Secretary.

Drayton Agricultural Society.

At a meeting held at the Talbott Inn, in Drayton, on Tueſday, the 28th day of July, 1803,

Sir Corbet Corbet, Bart. Preſident.

John Hill, Eſq. } Vice Preſidents.
Rev. William Judgſon. }

The following premiums were adjudged

	£.	s.	d.
For the beſt three year old long horned heifer, own breeding, Mr. Foden, of Holly Grove	2	2	0
For the beſt two years old ditto, ditto, Mr. Dicken, Peatſwood	2	2	0
For the beſt one year old ditto, ditto, Mr. Dicken	1	1	0
For the beſt three year old ſhort horned heifer ditto, Mr. Bellayſe, Audlem	2	2	0
For the beſt two year old ditto, ditto, no candidate			
For the beſt one year old ditto, ditto, Mr. Taylor, of Ellerton	1	1	0
For the beſt brood mare, Mr. Hill, of Prees	3	3	0
For the beſt N. L. ram for ſtock, not more than two years old, Mr. Dicken	2	2	0
For the beſt N. L. ewe ditto, ditto, Mr. Foden	2	2	0
For the beſt pen of four ditto, theaves, own breeding, Mr. Dicken	2	2	0
For the beſt ram of any other ſort, two year old, Mr. Harding, of Old Springs	2	2	0
For the beſt ewe of ditto, ditto, Mr. Harding	2	2	0
For the beſt pen of four ditto, ditto, own breeding, Mr. Harding	2	2	0
For the beſt boar pig, Sir Corbet Corbet	2	2	0
For the beſt young ſow, Mr. Harding	2	2	0

Sir Corbet Corbet propoſes to give a ſilver cup, value ten guineas, to any ſubſcriber of this ſociety, or any tenant of a ſubſcriber, who in the year 1804 ſhall grow the beſt crop of wheat on fallow, not leſs than ſix acres, by the drill huſbandry, and to be properly horſe hoed. An exact account to be given in of the quantity of ſeed ſown, and of every expence attending the cultivation. The claimants for this premium to give notice in writing to the ſecretary on or before the 24th of June next, that proper perſons may be appointed by Sir Corbet to view the crops.

The meeting was well attended, and highly reſpectable.

TAOMAS DICKEN, Secretary.

Yorkshire Shew of Cattle.

The East Riding ſhew of cattle was held at Great Driffield, on Wedneſday laſt, before the moſt numerous meeting of gentlemen, farmers, and breeders of cattle, ever before aſſembled on the like occaſion. The judges appointed were Mr. W. Jobſon, Mr. Matthew Culley, Mr. N. Buckly, gentlemen who had come from Northumberland for the occaſion; when, after an examination of nearly two hours of all the different cattle preſented, the premiums were adjudged as under:

	Gnineas.
SHEEP.	
For the beſt aged ram, Mr. Bramley, of Wyton,	10
For the beſt ſhearling ram, Mr. Robinſon, Carnaby	10
Fo the ſecond beſt ditto, Mr. George Coates, Driffield	6
For the third beſt ditto, Mr. Truſit, Stillingfleet	4
BULLS.	
For the beſt aged bull, Mr. J. Baker, Lowthorpe	8
For the beſt two year old ditto, Mr. Grimſton, Neſwick	6
For the ſecond beſt ditto, Mr. G. Coates, Driffield	4
For the beſt yearling heifer, Mr. G. Coates, Driffield	5
BOARS.	
For the beſt boar, Leiceſterſhire breed, Rev. Francis Lundy	5
For the ſecond beſt ditto, ſame breed, Sir M. M. Sykes, Bart.	3

The judges, in giving in their deciſions, added two notes; the firſt, that the ſhearing ſheep of Mr. Tatton Sykes would have been entitled to the firſt prize, had he been unlet; and that the natural breed of pigs of Yorkſhire, viz. the large long eared long ſnouted ſort, being very unprofitable, had better be diſcontinned.

Eleven boars would have appeared for the prize but two died in bringing. As ſoon as the nine boars were let into the incloſed ground they all broke from their keepers, and began fighting ſo dreadfully, that they were only got aſunder at laſt from fatigue. Many of them were much mangled, and it may operate as a caution hereafter to have the boars led in by rings to their ſnouts.

The company then adjourned to the Great Hunt Room, where an ample dinner was provided with the addition of a very fine haunch of veniſon, preſented by Sir M. M. Sykes, who was prevented attending by the loſs of his mother.

After the judges had given in their deciſions, Major Topham, as chairman of the meeting, ſtated "that the Eaſt Riding of Yorkſhire muſt feel themſelves much flattered by the attendance of gentlemen ſo well known as breeders of ſtock as the judges then preſent, and who muſt give the meeting peculiar ſatisfaction, not leſs from their judgment as from the idea that no local partialities could be ſuppoſed to exiſt. But that the committee felt it their duty to aſk, whether ſome remuneration for the trouble and expence they might have incurred, would not be expected by them." This was moſt handſomely refuſed by all the three gentlemen, and after being again publicly thanked, the healths of Meſſrs. Jobſon, Culley, and Buckley, were drank by the whole company.

A committee was then appointed for the enſuing year, conſiſting of the following gentlemen:—W. T. St. Quintin, Eſq. R. Bower, Eſq. John Grimſton, Eſq. Tatton Sykes, Eſq. and the Rev. Mr. Hilyrad.

The utility of the meeting proved itſelf in the very improved ſtate of the cattle ſhown; and the number of candidates exceeded any former exhibition. Mr. Phillips of Bracken, brought forward ten beautiful wether ſheep, but there being no competitor, the premium could not be adjudged to him.

To the credit of Mr. Coate's ſtock, the bulls who won the prizes were of his breed.

In the department of Landes and L'Heraut, in France, an oily plant called *Arachi;* of the family of lentils *(Arachis Hypogæa)* begins to be cultivated. It was brought by the Spaniard from Mexico, and was introduced by the

French from Spain. An ounce of the oil of this plant, with a line and a half in diameter, burned nine hours and twenty-ſix minutes. An ounce of olive oil under ſimilar circumſtances laſted only eight hours. Thus the oil of the arachis has the advantage of above one eighth over olive oil, and more or leſs over every other kind of oil. It is an excellent ſubſtitute for olive oil for every other domeſtic uſe, and is preferable to all other ſorts for the manufacture of ſoap. The ſeed yields nearly half its weight of oil.

The Society of Agriculture, Arts, and Commerce of the department of the Ardennes, which meets at Mezires, has juſt publiſhed the fourth part of its collection of ſelect memoirs. It contains, among other intereſting papers, a diſſertation on the propagation of pulpy fruit trees in ſome of the cantons of the department; reflections on inundations which are frequent there, and on the means of preventing their diſaſtrous effects, a report on a new plough, and ſeveral other papers, which evince the intelligence and zeal of that ſociety.

His Majeſty has lately ſent an agent into the county of Durham, to purchaſe ſtock of the Teeſwater breed. We underſtand that he has purchaſed ſome heifers and a bull from Mr. Charles Colling, of Ketton, the breeder of the famous Durham ox, lately ſhewn in London. They are now on their way to the farms at Windſor. Mr. Colling's ſtock is allowed to be the beſt of that kind in the kingdom.

A moſt deſtructive epidemical diſtemper now rages among the cattle of Switzerland. On the Gruyere hills more than 300 cows have been killed to ſtop the progreſs of the infection with which they were tainted. In that country the diſtemper is known by the name of the coal. Its preſent malignity is terrible. The cattle go in herds of twenty or thirty to the ſummit of the mountain, grazing all the way as they aſcend. There, whether it be that the principle of the diſtemper exiſts in the air, in conſequence of its exceſſive heat, or that it is produced by the herbage which has been heated and deprived of all moiſture by the influence of the ſun: ſome of the animals lie down and die ſuddenly, at the greateſt height of the hills; others becoming faint and powerleſs, drop on the earth and rolling down the declivity, fall over the precipices, and are daſhed to pieces.

Meaſures have been taken by the magiſtracies of the ſeveral places to repreſs the ravages of this diſtemper and ſave thoſe cattle which are yet uninfected. They in the firſt inſtance enjoined the inhabitants of the communities in which the diſeaſe prevails to abſtain from the uſe of milk, fleſh, and even eggs, leſt the fowls, catching the diſtemper on the dunghills might communicate it to the human ſpecies. For the moment there is a prohibition of intercourſe between the communities in which the infection rages and thoſe which have hitherto been free from it. Mention is made of the exiſtence of a ſimilar contagion in the canton of Schaffhauſen, but the effects are not either ſo rapid or extenſive. There is alſo in the Duchy of Wirtemberg, among the horſes a diſeaſe of which many die; it is called the *yellow heat*.

All the news from France, Switzerland, Germany, Hungary, and the North, ſpeak of the richneſs and abundance of the crops, as ſurpaſſing all expectation. The vines every where promiſe a moſt plentiful vintage. In many parts of Switzerland there has not been a more copious produce of grain within the memory of man. In the canton of Berne, in many places the produce of thirteen or fourteen ſacks of corn each 200 lbs. weight; and in others ten or twelve ſuch ſacks, from every ſpace of 500 ſquare fathoms.

At Kepton Aſh fair, lambs were very dull of ſale except ſome prime Norfolk ewe lambs bred by Mr. Goodwyn, of Shereford, which ſold very readily at 36l. per ſcore.

At Briſtol fair, the quantity of leather was unuſually large, and much beyond the demand; the following is a liſt of the prices:

Crops, 21½d. 22½d.—Welſh hides, 23d. 24d.—Saddlers Hides, 23d. 25d. Iriſh, and inferior ditto, 22d. 23d.—Bull hides, 19d. 20d.—Horſe hides 20d.

23d.—Backs 21d. 22d.—Buffalo's, 17d. 20d.—Kids, 2s. 2s. 2d.—Beſt ſkins, 2s. 8d. 2s. 8½d.—Welſh ditto, 2s. 5d. 2s. 7d.—Iriſh ſkins, 22d. 2s. 2d.—Heavy ſeals, 22d. 2s.—Light ditto, 3s. 6d. 4s.—Raw goods—Buenos Ayres hides, 9d.—Spaniſh ditto, 25lbs. per hide, 8½d.—Salted Dutch ſkins, 6lbs. to 8lbs. per ſkin, 7d. to 8d.

The ſhew of lambs at Ipſwich fair, was by no means ſo great as the dealers have been accuſtomed to ſee, it being apprehended there were not more than three-fourths of the quantity produced even laſt year; and the generality of the lambs were very inferior in condition to the ſtate they were in laſt fair. The ſale in the foregoing part of the day was extremely dull; about four o'clock in the afternoon, however, a conſiderable quantity were ſold, quality conſidered, at prices full as high as laſt year, namely, from 15l to 22l. per ſcore on the general run. The rage for half-breds was not ſo prevalent as it has been lately.

At Britford fair, there was a very large ſhew of ſheep and lambs, though not ſo many by ſeveral hundreds as laſt year; the prices nevertheleſs were from 7s. to 12s. a head leſs than at that period, or at the late markets, the average price of prime wethers being about 50s. ewes about 32s. and lambs from 12s. to 23s. Cattle fell in the ſame proportion. There were a few good horſes, which were eagerly bought at high prices.

At Newent fair, there was a conſiderable ſhew of ſheep; numbers of which were driven away unſold, and thoſe which met with purchaſers were diſpoſed of at reduced prices. There were alſo a great number of cattle, chiefly lean, which had but a dull ſale.

Worceſter fair was but moderately ſupplied with cattle; there were, however, plenty of ſheep and horſes. Cattle and ſheep rather declined in price, and horſes had a dull ſale.

At Shrewſbury fair lamb's wool ſold from 15s. to 17s. 6d. Fleece wool from 20s. to 29s. per ſtone. Fat cattle about 7d. per lb. Sheep and pigs conſiderably lower than of late. Old cheeſe from 58s. to 68s. per cwt. New ditto from 48s. to 56s. per cwt.

At Harlow Buſh fair, in Eſſex, there was a conſiderable ſhew of cattle; but the Drovers keeping up their prices, notwithſtanding the drought, ſcarcely any purchaſes were made, except of a few lots of freſh beaſts to tie up at the diſtilleries.

Maldon fair was well ſupplied with cattle, which, notwithſtanding the ſcarcity of feed went off at high prices. The ſheep and lambs pens were alſo well filled, but from the very high prices aſked, ſales were dull until a reduction in the price took place, when the pens were moſtly cleared. The weather continuing fine the fair was numerouſly attended and upon the whole a good deal of buſineſs was done.

Commerce.

BRITISH Goods are now excluded from France, and, as much as poſſible, from all the other countries on the Continent in which French influence predominates. Smuggling, and the other artifices of traffic, may triumph over the reſtraints impoſed by war, and the jealouſies of a falſe contracted policy. Under ſuch prohibitions as exiſt in France, ruinous to the conſumer, embarraſſing even to the merchant, but to the domeſtic manufacturer eminently favourable, the manufacturers of that country might very probably flouriſh, were it not for the impoveriſhing military deſpotiſm under which that whole country groans.

The demand for Engliſh goods in India, and for both Engliſh and India goods in China, continues to increaſe with the extenſion of the Britiſh eſtabliſhments in the Eaſt.

Our trade to the dominions of Turkey is, on the whole, leſs conſiderable than that of the Italians, the Germans, and the French: yet it is not ſmall; it may be augmented, and by ſome late regulations in our wine trade as well as by the poſſeſſion we retain of Malta, it is likely to be augmented.

With Spain and Portugal our trade is ſtill open and active. We do not now monopolize the trade of either of theſe countries further than what is to be accompliſhed by the ſuperior excellence of our goods, the common cheapneſs of our prices, the length of credit we can afford to give, and the advantage that we derive from the fact, that both in Spain and Portugal the people have been long accuſtomed to our commercial intercourſe, and to the uſe of our goods.

With the Baltic our commercial intercourſe is now very great; to us it is profitable, for we engroſs no ſmall proportion of the carrying trade at leaſt of Ruſſia. But it is ſtill more profitable to the countries on that ſea which ſell to us their raw produce and coarſe manufactures. We ſupply the capital with which the rural and manufacturing improvements of thoſe countries are advanced.

The Fiſheries are an invaluable branch of the commercial induſtry of this country; they ſupply raw materials to ſome of our moſt ingenious and immediately uſeful arts: they yield the means of nouriſhment and ſubſiſtence to no ſmall proportion of our people. The materials uſed in the proſecution are the produce of our own country, and of the neceſſary arts. It is not the ſmalleſt of thoſe mercies by which Providence now alleviates to us the ills of war, that the Greenland and Davis's Streights Fiſheries have been this ſeaſon remarkably ſucceſsful; and that the herring and pilchard fiſheries upon our coaſts abundantly reward the toil of the fiſherman.

Goods of import from the Mediterranean have, in general, declined in their prices in the London market during theſe few days. Ship ſtores of all ſorts continue to become dearer. There is a riſe in the prices of certain teas, and of ſome other Eaſt-India goods.

The burthenſome amount of the preſent duties upon port wine has led to ſome new diſcoveries in the wine trade, to the great emolument of the London merchant, and the great alarm of the Portugueſe. A Spaniſh wine, called Benecaldo, has, with a little manufacturing, become a ſubſtitute for Port, is coming into general uſe, and will in all probability, in a little time, be conſidered even as a better wine than a great part of the port now drank. The price of port being about £40 per pipe, it may eaſily be conceived how effectually this muſt operate as a bounty on the conſumption of Benecaldo.

The Courts of Vienna and Berlin have agreed to dig a canal at their own expence as far as Cracow. Pruſſia is to execute the work to the frontiers, and the Emperor then to the Viſtula. The cultivation of the interior of Poland will be much improved by this work, which is undertaken on the example of Ruſſia. The inhabitants of the countries bordering on the Dnieper, having no means of exportation, had hoarded up ſuch vaſt quantities of grain, that they no longer found it neceſſary to cultivate more than half their lands. The Emperor Alexander has cauſed the rocks that obſtructed the navigation of the river to be removed, and thus opened a way to an active commerce between thoſe countries now in a ſtate of the moſt improved cultivation, and the fartheſt parts of the globe.

Our goods imported from the Baltic continue in general, in high demand and at riſing prices.

The trade between Ruſſia and Great Britain was never more beneficial than at the preſent moment, to the former of thoſe countries. Ruſſia is at this moment colonized, cultivated, filled with pleaſant farms and with eſtabliſhments of manufacturing induſtry by Britiſh capital.

Our merchants find inconvenience in the blockade of the Elbe and Weſer. It prevents the introduction of their commodities by neutral ſhips to the moſt convenient emporia of Germany. By ruining the merchants of Hamburgh

and Bremen, and the manufacturers of Silesia, it renders some of our best customers on the continent unable to buy our goods and to make payment for them.

At Gibraltar the prices of all provisions are low, and the sale languid. For flour money is not to be obtained; between 18 and 20,000 barrels are now afloat in the bay; fresh cargoes arrive daily. In the port of Lisbon are 6000 barrels, in Barcelona and Leghorn 3000, all American flour.

Considerable quantities of porter are now imported from Ireland into the western parts of England.

We hear with deep concern of the distress of the weavers in the silk manufactures of Spital Fields. The number out of employment is between 5 and 6000 hands. The cause is not so much in the war as the late act of parliament passed last session for admitting certain articles of silk manufacture to be imported into this country from India, upon payment of certain duties.

In Worcester the scarcity of silver is so great that some of the tradesmen have entered into an association to issue tickets at 2s. 6d. each.

Accounts from the Ile of Man state, that the fishery there has been very successful.

The naval article of tar has fallen in price from 33s. per barrel, to 27s or 28s.

The butchers' company and the buyers of hides have mutually agreed to appoint ten inspectors to estimate the deductions to be made in the prices of all hides which are damaged by cutting.

Manufactures and Useful Arts.

New Marine Log.

A Patent has been granted for an Instrument, for taking Sounding at Sea, of which the following is as correct a description as the nature of the subject will admit:—The apparatus consists of a sounding weight, about eighteen inches long, the body of which contains a register with two dials, of an iron or brass rod, twelve inches long, and of a tin buoy, air-tight, about six inches square, and four deep. To the bottom of the buoy is secured a pair of spring tongs, one end of which rests on a hook, and the spring part of the tongs is fixed, to a rotator, or revolving apparatus. The apparatus is composed of a copper or other metallic tube, and four brass or other metallic vanes. The tube must be air-tight, about twelve inches long, and one inch and a half diameter, with a tonical point, about four inches in length. The vanes are soldered to the tube in a spital direction, so as to produce a rotatory motion round the axis of the tube when sent into the water. On each vane is a regulator, whose office is to make a rotator perform a certain number of revolutions, in a given space, correspondent with the calculations of wheels of the register. The rotators are to be adjusted by experiment in water, to correspond with the registers to the greatest nicety, that is, to ascertain the space the machine will descend by every revolution of the rotator. By altering the angles, and the size of the vanes, the rotator may be made to revolve in any desired space.

By this method Soundings may be taken in very deep water, and in water of a fathom, without the trouble of heaving the vessel to, although she may be going at the rate of five miles an hour; for as the rotator registers the descent of the sounding weight, there is no occasion to pay respect to the length of line out; so that the mariner may veer out any quantity of line, which will give time for the machine to descend.

The prominent object of this apparatus is to do away or lessen the errors arising from the old method of taking soundings; as the chief guide for the mariner by that method, is to judge of the perpendicular depth of the line

out, which is apt to deceive him; whereas on this principle he is governed by the deſcent of the ſounding-weight only, without any regard to the length of the line, except in caſe of uſing the reel. The improvements in the rotators are the invention of the air-tubes, and the method of adjuſting or regulating it. A rotator on this principle will anſwer both quick and ſlow ſailing, and give the true diſtance without danger of its breaking the regiſter in quick ſailing, by holding too much water. A ſmall ſteel guage is attached to the rotator, which will ſhew any accident it may meet with.

New application of the Steam Engine.—The American Engineer Fulton, who invented the ſub-marine boat, exhibited on the 10th of Auguſt a novel machine for the entertainment of the Pariſians. For ſome time before there appeared at the quay *de Chaillot* a boat wearing an odd appearance, having a large wheel on each ſide faſtened to an axle like that of a chariot; behind was a large ſtove, which was underſtood to be a ſmall ſteam engine. On the 10th, he, with the aſſiſtance of three perſons only, put his machine in motion, drawing two other boats in her rear. The wheels, which move regularly, were armed with a ſort of flat blades, or oars, ſo placed as effectually to take hold of the water. Againſt the current of the Seine it went at the rate of 2500 toiſes (about three miles) the hour. With the ſtream its progreſs was much more conſiderable. It manœuvred to the right and left with facility, and, if improved by Engliſh artiſts, might be made uſeful to our canals.

Manufactures.—One of the moſt ingenious and elegant of our manufactures, is that of Straw Hats for the ladies. There is not in the whole range of Britiſh manufactures, another inſtance, in which a material of ſo ſmall expence, can be wrought by art to bring ſo high a price. It is a fact, that a pound of ſtraw, of the value of one halfpenny, when manufactured to the utmoſt perfection of ſtraw hat work, is ſold for not leſs than eighteen guineas! In Hertfordſhire alone, not fewer than 20,000 perſons earn their bread by the ſtraw-work. No other labour of the hands is paid at ſo high a rate. One old man, known to the writer of theſe particulars, was two years ago ſcarce worth as many ſhillings, at the end of one week, as there were days in the week following. He became a dealer in the ſtraw-work; and he now pays and receives ſeveral hundred pounds, every week, with adequate profit.

The improvements in the application of the powers of mechaniſm, to the performance of works which could not formerly be done otherwiſe than by the immediate act of the human hand, are remarkably exemplified in the attempt which now begins to be made on the Colne in Hertfordſhire, to draw ſheets of paper from the pulp of the mill, by a machine alone which the human arm directs but remotely. The art of drawing ſheets of paper from the pulp is peculiarly delicate. Still more admirable will be the ſkill of effecting this by machinery than that which ſpins cotton-yarn and performs ſo many other groſſer labours by ſimilar means.

The accidents ſo often fatal to the lives of ſeamen, in weighing anchor, are totally prevented by the newly diſcovered improvement on the Capſtan. By a ſimple addition to the Capſtan, the anchor can at all times be weighed, without ever ſurging the Meſſenger, or the very great danger attending that ſervice, and in leſs than half the uſual time required, which, at a moment like the preſent, when the anchor is in continual uſe, is not an immaterial circumſtance. The Admiralty and Navy Boards have, we find, ordered this addition to the Capſtans of all the King's ſhips, and which example is followed by the Eaſt India Company for their ſhips, and is getting into uſe in the merchants' ſervice, as their ſhips go into dock.

The Royal Humane Society have awarded to Mr. Knight Spencer, of Bread-ſtreet, Cheapſide, their honorary ſilver medallion, for the invention of a Marine Spencer, for the preſervation of lives in caſes of ſhipwreck, or other accidents at ſea. This ſpencer conſiſts of a girdle to fit the body, ſix inches broad, compoſed of about 800 old tavern corks ſtrung upon a ſtrong wire

well lashed together with lay-cord, covered with canvass, and painted in oil, so as to make it water-proof; when it is wanted, it is to be slid from the feet close up under the arms, and to be fastened over each shoulder by means of tapes or cords. A person thus equipped may safely trust himself to the waves, for he will float head and shoulders above water in any storm, and by paddling with his hands may easily gain the shore.

An economic bedstead has just been invented at Paris, the idea of which is due to Count Rumford. M. Delessert has made several, and the Philanthropic Society has published a description of them, and distributed copies of it at their meeting on the 9th of April last. This bedstead, when complete, costs, at Paris, sixteen francs. It is made in such a manner that there is no occasion either for bed, mattress, or bedclothes. It may be truned up in the day time against a wall, in order to make room, and may be used as a seat or even a chest. It is always clean and harbours no vermin. It may be employed in schools, in great manufactories, barracks, prisons, houses of correction, &c. Models of it have been made in order to fecilitate the construction.

The Society of Sciences and Arts at Grenoble, lately, held an extraordinary public meeting. Among the letters addressed to the society, and read by the secretary, was one from M. Chaix, sub prefect of Briancon, containing a memoir on a new instrument of his invention called Panoramagraph, intended for drawing perspective; another from M. Lornet, describing a new kind of fire engine, a model of which he exhibited in the hall of the Louvre. In the making of this machine he has availed himself of the obervations of M. Dasse, and M Bowin, of Grenoble, both members of the society.

The Society of Agriculture and Commerce of Caen last spring resolving to invite the artists and manufacturers of Calvadas to exhibit such of their productions as were most interesting to the arts and commerce in a place prepared for that purpose. The prefect approved of this patriotic plan of the society, and on the 25th Germinal the hall of exhibition was opened to the public, which saw with satisfaction the multitune of curious and valuable objects produced by the industry of the town of Caen, and the department in general.

On the 25th of April this society met in the same place, where the exhibition had been held. Nine silver medals were distributed among the artists and manufacturers who appeared to the judges to deserve distinction or particular encouragement. One was given to the inventor of an artificial leg to replace the loss of a leg or thigh. This contrivance is at once simple and solid. There motions of the knee and foot perfectly imitate those of nature; in a word the whole is an excellent imitation of the natural leg.

A gun-maker obtained another for the great number of workmen whom he continually employs.

A tanner received the same encouragement.

Two lace-weavers attracted the attention of the jndges; one for having executed a robe and lunic in a very beautiful lace; the other M. St. Jauvre, for his admirable patterns, and the beauty of his work.

Medals were likewise decreed to the porcelain manufactory, which successfully rival all the other in France; to a manufacturer of Li ieux and a citizen of Fulcuise; to the latter for having introduced into the department manufacture of a particular kind of handkerchief. The last was adjudged to a stocking-manufacturer for the good quality and beauty of the articles produced by him.

His Majesty the King of Prussia has honoured M. Cadet Devaux with a letter relative to the application which he had proposed of bones for different branches of alimentary economy. His Majesty likewise transmitted him a medal with his portrait, and the inscription, *Scientiarum et litterarum incrementi.*

Commercial Law Cases

HEREFORD ASSIZES.

CUPPER *v.* WELLS.

THIS case was particularly interesting to landlords and tenants of farms. It was an action brought by a landlord against his tenant at will, for not managing his farm in a husbandman-like manner. The damage was estimated at upwards of 300l.

Mr. Garrow, for the plaintiff, observed, that a very mistaken notion pervaded a great many persons, who thought that a tenant at will had a right to do what he thought proper with the lands let to him. Of that description was the defendant, who having had notice to quit, began destroying the lands he had cultivated to his own advantage for a considerable number of years before; he ploughed up the meadows, sold the crops by auction, parted with the dung and manure from the farm, pulled the bodies of the nectarine and peach-trees from the garden walls, pulled up the plants, and committed every kind of deterioration he could think of, merely from an idea, that being a tenant at will, he had a right to do, as he said before, whatever his will directed. After the case had been proved, and evidence given in defence,

Lord Ellenborough observed, that a farmer was bound to leave his farm in a similar state to that he found it in, notwithstanding he should be a tenant at will. He was also bound to manage it after the custom of the country, and in a husbandman-like way. It was no defence to say he had laid down the meadows, and consequently when called on to quit, he had a right to break them up, particularly when a fair compensation was offered to him. There certainly was something in the cause that partook of a willingness to destroy the farm, and the jury would say what the damages should be.—Verdict for the plaintiff—damages 204l.

SUFFOLK ASSIZES.

Rabbet v. *Raikes.*

This was an action to recover the value of certain pollard-trees, on an estate purchased by the defendant of the plaintiff, in the particular of which it was expressed that all timber and timber-like trees should be taken at a valuation. The defendant resisted payment for the pollards, not deeming them to come under the general description of timber-like trees; but, after a long hearing, a verdict was given for the plaintiff, for the value of the said pollards.

NORWICH ASSIZES.

Self v. *Tyler.*

The action was brought to recover 13l. the difference of the price of 150 quarters of wheat, bought of the plaintiff, a merchant at Lynn, and which was duly shipped for Gainsborough; but which, on account of a reduction in price, the defendant refused to accept, and it was accordingly sold at the market price of the above place, with a difference of the sum for which the action was brought. Verdict for the plaintiff, 48l. damages.

Hewer v. *Archer and others.*

This was an action of Trover brought by the plaintiff, Hewer, against the defendants, Archer and others, for a gelding which they had taken *domage feasant*, in the grain of their inclosed grounds at Lindale, and which they impounded in a common open pound, within the division. It appeared that the plaintiff was not the owner of any lands whatever, neither did he rent any property, save a small cottage; and that, as the commons were at the time enclosed under an act of parliament, the plaintiff had no place to depasture his goods, save in the highways and lanes, and that they frequently broke down the fences, and trespassed on the grounds of his neighbours. It also appeared, that after the gelding was so impounded, the plaintiff tendered damages, which he conceived sufficient for the injury done the defendants, but which they refused to accept, and the gelding remained in the pound thirteen weeks; at the

end of which it escaped thereout, by the gate being (by some means unknown) broken, and was again taken possession of by the plaintiff.

Mr. Justice Chambre, on evidence being adduced that plaintiff possessed no property to entitle him to a right of keeping goods upon the commons (even before the same were inclosed), or in the highways and roads, &c. that if he conceived himself aggrieved, he ought to have *replevied* the gelding so impounded (a tender of damages being inconsistent with law, after the impounding took place) directed a *nonsuit*.

Davies v. *Gilbody*.

This cause is of considerable importance to the commercial world. It appeared that one Wright, a cotton spinner in Manchester, had got a power of attorney, drawn as from himself, his uncle, and the defendant, who is an illiterate and credulous farmer at Barton, wherein they empowered (as if in contemplation of a partnership) one Whalley, of London, to receive and sell such fustian goods as they should transmit to him, and to pay the produce thereof to such person or persons as they should direct.

The action was brought upon the acceptance of Whalley, by procuration of Gilbody and Co. under the power delegated to him as above. And the question was, whether any such authority existed, or not, even supposing the instrument to have been fairly obtained; but of which there appeared considerable doubts? However, without considering that point, Sir Allan Chamber held, that there were no words in the deed to justify such acceptancy; and therefore nonsuited the plaintiff, subject to the opinion of the judges on the point reserved.

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

	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 6 to 3 8	3 6 to 3 8	3 6 to 3 10	3 8 to 4 0
Middling — —	0 0 to 3 4	3 2 to 3 4	3 4 to 3 6	3 4 to 3 6
Ordinary — —	2 10 to 3 0	0 0 to 3 0	3 0 to 3 2	3 0 to 3 2
Market Calf — —	9 6	9 6	9 6	9 6
Eng. Horse — —	14s to 16s	13s to 15s	13s to 14s	14s to 16s
Sheep Skins — —	0 0 to 2 0	0 0 to 0 0	2 0 to 3 6	2 0 to 3 3
Lamb Skins — —	2 0 to 3 3	2 0 to 3 6	2 0 to 3 9	2 0 to 3 9
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*
St. James's—Hay —	5 10 0	5 5 0	5 5 0	4 17 0
Straw —	2 14 0	1 19 0	1 15 3	1 14 0
Whitech.—Hay —	5 12 0	5 10 0	5 11 0	5 — 0
Clover —	6 16 6	6 16 0	6 10 0	6 10 0
Straw —	2 12 0	2 9 0	2 2 0	1 18 0
Newbury.				
Wheat — — —	44s to 67s	50s to 67s	48s to 62s	—s to —s
Barley — — —	23s to 26s	23s to 27s	23s to 25s	—s to —s
Oats — — —	24s to 26s	24s to 26s	25s to 28s	—s to —s
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 — — —	52s to 56s	52s to 56s	50s to 55s	—s to —s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	26s to 30s	24s to 28s	22s to 26s	—s to —s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — — —	22s to 26s	22s to 25s	22s to 26s	—s to —s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s

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

Price of Hops.	First Week	2d Week	3d Week	4th Week
Bags.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Kent — —	70 to 95	80 to 90	84 to 96	84 to 102
Suſſex — —	70 to 90	76 to 84	80 to 86	80 to 95
Eſſex — —	70 to 90	76 to 80	— to —	80 to 95
Pockets.				
Kent (new) —	80 to 112	80 to 105	90 to 116	100 to 118
Suſſex — —	80 to 105	80 to 100	84 to 100	100 to 110
Farnham — —	100 to 140	— to —	80 to 147	140 to 160
Seeds.				
Canary Seed (per buſhel.)	10 to 11	10 to 11	10 to 11	10 to 11
Red Clover ditto —	40 to 120	40 to 120	40 to 120	40 to 120
White Clover, ditto —	40 to 120	40 to 120	40 to 120	40 to 120
Trefoil, ditto —	16 to 54	16 to 54	16 to 54	16 to 54
Carraway ditto —	40 to 44	40 to 44	40 to 44	40 to 44
Coriander ditto —	28 to 32	2 to 32	28 to 32	28 to 32
Turnip, (per buſhel) —	18 to 24	18 to 24	18 to 24	18 to 24
Rye Graſs, (per quarter)	— to —	— to —	— to —	— to —
Cinque Foil, ditto —	— to —	— to —	— to —	— to —
Rape Seed, (per laſt) —	40l to 42l	40l to 42l	40l to 42l	40l to 42l
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 8 to 5 6	4 4 to 5 4	4 0 to 5 2	3 8 to 4 8
Mutton — —	5 0 to 5 8	4 8 to 5 4	4 0 to 5 0	4 0 to 5 0
Veal — —	4 4 to 6 4	5 0 to 6 0	4 6 to 5 0	4 6 to 5 6
Pork — —	5 0 to 5 4	4 8 to 5 4	4 6 to 5 6	4 0 to 5 4
Lamb — —	5 4 to 6 4	4 8 to 5 6	4 8 to 5 4	3 0 to 4 4
Head of Cattle—Beaſts about	1,800	2,000	35,000	2,200
——— Sheep and Lambs	11,000	17,500	2,500	18,000
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 55lb. each	21 to 22	21 to 22	22½ to 23½	22 to 23½
Ditto, 60lb. to 66lb. each	24 to 25	24 to 25	24 to 25	24 to 25
Merchants Backs —	— to 21	— to 21	21½ to 22	21½ to 22
Dreſſing Hides —	22½ to 24	24 to 25	22 to 23½	20½ to 22½
Fine Coach Hides —	24 to 25	21 to 26	23½ to 25	23 to 24
Crop Hides for cutting	21½ to 22½	21½ to 22½	22 to 23	22 to 23½
Flat Ordinary —	20½ to 21	20½ to 21	20½ to 21½	20½ to 21½
Calf Skins, 30 to 40lb. *p.*doz.	28 to 33	28 to 33	28 to 33	28 to 34
Ditto, 50lb. to 70lb. do.	28 to 32	28 to 32	28 to 32	26 to 28
Ditto, 70lb. to 80lb. do.	26 to 28	26 to 28	26 to 28	28 to 33
Sm. Seals (Greenland)	42 to 45	42 to 45	42 to 45	42 to 45
Large do.	5l to 7l	5l to 7l	5l to 7l	5l to 7l
Tanned Horſe Hides	18s to 30s	18s to 30s	18s to 30s	18s to 30s
Goat Skins *per* doz.	—s to —s	—s to —s	—s to —s	—s to —s
Price of Tallow.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
St. James's Market —	4 7½	4 7	4 7½	4 7
Clare Market — —	4 6	4 7½	4 7½	4 7½
Whitechapel Market —	4 6½	4 7	4 7	4 7
Per ſtone of 8lb. Average	4 6½	4 7	4 7½	4 7
Town Tallow — —	77 6	79 6	79 0	78 0
Ruſſia ditto (Candles) —	76 0	77 0	77 0	77 0
Ruſſia ditto (Soap) —	70 0	70 0	72 0	72 0
Melting Stuff — —	68 0	62 0	65 0	64 0
Ditto rough — —	44 0	44 0	44 0	44 0
Graves — — —	14 0	14 0	14 0	14 0
Good Dregs — —	10 0	12 0	12 0	12 0
Yellow Soap — —	82 0	76 0	84 0	84 0
Mottled ditto — —	90 0	90 0	92 0	92 0
Curd ditto — —	94 0	94 0	96 0	96 0
Candles, per dozen, —	12 0	12 0	12 0	12 0
Moulds — — —	13 0	13 0	21 0	18 0

LONDON PRICES OF GRAIN for *September*, 1803.

MARK-LANE, *Monday, September* 5.

Price of Grain, on board Ship, as under.

IN the article of Wheat, to-day, our Market was but moderately ſupplied; a few fine ſamples obtained even higher prices than ſtated in our currency below; but the general ſales were at 2s. and 3s. per quarter cheaper than laſt Monday.

Rye bears nearly the ſame price as laſt week.

Barley and Malt the ſame, with dull ſales.

We have conſiderable arrivals of Oats, particularly from the Northern Counties, which keep their prices.

Tick Beans are rather dearer, and Grey Peas ſcarce. In other articles we have no material difference from laſt ſtatement.

Wheat	48s to 60s	Barley	20s to 25s od	White Peas	44s to 51s od
Fine	59s to 61s 6d	Malt	50s to 56s od	Grey Peas	37s to 40s od
Rye	32s to 34s od	Oats	21s to 26s	Sm. Beans,	32s to 36s 6d
		Polands ditto	27s to 28s od	Ticks,	30s to 34s od

Monday, September 12.

From the continuation of dry weather and the ſhortneſs of the water at Mills, the buyers of Wheat have been but few, and the ſupplies inconſiderable. But few ſales made to-day at prices below.

We have no variation in Barley or Malt to note, except that the ſale of both is dull.

There is a tolerable ſupply of Oats at Market, and beſt ſorts are 1s. per quarter dearer.

Grey Peas, in particular are dearer; and the other ſorts, with Beans fully maintain their prices.

Wheat	48s to 60s	Malt	50s to 58s od	White Peas	46s to 52s od
Fine	61s to 62s 6d	Oats	22s to 26s	Grey Peas	39s to 42s od
Rye	32s to 34s	Polands	27s to 28s 6d	Sm. Beans,	34s to 38s od
Barley	20s to 25s od			Ticks	30s to 34s 6d

Monday, September 19.

The diſtreſs for want of water at the Mills becomes really ſerious, and the Wheat trade is in conſequence very dull, with a reduction of 1s. per quarter ſince laſt Monday.

New Rye obtains high prices, but the old has few buyers.

Barley remains at laſt quoted price. Malt the ſame.

Oats are a ſhort ſupply, and much called for; hence an advance of 2s. per quarter.

We have but few Grey Peas, and theſe are 3s. per quarter dearer.

Beans are dearer, as are the other ſorts of Peas.

Wheat	46s to 59s	Malt	50s to 56s 6d	Grey Peas	42s to 45s od
Fine	60s to 61s 6d	Oats	24s to 27s	Small Beans	35s to 39s od
Rye	32s to 34s od	Polands ditto	28s to 29s od	Ticks	30s to 35s od
Barley	20s to 25s od	White Peas	46s to 52s od		

Monday, September 26.

The late rains, and ſucceſſion of fine weather, has enlivened the Corn Trade to a briſkneſs not lately experienced.—We have tolerable ſupplies of Wheat, and the ſales are free, but prices remain without alteration.

Barley and Malt have likewiſe a more ready ſale.

New Rye, for ſeed, as before obſerved, is very dear, but not higher than forty-ſeven ſhillings.

White Peas are up full three ſhillings per quarter. Grey are alſo dearer. Beans are nearly as laſt Monday.

Oats are a middling ſupply, with good prices for prime ſamples.

Wheat	48s to 60s	Malt	50s to 56s	Grey Peas	44s to 48s od
Fine	61s to 62s 6d	Oats	24s to 27s	Small Beans	35s to 39s od
Rye	30s to 34s	Polands ditto	28s to 30s od	Ticks	30s to 34s 6d
Barley	20s to 25s od	White Peas	50s to 55s od		

BANKRUPTCIES.

The Solicitors Names are between Parentheses.

ABBOTT, T. yarn maker, Needham Market. (Wilson, Cattle ſtreet, Holborn
Aſpinall, Edw. Wigan, calico manufacturer. (Gaſkall, Wigan
Bennett, J. Norton, ſhipwright. (Tapender, Faverſham
Beſtow, F. Nottingham, hoſier. (Kinderley, Long, and Ince, Chancery lane
Blaxcell, A. Kelſale, tanner. (Moore, Woodſtock ſtreet
Biſhop, J. Sheerneſs, ſhopkeeper. (Chilton, Chancery lane
Burke, J. F. Cannon ſtreet, ſhip owner. (Atcheſon, Ely place
Carew, J. Briſtol merchant and broker. (Hill and Meredith, Gray's Inn
Chaplin, J. jun. Nuneaton, carpenter and grocer. (Forbes, Ely place
Doughty, J. Stokeſley, grocer, and linen and woollen draper. (Lodrington and Hall, Secondaries office, Temple
Ellis, Wm. Halifax, ſcrivener. (Gleadhill and Payne, Lothbury
Eaton, D. I. bookſeller, Stratford-green. (Smith, Rober ſtreet, Adelphi
Fletcher, S. Mancheſter and Stockport, linen draper. (Foulkes, Bury place, Bloomſbury ſquare
Forbes, G. Copthall court, merchant and underwriter. (Templar, Burr ſtreet
Francis, J. Greek ſtreet, and Rathbone place, china and glaſs man. (Illingworth, Penton ſtreet, Pentonville
Fayene, P. Bedford row, inſurance broker. (Winter, Kaye, Beckwith, and Freſhfield, Swithin's lane
Gange W. tallow chandler, Dorcheſter. (R. Strickland, Dorſet
Handley, J. cornfactor, Aſhby de la Zouch. (Rider, Fetter lane
Holmes, D. Liverpool, grocer. Kearney, London
Hoſch, I. and E. Bientz, Budge row, London, and G. Loſh, J. Deitrick Lubren, and W. Loſh, Newcaſtle, factors. (Firm Hoſch, Bientz, and Co.) (Shaws, Tudor ſtreet
Hantell, E. A. Kingſton, Hull, auctioneer. (Roſſer, Kirby ſtreet
Henderſon, R. Foſter lane, warehouſeman. (Berry, Walbrook
Jay, J. Norwich, coal merchant. (Bygrave, Norwich
Jones, E. Hereford, butcher and maltſter. (Downes, Hereford
Jones, E. ſen. and jun. Hereford, cornfactors. (Downes, Hereford
Irvin, T. and Holden, James, Halifax, dyers. (Wingleſworth, Holborn court, Gray's Inn
Knowles, W. Wheatley lane, cotton manufacturer. (Ellis, Curſitor ſtreet
Langſton, R. Cheſter, and M. Gafney, Chetwood, cotton merchants. (Firm, in London, R. Langſton and Co.) (Edge, Mancheſter
Liddell, I. Newcaſtle upon Tyne, grocer. (Wilſhur, Gray's Inn ſquare
Lanier, T. ſhoe manufactory, Stafford. (Wilkington and Small, Temple
Lac, T. Pocklington, linen draper and grocer. (Evans, Furnival's Inn
Leeman, J. Peterborough, linen draper. (Thomas and Sons, Fen court, Fenchurch ſtreet
Morley, W. Shoe lane, baker. (Bradley and Arrowſmith, Middle New ſtreet, Gough ſquare
Miles, E. Newcaſtle, miller. (Bainbridge, Newcaſtle
Nuttal, C. Mancheſter, cotton ſpinner. (Edge, Mancheſter
Naylor, R. Baſinghall ſtreet, merchant. (Brown, Little Friday ſtreet
Newman, R. Dartmouth, ſhip builder. (Darke, Princes ſtreet, Bedford row
Porter R. Great Driffield, ſpirit merchant and cornfactor. (Sherwin, Great James ſtreet, Bedford row
Pycock, T. and M. Ward Pycock, Kingſton on Hull, builders, (Firm T. Pycock and Son.) (Ellis, Curſitor ſtreet
Parker, J. Glamford Biggs, maltſter. (Brewer, Lodington, and Hall, Temple
Pratt, P. Hart ſtreet, Bloomſbury, glaſs man. (Flaſhman, Ely place
Rolls, J. B. Birmingham, merchant. (Swain and Stevens, Old Jewry
Rowland, N. and P. Great Coggeſhall, blanket makers. (Allen, Clifford's Inn
Redmond, J. Liverpool, linen merchant. (Broad, Dram ſtreet, Southwark
Starford, J. and G. Durham, woollen manufacturers. (Cicmell, Staple's Inn
Sharp, P. Liverpool, joiner. (Blackſtock, Temple
Shaw, G. Bleath Gill, dealer in wool. (Fothergill, Clifford's Inn
Stanley, C. Durham, ſtationer. (Wrangham, Seething lane
Tindal, T. Weymouth, grocer. (Alexander, Bedford row
Thurgood, T. Welwyn, ſhopkeeper. (Townſend Staple's Inn
Whitaker, G. and Pitt, James, coach makers, Birmingham (Worthem and Stephenſon, Cattle ſtreet, Holborn
Wood, R. Slaithwaite, cornfactor. (Battye, Chancery lane
Wylie, D. and Wilkinſon, John, fuſtain manufacturers, Mancheſter. (Swale, New Boſwell court
Whitehead, E. C. Witham, carpenter, Lang, Great Preſcot ſtreet
Wright, J. Rouſe Farm, Weſt Wickham, bruſh maker. (Burgoyne and Fielder, Duke ſtreet, Groſvenor ſquare

DIVIDENDS ANNOUNCED.

BREANT, J. Monkgate, York, butter and bacon factor, Sept. 15
Ball, G. Launceton, vintner, &c. Oct. 4
Brown, J. Strand, gun maker, Oct. 1
Brandith, J. Haines, Birmingham, factor, Oct. 1
Collier, W. Reading, carpenter, Sept. 13
Cheap, A. and A. Loughnan, New court, Swithin's lane, merchants, Joint Eſtate, and ſeparate Eſtate of Loughnan, Oct 1
Dulau, A. Soho ſquare, bookſeller, Sept. 27
Frith, J. Bradford, merchant, Sept 21
Fither, J. Poſſington, ſeedſman, Oct. 5
Fowler, J. Foſter lane, warehouſeman, Sept. 27
Fenwick, T. ſen. and jun. Boſton, drapers and taylors, Oct. 1
Farquhar, C. Madox ſtreet, builder and carpenter, Nov. 1
Goldſmith, L. Thavies Inn, and Great Trinity lane, merchant, Sept. 24
Gibſon, R. Kochdale, joiner and carpenter, Oct. 11
Greenwood, S. Newman ſtreet, coach maſter, Oct. 11
Gray, J. Newcaſtle merchant, and underwriter, Sept. 13, final
Gadd, J. Briſtol, dealer, Sept. 24
Graham, J. late of Mildenhall, and now of Stoke, hair merchant, &c. Oct. 7
Garwood, J. Royſton, victualler and innholder, Oct. 4
Greenwood, S. Newman ſtreet, coach maker, Nov. 7
Hunter, P. Durham, ſcrivener, Sept. 14
Halfhide, J. ſen. and jun. and E. Halfhide, Merton, calico printers, ſeparate Eſtates, Sept. 3
Hancock, I. Briſtol, cheeſe factor, Oct. 12
Harriſon, J. Stoke on Trent, manufacturer of earthenware, Oct. 11
Hodgſon, J. Whitehaven, merchant, deceaſed, Oct. 17
Humphries, E. Briſtol, victualler and ſkinner, Oct. 30
Holoway, J. P. Swithin's lane, wine, ſpirit, and beer merchant, Nov. 8
Johnſon, T. Kidderminſter, grocer, Oct. 6
Jewitt, W. Smith Lodge, brandy merchant, and ſeedſman, Oct. 4
Jenkin, Tho. Abchurch lane, dealer, Nov. 5
Kent, A. and S. Pemberton, Little ſtreet ſquare, merchants, Sept. 17
Lloyd, R. Kington, Hereford, baker, Sept. 22
Lewis, T. Bocking, barze maker, Oct 6
Leigh, T. Foxdenton, cotton manufacturer, Oct. 8
Middleton, W. J. Holland, Pemberton, and G. Felton, Liverpool, merchants, ſeparate Eſtate of Pemberton, Sept. 23
Moody, C. Longtown, dealer, Oct. 8
Mallalieu, G. Salford, cotton manufacturer, Oct. 8
Morville, G. Lancaſter, merchant, partner with G. Harriſon, Sept. 29
Malins, W. Evertham, maltſter, Oct. 12
Moore, N. Lancaſter, merchant, partner with J. Benſon, J. Wilkinſon, and R. Pendleton, ſeparate Eſtates, Oct. 21, final
Newton, F. Whirchurch, innholder, Oct. 14, final
Needham, T. Aſhby de la Zouch, hoſier, Oct. 6
Peirſon T. and W. Samſon, Ruſſia row, Milk ſtreet, Iriſh factors, Oct. 11
Peirſon, G. Cockermouth, woollen manufacturer, Sept. 23
Proctor, J. jun. Lancaſter, merchant, Sept. 29
Perſent, M. W. and A. W. Bodeker, Little St. Helen's, merchants, Dec. 3
Riddle, A. and R. High ſtreet, Southwark, Sept. 24
Richard, J. P. Liverpool, merchant, (Firm Richard and Mathuſon) Oct. 14
Smith, T. Mancheſter, callico printer, Sept. 24
Sturrock, J. late maſter of the Furluit Weſt Indiaman, Oct. 22
Seymour, H. Maidenhead, coal merchant, Sept. 27
Seſſions, J. Kingſton, Hull, merchant, Oct. 14
Taylor, J. Worceſter, draper, Dec. 31
Toy, E. Plymouth dock, draper, Oct. 29
Turnbull, J. J. Forbes, R. Allen Crawford, and D Shene, Broad ſtreet, merchants, ſeparate Eſtates of Turnbull and Forbes, final, Sept. 7
Thompſon, J. and C. M'Adam, Liverpool, merchants, Oct. 11
Tonge, C. Liverpool, merchant, Oct. 8
Tennant, R. jun. Wakefield, merchant, Oct. 22
Wilkinſon, R. and G. Daniel, Kingſton, Hull, merchants, Sept. 29
Williams, T. and W. Pondered, Little Sutton ſtreet Clerkenwell, tin-plate workers, Oct. 8
Warren, J. S. Birmingham, dealer, Sept. 27
Wigan, T. Briſtol, ſilverſmith, Oct. 24
Wakefield, J. jun. Northallerton, mercer, &c. Oct. 8
Wright, T. Leeds, merchant, (ſurviving partner of M. Cawood.) Oct. 17
Williams, R. Crickhowell, ſcrivener, Oct. 8
Worthington, W. Bradford, clothier, Oct. 11
White, R. Evertham, currier, Oct. 12
Whitehead, W. Laceby, ſhopkeeper, Oct. 15, final

PRICES OF COALS AT THE COAL EXCHANGE, LONDON,
For SEPTEMBER, 1803.

Names of Coals.	Mon. 5th.	Wed. 7th	Frid. 9th	Mond. 12th	Wed 14th	Frid. 16th	Mond. 19th	Wed 21st,	Frid. 26th	Mond 26th,	Wed. 28th
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Adair's Main				46			46 9				
Baker's Main											
Bedford Main				44 6							
Benton	46	46						48		51	
Biddick Main											
Bigg's Main	47 6		48 6	48 6	50		51 0		52	52 6	53 6
Bladon Main											
Blyth											
Boundry											
Bourn Moor	44			45 9	46 6		47 6	47		49	
Brandling			46								
Birtley								44 6			
Byker											
Byker, High & Low											
Cowpen	44 6										
Derwent											
Eden Main				46 3					48 3		
Eighton Main	44		46					46 6			
Flockton											
Greenwich Moor											
Haigh Moor											
Hartley	44	44			47			46 6			
Heaton Main	47 6	47 9			50		51 9	49 6		52 6	
Hebburn Main	47 6		48 6	48 9	50		51	50 3	52		
Holywell				46					47 3		
Kenton Main				48 6		55 6	51			52 6	
Lambton's Low dit											
Lawson's Main											
Morley Hill											
Montague Main	44 6										
Mount Moor											
Murton											
Murton High Main							44 6				
Newbottle											
New Tansfield											
Pitt's Tansfield M.	44 9				47 6			46			
Primrose				45							
Pontop		44 6		45 6				45 9			
Percey	47 3	48		48 6			51			52 6	
Rectory				46							
Russel's Main											
Sheriff Hill											
South Moor		43						47			
Stanley Main											
St. David											
Team											
Tyne Main											
Usworth Main											
Wallbottle Moor				46	46 6			46			
Walker	47 3			48 3	49		40 9	49		52 6	
Wall's End	48 6	48 9		49 6	50 6		51 9			53	
Warwick										47 6	
Wharton											
Willington	47 3				50		51 6		52 6	52 6	
Wylam Moor				46			47				
Wemworh											
Whitefield											
Wooler Main											

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 SEPTEMBER 17, 1803.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Middlesex	59	9			25	0	25	10	35	11	42	7		
Surrey	59	6	47	6	26	0	26	0	36	0	42	0		
Hertford	56	2	35	6	25	9	26	0	35	3	38	9		
Bedford	54	9			25	9	25	6	34	10				
Huntingdon	55	4	31	0	22	9	21	0	28	4				
Northampton	55	10	31	0	23	0	22	9	32	3				
Rutland	60	6			23	3	22	0	36	0			57	3
Leicester	53	11			24	0	20	0	38	6			35	4
Nottingham	62	8	38	6	23	3	23	6	40	2				
Derby	60	10			26	0	24	3	38	3		9	29	0
Stafford	53	6			30	0	21	0					31	4
Salop	46	9	28	6	27	0	23	7	35	9	40	0	63	7
Hereford	46	6	32	0	25	11	25	5	37	1	34	1	61	0
Worcester	49	8	34	0	22	2	26	2	40	8	36	1		
Warwick	53	9			26	7	25	3	42	0			42	5
Wilts	53	2			26	2	25	4	37	8				
Berks	60	2			26	8	26	3	36	1	42	4		
Oxford	56	3			24	9	23	10	36	11	41	0		
Bucks	55	11			25	10	25	2			43	3		
Brecon	49	7	32	0	21	10	20	0					36	3
Montgomery	46	9					16	11					38	2
Radnor	48	6			24	9	23	11					67	10

Maritime Counties.

Essex	61	2	35	0	23	0	28	3	33	3	38	0		
Kent	58	3			26	10	28	8	34	6	39	0		
Suffex	53	4			25	0	27	6						
Suffolk	58	4			20	8	25	11	30	0	42	10	52	4
Cambridge	52	5					20	2	30	3				
Norfolk	58	1			20	10					32	0		
Lincoln	59	10	33	6	23	2	20	5	32	0				
York	57	8	37	3	26	11	21	7	37	3	57	8	41	3
Durham	54	7					23	9						
Northumberland	52	0	38	0	24	4	23	0						
Cumberland	57	5	40	10	28	7	25	2						
Westmorland	61	4	59	4	27	4	27	4						
Lancaster	56	2					22	10					19	5
Chester	51	2					22	2					19	8
Flint	54	0												
Denbigh	55	5					21	4					35	7
Anglesea							15	0						
Carnarvon	61	5			24	6	15	0					35	9
Merioneth	61	9			26	8	20	0					33	4
Cardigan	57	10			24	0	16	0						
Pembroke	52	1			23	10								
Carmarthen	56	8			22	0	14	5						
Glamorgan	53	2			26	0	19	2						
Gloucester	52	7			24	8	22	11	36	6	34	7		
Somerset	56	2			25	1	20	4	37	1	38	4		
Monmouth	54	8												
Devon	55	1			24	4	21	3	38	6	24	0	27	6
Cornwall	66	1			26	2	20	2						
Dorset	54	10	36	0	25	0	23	3						
Hants	54	0			24	0	25	9	35	9				

A TABLE of the Prices of STOCKS in *September*, 1803.

		Bank Stock.	3 per Ct. Red.	3 per Ct. Consols.	4 per Ct. Consols.	5 per Ct. Navy.	5 per Ct. Loyalty	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Ann.	Irish 5 pr. Cent	Omnium.	India Stock.	English Tickets.	Consols for Account
Sept.	1	143½ Shut.	Shut.	54⅜	70¼	86⅞	90⅝ Shut	16 7-16	3⅛		9¾		6¾ ½		17 5 0	54⅜
	3			54⅝	70½ Shut	87		16½ Shut	3⅛				6½ ¼	166	17 6 0	55
	5			54½		87⅛			3⅛		9¾ 13-16		6¼ ⅛		17 10 0	55
	6			54		87¼				53⅜	9 3-16		6¼ 7	165½	17 10 0	54⅜
	7			54		87⅜				53½			6¾ 7¼		17 00 0	54½
	8			53⅝		86¾				53⅜	9¾ 11-16		7¼ ¾		17 10 0	53⅝
	9			54		87				53⅛			7½ ¼	164½	17 10 0	54
	10			54⅞						53¼	9⅝ 11-16		7¼ 7		17 15 0	54⅛
	12			54⅝		87⅜							7¼		17 15 0	54¼
	13			53⅝		87⅛					9⅝ 9-16		7¼ ¼		17 15 0	53⅞
	14			54		87¼				53⅜	9⅝		7¼ ¼		18 0 0	54⅜
	15			53¾		87¼				53⅛	9 9-16 ⅝		7½ ¾		18 0 0	53⅞
	16			53⅝		87¼				53⅜					18 0 0	53⅞
	17			53½		87⅜				53⅝	9⅝		8		18 5 0	53¾
	19			53½		87⅛							8		18 5 0	
	20			54		87⅛							8 7¾		18 15 0	54⅝
	23			53¾		87⅛				53⅛	9⅝ ½		7½ 8		19 5 0	54⅝
	24			53⅝		87⅜							7¾ 8		20 5 0	53⅞
	26			53¼		87⅛				53⅝	9 7-16		8		20 5 0	53⅞
	27			53½		87⅜				52¾	9⅜ 7-16		8 8½	162	25 10 0	
	28			52½		86⅞				52½			8¼ 10		25 10 0	52⅝

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

TO OUR CORRESPONDENTS.

WE shall be happy to see some answer from our Correspondent Agricola Northumbriensis in reply to the observations of some of our friends on the same subject, in the present number. He will see the attention we have paid to his paper on Restrictive Covenants, &c.

We thank Chorographus for his intention to give us some account of the peculiarities he has observed in Agriculture during his travels in the different counties, and we think nothing can be much more essential to the improvement of the country, than the opportunity these details would give us of attending to comparative agriculture.

The paper from Warwick-lane on the necsessry connection of Chemistry and Agriculture is received.

Also another from Pentridge on the *pabulum vegetatiorum.*

The enquiries respecting the propogation of Spanish Sheep in this country, &c. will be inserted in our next number.