Mr. George Pumps Water Wheel.

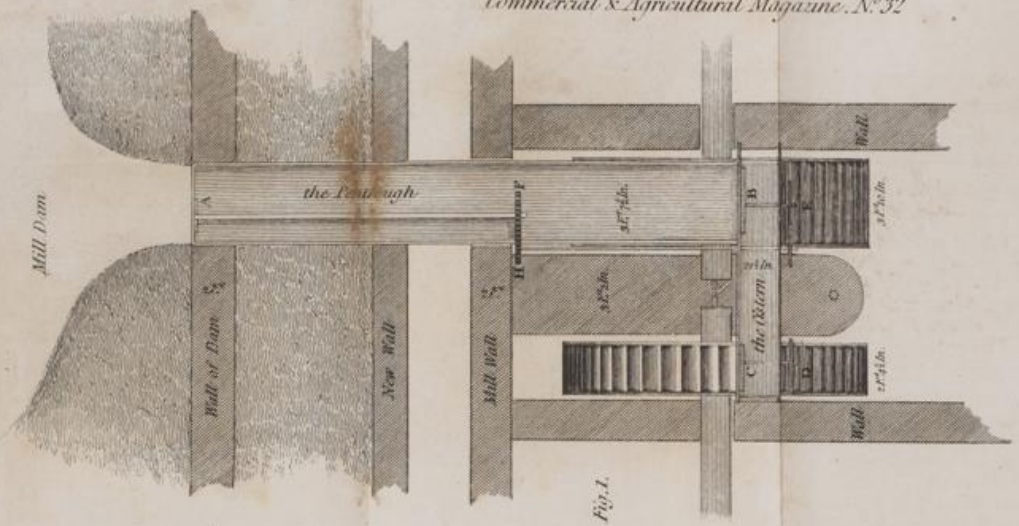

Fig. 1.

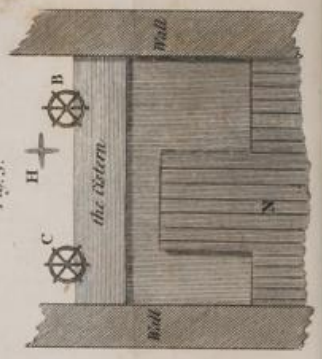

Fig. 3.

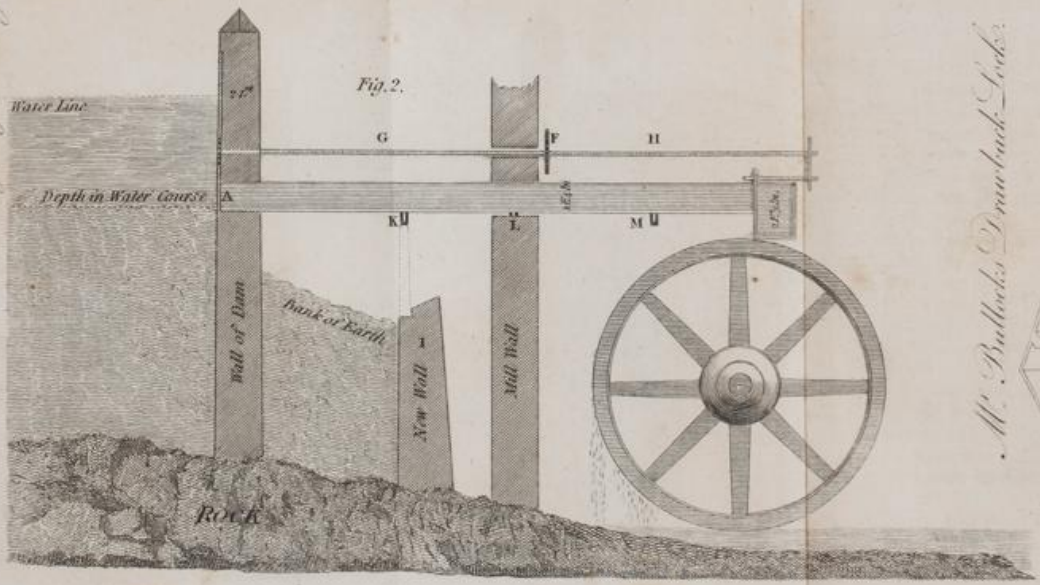

Fig. 2.

Mr. Bullock's Dovetail Lock.

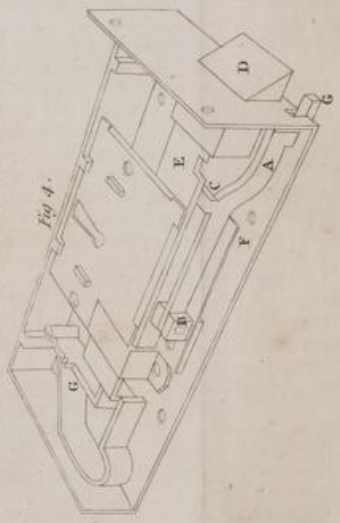

Fig. 4.

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THE
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No. XXXII.] MARCH 1802. [Vol. VI.

DESCRIPTION OF Mr. GEORGE QUAYLE's PEN-TROUGH FOR A WATER CORN MILL;

WITH A PLATE.

To the Editor of the Commercial and Agricultural Magazine.

Sir, *Iſle of Man, March* 7, 1802.

HAVING had occaſion to repair a Water Corn Mill, the machinery and floor of which had been deſtroyed by means of leakage from the pen-trough and dam; I was induced to turn my attention to the moſt effectual means of preventing the recurrence of the ſame evil. In the expedients I adopted, there is nothing new in principle, but in the combination of them I believe there is. As the miſchief they are intended to prevent is frequent, and as the making public the mode I have adopted, may furniſh hints for the improvement of others, I have incloſed you a ſhort ſtatement of it, which you are at liberty to lay before the publc.

The work was begun by removing as much of the ſoil between the mill and the dam, and as low as the rock on which the foundation of the mill ſtood, as allowed room for building a wall, leaving a vacancy through which a man could paſs between them. The face of the wall, on the dam ſide, was perpendicular, but with an angle of one foot in ten on the outſide, to enable it to ſuſtain the lateral preſſure. By this means all leakage from the dam to the mill was entirely cut off, and that from the pen-trough was alſo prevented from doing injury, by carrying the ſide walls, containing the water wheels as high as the ſecond floor of the mill, and about three feet above the top of the ciſtern.

The plan will ſhew the mode of laying the water on the wheels. By having an outer ſhuttle to the pen-trough, every advantage of keeping the water at as great a height in the mill dam as the ſituation will admit, is retained without the expence and inconvenience of being obliged to provide a pen-trough equal in height to the water line in the reſervoir. In a deep pen-trough the water finds more crevices and ſooner rots it. The expence of conſtructing it is alſo greater, as it muſt be made proportionately ſtronger to ſupport ſo much additional weight.

My pen-trough coſts much leſs money, and anſwers the purpoſe equally well as a deeper one.

The water in my pen-trough being carried paſt the centre of the water wheel, and returned back upon it, cauſes the wheel to

reſolve in that direction, ſo as to run leſs riſk of being choaked or injured by any rubbiſh or ſtones coming through the pen-trough, to which another advantage is added, namely, by laying the water on thus from behind the top of the wheel, none is loſt by daſhing over it, or by the ſhrouds, as all the water and power uſually ſo miſs-ſpent, muſt by this mode be exerted againſt the wheel.

The depth of the pen-trough might be ſtill further reduced, if it was not for the circumſtance of the water riſing to extraordinary height at the moment the wheel is firſt ſet in motion: but the depth of the ciſtern probably could not be well diminiſhed; as it will require 22 inches or 2 feet head, to throw the water into the buckets with ſufficient impetus to act on the firſt buckets, until it reaches the point where gravity begins to act with advantage.

This mill had formerly only one water wheel, but from what information I could obtain, there was every reaſon to prefer having two, which mode I therefore adopted. Where water is deficient in ſummer, a great waſte is occaſioned when there is but one large wheel; nearly the ſame quantity of water being expended whether much or little work is wanted. By having the three ſkuttles as deſcribed in the plan, the miller can manage them with the ſame eaſe as if there was but one in the uſual way.

Although this method of retaining water in or uſing it from a reſervoir, where its depth is ſubject to great variations, is not ſo minutely accurate as it might be made; yet for a corn-mill the delivery of water by the preſent plan will be found ſufficiently regular to anſwer every purpoſe.

With reſpect to the particular caſe I have now ſtated to you, I can aſſure you that had the preſent plan been adopted by my predeceſſor, it would have occaſioned a ſaving of above 300l. in the repairs I have been obliged to make.

I was the more induced to take the ſtep by my obſervations in various parts of Great Britain and Ireland, where in many of even very extenſive works wrought by water, groſs errors on this ſubject are ſuffered to exiſt: one inſtance particularly, in the north of England, I could mention of conſiderable iron works, where above half the water is abſolutely waſted.

As it is very fair to ſuſpect a man will be rather partial to his own ſchemes; I ſhall beg leave to adduce, as a ſort of proof of the utility of my plan, the opinion of a man who cannot be ſuſpected of partiality or indifference. The miller, who held this corn mill for many years before this alteration, and continues to hold it, has conſented to an advance of 58½ per cent. on the former rent.

Some of the advantages ariſing from my plan are, that the pen-trough which conveys the water from the reſervoir to the wheel coſts much leſs money than the deep open troughs uſed at

some mills, or the close confined conveyance for water in wood or iron employed at others :

That my pen-trough is not so liable to leak or damage the buildings as those abovementioned; it on the contrary may be easily kept in order, and takes up less space :

It can be more easily cleansed, and is not subject to be choaked with mud as close water pipes are:

None of the water is lost in its delivery upon the wheel, but the whole acts upon the buckets with full power and weight :

The head of water in the reservoir may be raised to any height it can be supplied, and the whole of that water drawn upon the water wheels :

The shuttle betwixt the reservoir and pen-trough is opened or shut, at pleasure and with ease, by a wheel and pinion contrived for that purpose, as described in the plate :

Two water wheels are worked from one trough, either together or separately, as the supply of water from the reservoir will permit ; the broad wheel works two pair of mill stones, the narrower one pair. Other machinery are also worked by the water wheels. I am, Sir, your's, &c.

GEORGE QUAYLE.

Reference to the Engraving of Mr. Quayle's Water Wheels.

Fig. 1. Plan of the pen-trough, &c.
Fig. 2. The side view.
Fig. 3. The front view.

A The outer shuttle, which admits the water from the mill-dam into the pen-trough.

B and C, The shuttles to the water wheels D and E, which are raised and depressed by racks and pinions.

On account of the great distance between the water-shuttle and the two inner shuttles, the shaft of the pinion working in the rack of the outer shuttle is divided into two parts, G and H. To make it work with greater ease, an additional power (of four to one) is got by a multiplying wheel and pinion at F, which answers the further purpose by throwing it in a lateral direction to clear the wheel, lifting the pinion B. By this means the miller has the power of working the three shuttles on the same spot as in Fig. 3.

K, L, and M, are three supports for the pen-trough. There are also two under the cistern, which go into the side walls, and one perpendicular prop between the wheels. These are not laid down in the plan, as they might only tend to confuse it.

N is a platform between the wheels, with a partition round it 4½ feet high, where the person stands to work the three shuttles.

O, Pillar to support the head stocks.

ON DRAINING LAND WITH CHALK INSTEAD OF STONES.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

I Have juſt received a letter from a Gentleman in Yorkſhire deſcribing a method of draining land, which he has adopted with a very beneficial effect; and as the mode of forming the drains is, to me, entirely new, and appears of conſiderable importance, I ſhall take the liberty of ſending the deſcription to you for publication, although I have not received any formal permiſſion from the writer to do ſo. Indeed, as far as I recollect, and I have read attentively all your Magazine, excepting a few of the firſt numbers, you or your correſpondents have ſcarcely ever mentioned the ſubject of draining, although there are very few branches of huſbandry more deſerving of the notice of every man who is engaged in the improvement or culture of land.—There are very few farms that are not capable of reaping conſiderable benefit form under-ground draining; and there are many that might thereby be at leaſt doubled in their value, and at no great expence; and the man, moreover, who attempts to drain his land, is ſure to attain his object either totally or in part.

The deſcription of the method of draining, which I allude to above, I ſend to you in the expreſs and perſpicuous words of my correſpondent, as follows:

"I have experienced very great benefit from under-draining, and have entirely dried many acres of land which were totally uſeleſs during half the year. I firſt began in the autumn of 1799, and was induced to try chalk from having great plenty near me; and alſo from having ſeen other methods of draining fail, in many different places. I made my cuts according to the common method of draining; and in number according to the quantity of water they had to carry off. After having left them open a ſufficient time to aſcertain that the water ran freely, I then had the chalk broken into pieces, about the ſize of a man's hand, and filled them nearly to the top, then laid the top ſod with the graſs towards the chalk, to prevent the earth from getting in, and covered it over with the remainder of what had been thrown out. From the quantity of water iſſuing therefrom being great, I found it neceſſary to make a ſort of main drains, to receive the contents of theſe ſmaller ones: thoſe I left open during the firſt winter: but finding great inconvenience from the treading of cattle, and alſo much loſs of ground, I had them alſo filled with chalk, and ſoon found that the water ran as freely through them as the ſmaller ones. I had the chalk in theſe covered over with a thick layer of evergreen-boughs, before we laid on the earth, as that getting to the chalk would immediately ſtop it up, of which I have at this time an inſtance, in a drain which runs from my

houſe, which I chalked, but the waſhings, &c. I find will not paſs through it.

I let the work of the ſmaller drains for 9d. per rood; and the larger ones ſome at 1s. and others 1s. 3d. The digging of the chalk and the carrying of it was done by my own people and horſes. You will, perhaps, think this very expenſive; but if I am not miſtaken in the nature of chalk, its durability will pay in the end. I find it neceſſary to arch the ends of the main drains for a ſhort way with brick work, otherwiſe the froſt pulverizes the chalk; and for that reaſon alſo when you lead your chalk in froſty weather, which is generally the moſt convenient time, it ſhould be put in and covered immediately, otherwiſe there will be great waſte, beſide danger of injuring the drain. One great advantage I conceive chalk-draining to have over ſtone-draining, is that *moſs will not grow to the chalk*, but ſtone-drains are frequently ſtopped thereby."

I cannot but think, Mr. Editor, that your readers, in general, will thank you for this piece of information, eſpecially ſuch of them as reſide in the vicinity of chalk-hills, for I have obſerved the land at the foot of theſe hills peculiarly to ſtand in need of draining. I am, your's

A FRIEND TO IMPROVEMENTS.

March 13, 1802.

ACCOUNT OF THE TRADE TO FRANCE FROM CONSTANTINOPLE, BEFORE THE WAR.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

THE following account of the trade between the capital of the Turkiſh Empire, and the ports of France, eſpecially Marſeilles, before the war, is founded upon authentic documents. It may ſerve to evince, that, to prevent the commercial aggrandizement of the French Nation, Britain would do well to make new efforts, in order to outrival their competition in the Turkiſh markets.

WOOL is the primary article of exportation from Conſtantinople. Much of this wool is from the ſkins of the ſheep ſlaughtered by the butchers in the capital. The reſt is brought hither, as to a great ſtaple of wool, from the Boſphorus, the Propontis, the Helleſpont, from Romania, Bulgaria, Beſſarabia, and from the ſouthern confines of the Black Sea. It is coarſe; but, in mixture with the wools of Spain and of Rouſſillon, it ſerves as a material for thoſe cloths, which the French make in imitation of Engliſh broad-cloth, and to which they give the appellation of *Londrins*. The wool annually imported from Conſtantinople and two or three other Turkiſh ports, to Mar-

ſeilles, has been ſeldom leſs than 62,499*l.* ſterling in value. In ſome years, its value has ariſen, even to 83,333*l.* ſterling.

CAMELS' HAIR is exported from Conſtantinople; to which, however, it is previouſly brought from Perſia and Aſia Minor. It is of three different colours: and, with the colours, its other qualities differ, likewiſe. The fineſt and deareſt ſort is black: the red is next to the black, in the value of its qualities: there is a grey ſpecies, worth only half as much as the red. From 24,000 lib. to 30,000 lib. of this wool has been formerly imported every year from Conſtantinople to Marſeilles. Its value might be about 2,000*l.* ſterling. It is uſed chiefly, as a material in the manufacture of hats.

In the ſouthern and weſtern parts of the Propontis, the culture of COTTON prevails. It extends throughout all the more ſouthern parts of the Turkiſh dominions, on the Mediterranean. France has uſed to import of this commodity, unſpun and raw, from Conſtantinople, to the value of about 5,208*l.* ſterling.

Of COTTON-YARN, partly white, and, in part, dyed red, the annual importation from Conſtantinople to Marſeilles, was, when the French Trade was flouriſhing, about 1,750*l.* ſterling, in value.

The BUFFALO'S HIDE is thicker, and in its intimate texture conſiderably firmer than that of the Ox. Its uſual weight is from 80 to above 100 lib. The hide of the male is more valuable than that of the female. This animal more uſeful by its milk and hide, than by its fleſh, is common in the Turkiſh provinces of Romania, Balgaria, Beſſarrabia, Wallachia, and Moldavia. The hides are brought from theſe provinces, for ſale at Conſtantinople. From Conſtantinople, the common yearly exportation of them to Marſeilles, has been between 5000 and 6000, at half a crown each, making a total value of not more than 750*l.* ſterling. They are tanned and dreſſed in France for ſole-leather.

OX and COW HIDES, brought from the confines of the Black Sea, to Conſtantinople, are thence, in the number of 2000 or 3000, at the price of about 11*d.* ſterling each, imported to Marſeilles. The total value of theſe, then, does not exceed 137*l.* 10*s.* ſterling.

HARE-SKINS, to the annual value of 218*l.* 15*s.* ſterling, are exported from Conſtantinople, Adrianople, and Burſa, to Marſeilles. Hares are exceedingly numerous in Aſia Minor, Romania, and Bulgaria, the provinces which ſupply this exportation.

MOROCCO-LEATHER is manufactured, in the greateſt perfection, at Gallipoli, at the Dardanelles, and in certain towns of Aſia Minor. Lime, ſumac, the cup of the *Quercus Velanida*, dog's dung, roots of Madder, cochineal, kermes, and the ſeeds of a

particular rhamnus, are uſed in its preparation. The French import of this leather from Conſtantinople, to the value of about 150*l.* ſterling, annually.

The SILKS, now commonly known in Conſtantinople, are thoſe of Burſa, Adrianople, and Bulgaria. The French import of theſe ſilks from that emporium, quantities to the annual value of perhaps 4,000*l.* ſterling. The ſilk of Burſa, is the beſt.

BEE'S WAX is brought to Conſtantinople, in great quantities, from the coaſts of the Black Sea, the Propontis, and the Helleſpont, alſo from Romania, Bulgaria, Wallachia, and Moldavia. It is exported from Conſtantinople to France, in quantities of which the yearly value may be ſomewhat more than 12,000*l.* ſterling.

The ſhips bringing Georgian, Circaſſian, and Mingrelian female ſlaves, bring, at the ſame time, to Conſtantinople, a quantity of BOX-WOOD, the growth of Mount Caucaſus, and the moſt valuable in its qualities. There comes, likewiſe, ſome of the ſame timber from one or two other places. Of this material, the French have been in uſe to import about 500*l.* ſterling worth, annually, to Marſeilles.

The COPPER-MINES of Tocat, and others in Aſia Minor, ſupply the inhabitants of the Turkiſh empire, with that metal, in ſuch abundance, that Turkey pays, in copper, for a good part of its imports from India. The French merchants take of this copper, from Conſtantinople, a quantity to the value of about 500*l.* a year.

Copper COFFEE-POTS made at Trebizond, are alſo imported from the Turkiſh capital to Marſeilles, to the value of above 200*l.* ſterling, yearly.

ORPIMENT to the annual value of 90*l.* ſterling, is brought from Conſtantinople to France.

Stags are numerous in the foreſts round Conſtantinople. And HARTSHORN, to the value of 8*l.* or 10*l.* ſterling, is ſent, annually, from that place to Marſeilles.

Martin's tails to the yearly value of perhaps 20*l.* ſterling, are the only ſort of FUR that comes from Conſtantinople to France.

HORSE'S HAIR, the produce of the provinces of Bulgaria and Beſſarabia, is annually exported from the Turkiſh capital to France, to the value of about 166*l.* 13*s.* ſterling.

France, in its ſeaſons of the greateſt alarm for ſcarcity, as for inſtance, in the commencement of the Revolution, has derived uſeful ſupplies of GRAIN from the ſtores of the Turkiſh capital.

It is a curious fact, that the COFFEE of the European Weſt India Iſles, is, in Bulgaria, Beſſarabia, and the countries on the Danube, preferred to that from Mocha, ſo much more eſteemed in weſtern Europe. Weſt India Coffee, to the value of 40,000*l.* a year, is, accordingly, imported from Marſeilles into Conſtantinople.

Total Value of the Annual Exports from Conſtantinople to France.

	Sterling.
Wool	£.83,333 0s.
Camel's Hair	2,000 0
Raw Cotton	5,208 0
Cotton Yarn	1,750 0
Buffalo Hides	750 0
Ox and Cow Hides	137 10
Hare-Skins	218 15
Morocco-Leather	150 0
Silk	4,000 0
Bees Wax	12,000 0
Box-Wood	500 0
Copper	500 0
Copper Coffee-Pots	200 0
Orpiment	90 0
Hartſhorn	10 0
Martin's Tails	20 0
Horſe's Hair	166 10
Sum total	£.111,033 15s.

I believe, that, in the courſe of the preſent war, the exportation of Weſt India Coffee, from Europe to Conſtantinople and other places in the Levant, has been unavoidably transferred from the French to our Britiſh merchants. I know, that large quantities of Weſt India Coffee have been ſent out from Liverpool to Smyrna. N.

ON FATTENING CATTLE AND CALVES WITH BOILED FLAX-SEED.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

IN theſe days of ſcarce ſupply, any perſon, who diſcovers, or makes public a ſpecies of food for cattle, whereby the quantity of nutriment for man may be increaſed, has a claim upon the attention of the community, and a right to expect of you an inſertion of his ſtatement of particulars of the ſame.

I havd lately been informed that it is very common, in the northern parts of Oxfordſhire and Glouceſterſhire, to fat Cattle and Calves with boiled Flax-Seed or what is commonly called Linſeed. I can eaſily conceive this food extremely nutritious and fattening. For if Oil-Cake, which is only the coarſe and dry remains of Flax and Rape Seed, be found equally powerful with corn in its fattening effects, well may this food, which has all the oil left in it, be expected to give a rapid increaſe to the ſubſtance of an animal.

This food is prepared by merely well boiling the quantity of one quart of ſeed in about eight quarts of water, till it becomes of a gelatinous conſiſtency, and will form, when cold, a firm jelly. This jelly, when uſed for the fattening of grown cattle, is mixed and well worked together with cut chaff compoſed of the beſt hay and a very little ſtraw—juſt enough to aſſiſt the proceſs of cutting. Thus, not only is the nutriment contained in this boiled food communicated to the animal, but the beaſt is induced by this palatable mixture, to take more hay than he otherwiſe would.

When this food is given to calves, they have it without any mixture; and when they are firſt taught to eat it, in its warm and rather fluid ſtate. It is found in general equally fattening as, and a leſs expenſive kind of food than, milk. The uſual price of Flax and Linſeed, is in that part of the country about a ſhilling per quart. I am,

Your humble ſervant,

A GRAZIER.

ON THE SHEW OF FAT CATTLE AT SMITHFIELD, FOR THE PRIZES GIVEN BY LORD SOMERVILLE.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

I Need not inform you that I am extremely partial to exhibitions of fat cattle, for of this my partiality, or as ſome of your London readers will call it, mania, you have had repeated proofs. But I am not quite ſingular in this propenſity, for I find theſe ſpectacles always well attended, however frequent they are; and I am happy to ſay, that it now appears the beſt breeders in the kingdom will have an opportunity of exhibiting, in the London markets, the ſuperiority of their cattle and ſheep twice in each year.

The ſhew which I now wiſh you to notice, for the amuſement and information of your country readers, is one inſtituted and ſupported by the truly patriotic liberality of Lord Somerville. It was held, according to public notice by advertiſement, in Mr. Langhorn's yard, near Smithfield, on Saturday, the 27th of February, and on Monday, the 1ſt of March, to which, every perſon poſſeſſed of a yoke of oxen well adapted both to work and to fatten, or of five ſheep evidently of a profitable and a ſhort wooled breed, had a right to ſend them, free of expence, as candidates for four prizes amounting together to 100*l.* entirely the gift of his Lordſhip.

From the conditions propoſed for the obſervance of the candidates for prizes at this ſhew, particularly reſpecting the oxen, it is evident that nothing but abſolute, direct, and immediate *profitableneſs* is taken into conſideration; for in the fattening of

the oxen, the uſe of corn is totally excluded ; or, according to his Lordſhip's own words, " the beſt yoke of Oxen, ſhall be preferred, which ſhall have laboured to provide corn and other food for man, but ſhall never once have conſumed it." And it muſt not only be warranted " that they have had no corn of any deſcription ; but that the ſtraw, if any given, when fatting, was carefully cleaned of corn ; that no buck-wheat or potatoes had been uſed : and the quantity of oil-cake that had been given muſt be accurately ſtated, that an adequate deduction might be made from the merit of ſuch beaſts." And then, completely to accommodate the whole to the preſent prejudices of ſuperficial obſervers, his Lordſhip, in ſtating his conditions, ſays, " This prize is deſigned to countenance farmers in their uſual courſe of profitable huſbandry, rather than thoſe who, forgetful of general benefit, are ambitious of keeping on cattle too long after they are ripe."

The Umpires appointed to determine and award the prizes on this occaſion, ſurely every one will allow were moſt judiciouſly ſelected. They conſiſted of a landed proprietor, who, of courſe, was as capable as any man to judge of the utility of particular ſpecies of cattle in an extended view ; of a woolſtapler, who muſt be the beſt judge of one valuable property of the ſheep ; of a farmer, than whom no man can form a better judgment of the true uſefulneſs of either kind of ſtock here exhibited ; of a ſaleſman, and of a butcher, who from experience are both almoſt infallible judges of the fatneſs of cattle and ſheep.

The Umpires ſelected by his Lordſhip were the following :

Lord Grimston, Landed Proprietor.
Mr. Wm. Oakley, Woolſtapler.
Mr. Rich. Astley, Farmer.
Mr. Geo. Wheeler, Saleſman.
Mr. John Bird, Butcher.

Theſe five Umpires, after having minutely inſpected and handled the cattle and ſheep ; and having examined the certificates delivered in reſpecting the length of time which each had been allowed in fatting, the length of the journey, the condition of each when releaſed from work, and other particulars affecting the claims of each ; retired from the yard to form their final opinion, which was reſerved till the concluſion of dinner, and then delivered in the following words :

" We, the underſigned, having been nominated as Umpires in the adjudging of the ſeveral prizes offered with the moſt patriotic intention and laudable zeal in promoting the true end of Agriculture, which tends to procure the largeſt ſupply of food for the uſe of man, at the leaſt expence, by the Right Hon. Lord Somerville, to the perſons exhibiting the beſt ſhew of ſtock, as ſpecified in the printed particulars, have, with our utmoſt attention and impartiality, examined the cattle and ſheep offered for

ſhew; and taking into our conſideration all the requiſites ſtated in the ſaid particulars, do make our report as follows."

FOR THE OXEN.

"We do adjudge the Firſt Prize of 30*l.* to Mr. John Weſtcar, for his yoke of Herefordſhire oxen."

"The Second Prize of 20*l.* to Hugh Hoare, Eſq. for the ſecond beſt yoke, Devonſhire oxen."

FOR THE SHEEP.

"We do adjudge the Firſt Prize of 30*l.* to his Grace the Duke of Bedford, for his five ewe lambs, South Down."

"The Second Prize of 20*l.* to Mr. William Wells, for his three-years-old five Wiltſhire wethers."

The number of oxen here exhibited was 10 yoke, that of ſheep and lambs 60, or 12 pens containing five each.

Amongſt the oxen were two yokes from his Majeſty's Farm at Windſor, which, in the opinion of the ſpectators in general, bid very fair to carry away at leaſt one of the prizes: but, who can contend with Mr. Weſtcar on theſe occaſions? Fortunately, however, for future exhibitors, Mr. Weſtcar cannot appear as a candidate at Lord Somerville's ſhew next year. For it is expreſſed in the terms of admiſſion, "that no perſon gaining a prize is qualified to exhibit ſtock for the ſame prize the ſucceeding year.

A yoke of oxen, bred and fatted by that well known agriculturiſt Mr. Crook, of Tetherton, in the county of Glouceſter, were here exhibited, of rather uncommon appearance, and, in my opinion, of no common merit. They were very fat and of a form and ſize extremely well calculated for general utility; they had travelled 100 miles and did not appear at all injured by their journey; they were the produce of a croſs between a French Bull and Pruſſian Cows; they had laboured well in harneſs three years, and had been fattened in a very few months. The owner of theſe oxen has been very laudably and expenſively engaged in croſſing Foreign cattle with each other, and with Engliſh cattle, nearly for 20 years, and appears at length to have produced a very valuable ſpecies of ſtock.

Amongſt the ſheep here ſhewn I could obſerve nothing worthy of public admiration but the five South Down lambs of that Nobleman who was the inſtitutor, the ſupporter, and patron of this truly valuable ſpecies of exhibition; of that Nobleman who was from talent, from attachment, from experience, from ability and impartiality better qualified, perhaps, than any man upon earth to extend, and give life to agricultural purſuits: but whoſe death ſociety in general, and the agricultural world in particular, have now the ſad neceſſity of deeply deploring.

I remain, your's

Piccadilly, March 10, 1802. T. WESTON.

For the Commercial and Agricultural Magazine.

ACCOUNT OF A METHOD OF CLEARING GROUND FROM MOLES, WHICH IS SUCCESSFULLY PRACTISED IN FRANCE.

(With a Plate.)

(*Tranſlated from the French of Mr. Dralet.*)

THE MOLE*, is well known to be a troubleſome nuiſance to agriculture. It lives under ground, forms long ſubterraneous paſſages with its ſnout and paws, and deſtroys all roots of plants falling in its way. It is particularly fond of burrowing in garden-ground, where it does much damage. Meadows are ſtill more extenſively and more ſeriouſly injured by it. In theſe, on account of their depth of ſoft humid ſoil, moles uſually reſide; raiſing in great numbers over the ſurface, thoſe protuberances of looſened ſoil, which are named *mole-hills*; and thus deſtroying or rendering uſeleſs, the graſs, not only of the very ſpot where the mole-hill is raiſed, but likewiſe to ſome extent immediately round it; as well as impeding the free courſe of the ſcythe for the whole meadow. Theſe are the moſt obviouſly apparent, but not the greateſt of the miſchiefs done by the mole. It does other damage, ſtill more conſiderable, which may often eſcape ſlight and common obſervation. In meadows contiguous to rivers or ſmaller ſtreams of water, it is uſual to conſtruct artificial banks of earth, which have, in France, the name of *Mues*, in order to prevent the ground from being inundated. And, in Summer, moles never fail to make paſſages through theſe banks; to the water to which they find it neceſſary to repair for coolneſs and moiſture. The ſmall tunnels which they thus form, admit the water: and the banks are undermined and of courſe demoliſhed upon the very firſt extraordinary ſwell of the ſtream that enſues.

For theſe ſtrong reaſons, the extermination of moles, becomes an object of the greateſt conſequence to the huſbandman. Beſides, the animal is not incapable of being put to good uſe, when dead. The ancients manufactured moſt elegant coverings for the head from mole-ſkins. *Agricola* relates that he had ſeen garments lined with the furs of moles: and Pliny tells us, that coverlets for beds, were made of this ſame material, at Orchomenos. Such furs may be finely ſhaded: for the colours of moles vary through all the ſhades of black and brown. Mr. Aurignac lately caught ſome white moles, in the department of Gers. He took, alſo, one that was ſpotted black and white.

Men have, at all times, been at war with moles. Baits, ſnares, engines, poiſon, fire-arms have been, all, tried for the deſtruction of this ſmall creature. But, hitherto, every means employed for this end, (in France), has been found either too expenſive or ineffectual.

* The Talpa Caudata of Linnæus

Of all the methods yet tried, the leaſt difficult is, undoubtedly, that which the farmers about Auch uſe; as there is no inſtrument requiſite to its performance, but a common hoe or mattock.

Yet, this method, of which the diſcovery was quite accidental, was not rendered completely ſucceſsful, but in a long courſe of time, and with much diligent obſervation. It was not till after twenty years application to this object, and by this particular method, that Mr. Aurignac ſucceeded ſo as to become able to take alive, in one morning, all the moles on any one farm, even to the number of five and twenty or thirty.

I ſhall, here, explain, in detail, the method followed by that mole-catcher; prefixing ſome preliminary obſervations, neceſſary to enable any perſon to employ it, with ſucceſs.

I. *Preliminary Sketch of the* NATURAL HISTORY *of the* MOLE.

1. The mole lives under ground. Its health is liable to be injured by too free acceſs of the air.

2. Yet, it ſometimes, leaves one ſubterraneous habitation, and paſſes on the ſurface, in ſearch of a better.

3. It lives on the roots of plants, on inſects, and on worms. Hence, it is commonly found in lands of ſoft, fertile ſoil.

4. It never fixes its abode in miry nor in gravelly grounds.

5. If ſurprized in its ſubterraneous receſſes by water, it ſprings, in great haſte, to the ſurface.

6. In winter, and during rain, it betakes itſelf to upper grounds which are the leaſt humid, and the leaſt liable to be inundated.

7. In ſpring, the mole comes down from its winter-reſidence to the meadows where it finds a ſoft mould capable of being eaſily penetrated, and containing plenty of roots.

8. After ſuffering long drought, it flees to ditches, to the brink of the firſt ſtream, or to ſhelter under hedges.

9. In the months of February, March, April, and May, the female produces its young; bringing commonly four or five at a birth.

10. Theſe animals prepare, beforehand, for this occaſion, an arched receſs under ground, in a ſituation ſomewhat elevated, and generally under the cover of a buſh or hedge. To the number of four or five mole-hills may be obſerved very near to the upper ſide of this receſs.

11. The mole cannot live without being at work. Being obliged to ſearch under ground for its food, it forms there, long tunnels or ſubterraneous paſſages named, in French, *boyaux*.

12. Theſe tunnels are, uſually, parallel to the ſurface of the earth; and vary in depth, according to the changes of ſeaſons, from four to ſix inches.

13. As the moles are almoſt equally afraid of cold and of heat; they make their paſſages the deepeſt, and work at the greateſt diſtance under the ſurface, in ſummer and in winter.

14. They are extremely timid, when they perceive themſelves

to be in danger. They, then, penetrate by a perpendicular opening, to the depth of a foot and a half below the level of their ordinary reſidence.

15. In forming their paſſages, moles throw back the mould which they remove, towards the ſurface. It is thus, the mole-hills are raiſed. Upon every new change of place, a mole raiſes three, four, ſix, or even nine of theſe hills, according to its age.

16. Conſequently, all the mole-hills formed by any one mole, communicate, by ſubterraneous paſſages, with one another.

17. *If, with any inſtrument, you open a tunnel, or paſſage, recently formed by a mole; the mole will, in a few minutes, come to cloſe up the aperture, in order to ſecure herſelf from danger, and from the acceſs of the external air. It conſtructs, for this purpoſe, over the aperture, an arch of looſe mould, having, externally, the appearance of an oblong mole-hill, and mending up the tunnel much in the ſame manner in which a plumber might mend a leaden pipe, by clumſily applying, on the outſide, a piece of lead to cover any hole in it.*

18. *Should you, likewiſe, break down this new mole-hill*; the mole will, again, return *to repair it.*

* Theſe two capital facts (17, 18) conſtitute the fundamental principles of the art of the mole-catcher.

19. The mole works in all ſeaſons; becauſe it cannot, otherwiſe, have ſubſiſtence.

20. That it ſleeps, as ſome naturaliſts have affirmed, all winter,—is not true. It is, however, languid, in this ſeaſon; working, now, much leſs than in ſummer.

21. About the beginning of Spring, it is, when the mole ſets to work with the utmoſt activity, and raiſes the greateſt number of mole-hills.—It is, then, obliged to find food for its young; as Spring is its ſeaſon for parturition. The ground is, now, eaſier wrought than at other times. The animal, too, becomes, in itſelf, more vigorous, by the diminution of the cold, and the return of the genial temperature of Spring. Theſe are the cauſes of its increaſed activity in toil.

22. The male is much ſtronger than the female, and raiſes a greater number of mole-hills, and thoſe larger.

23. The female works leſs than the male, throws up fewer mole-hills, and thoſe ſmaller.

24. The young moles form only long covered ways, at the ſurface; the mould raiſed over which, is ſcarce ſufficient to hide them. When they begin to make mole-hills, theſe are ſmall, without any regular ſhape, and arranged zig-zag.

25. The hours of working, for moles, are at ſun-riſe, at the hour of nine in the morning, at noon, at three in the afternoon, and at ſun-ſet. But, it is at ſun-riſe, and at ſun-ſetting, that they ply their work with the greateſt briſkneſs.

26. In times of drought, they do not throw up mole-hills,

except at ſun-ſetting. In winter, their moments of working are when the earth is ſomewhat heated by glimpſes of ſun-ſhine.

27. The ſenſe of ſeeing is exceedingly obtuſe in the mole. But, its hearing is exquiſitely delicate and acute.

II. PRINCIPLES *of the Art of the* MOLE-CATCHER.

28. It is difficult to take moles, unleſs when they are at work.

29. The moſt favourable time for the mole-catcher, is in the beginning of Spring, (21).

30. It is in the meadows, that they ſhould be, in this ſeaſon, the moſt earneſtly attacked, (7).

31. They are to be attacked at ſun-riſe, at the hour of nine in the morning, at noon, at three in the afternoon, or at ſun-ſet (29).

32. It is better to commence an attack upon them at ſun-riſe, than at any other time in the day, (29).

33. The next moſt convenient hour is nine in the morning; becauſe, if all the moles which one wiſhes to deſtroy, cannot be, then, taken; the operations may be renewed at thoſe other hours in the day at which theſe animals are known to reſume their work

34. In watching for a ſingle mole, care muſt be taken to make no noiſe, and eſpecially, not to ſtamp nor beat upon the ground, (27).

35. One may, at any time, force a mole to come above ground, by pouring a ſufficient quantity of water into its ſubterraneous receſſes, (5).

36. Should a perſon happen to be near a mole-hill when the mole happens to betray its preſence by ſtirring the mould; let him, then, with his hoe, break into the tunnelled paſſage between that and the next mole-hill; and let him, with a little earth, cloſe up the paſſage at the aperture made with his hoe. The mole is now impriſoned between the mole-hill and the place where its paſſage is broken into, and ſtopped up (16).

37. If the earth of a mole-hill be freſh and newly raiſed; you may conclude, that there is a mole within it. The ſame thing may be inferred of any number of freſh mole-hills within ſmall diſtances of one another.

38. Yet, however freſh the earth of any mole-hill; if there be in its centre a perpendicular hole of about two inches diameter; you may be ſure that the mole is not within, but has left this reſidence, in ſearch of a better (2).

39. When you find an aſſemblage of mole-hils together, of which the earth is quite freſh; then, upon removing them all with the hoe, and laying open the paſſages communicating among them, you cannot fail to find the mole that works within.

40. This labour might prove too tedious and troubleſome.

But it will become very ſimple; if the mole can be confined between two points not remote from each other. Nothing more will, then, remain to be done, but to open with the hoe, the intermediate paſſage between theſe two points.

41. A mole may be reduced to confinement between two ſuch points, by making a few ſlight openings in the length of the tunnelled paſſage in which you deſire to confine her. Theſe openings interrupt her courſe; for, ſhe will not paſs, till ſhe ſhall have, firſt, repaired them, (17).

42. When you break into the tunnelled paſſage of a mole; cloſe the paſſage ſlightly with a little looſe earth, at both ends of the hole you have made.

III. APPLICATION *of the Foregoing Principles*; *or* PRACTICE *of* MOLE-CATCHING.—INSTRUMENTS *uſed by the* MOLE-CATCHER.—

The only inſtrument abſolutely neceſſary to the mole-catcher, is a hoe. But, it will be convenient that he have, likewiſe, at hand, a few chips of ſtraw, a few bits of paper, and a pitcher of water.

Of the number of moles on one farm or eſtate—Of their ſex—And of their age.

The firſt thing a mole-catcher ſhould do on a farm or eſtate which he goes to free from moles, is, to examine how thoſe moles may be ſo confined that he ſhall be able to attack them all at once: for, by thus attacking them, he will the ſooneſt accompliſh his whole taſk.

In the plate annexed, is a repreſentation of a meadow covered with mole-hills, Fig. 1, 2, 3, 4, 5, 6, 7.

Surveying this meadow, as a mole-catcher, I perceive a detached mole-hill, Fig. 1. I perceive the earth compoſing it to be freſh, as newly thrown up: I conclude, then, that there is a mole beneath, (37). The mole-hill is large: I, thence, know the mole within it, to be a male (22).

I paſs on to the two mole-hills, Fig. 2. They are at no great diſtance one from another: of courſe I know them to be the work of a ſingle mole (37). They appear freſh: and I conclude the mole to be ſtill buſy within. They are ſmall: I, on this account, ſuppoſe it to be a female that has made them, (23).

The three mole-hills, Fig. 3, are near to one another; and, conſequently, the work of a ſingle mole. They are freſh: I, of courſe, know the mole to be now at work, within. They are large: and have, therefore, been thrown up by a male.

The ſix mole-hills (Fig. 4) are not diſtant from one another: they muſt have been, all thrown up by one mole. They are freſh: the mole is ſtill at work. They are ſmall: and, therefore, raiſed by a female.

The zig-zag covered ways, or imperfect mole-hills (Fig. 5), are freſh: a young mole is beneath, (24).

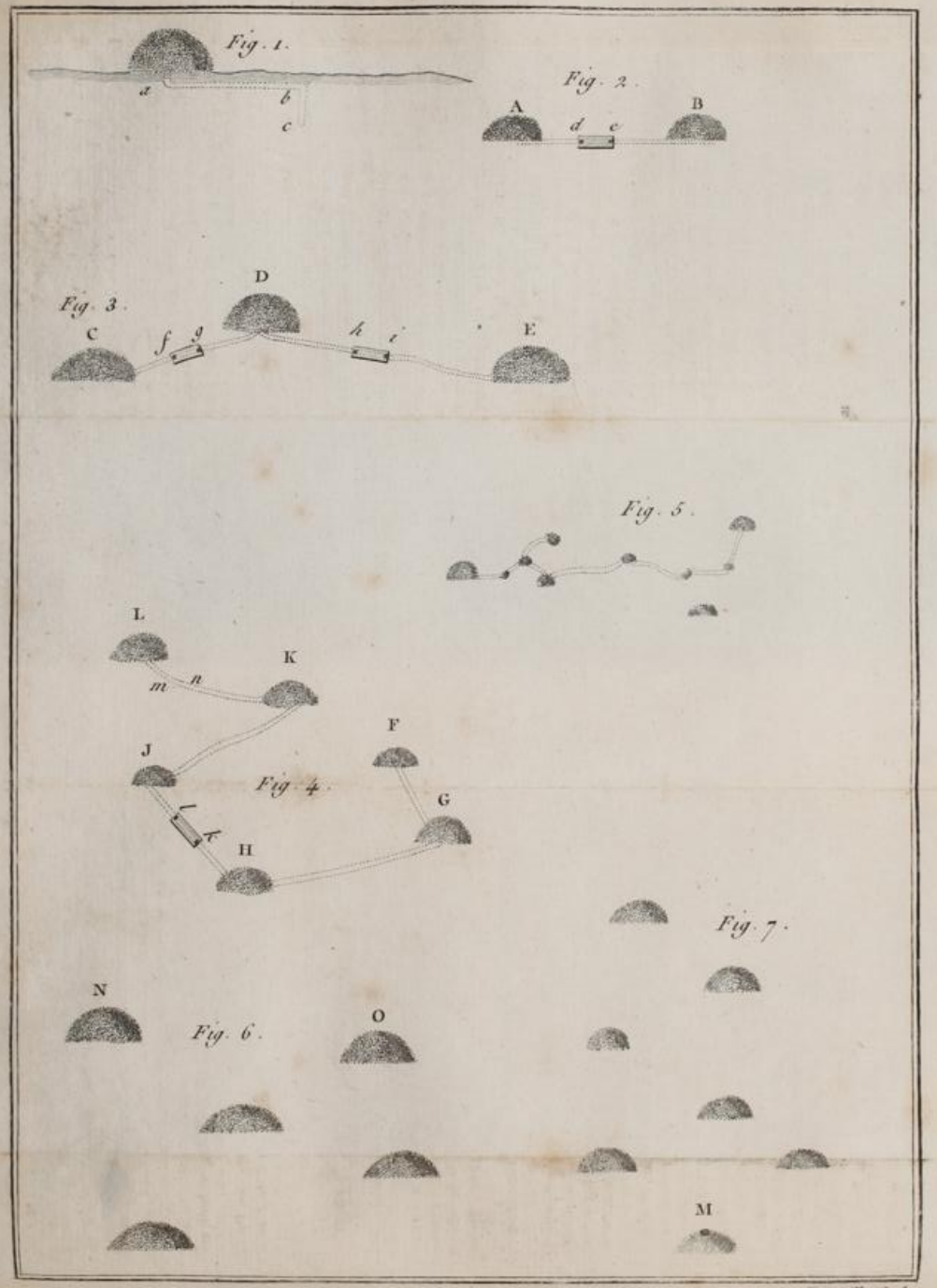
Fig. 1.
a
b
c
Fig. 2.
A
B
d
e
Fig. 3.
C
D
E
f
g
h
i
Fig. 5.
L
K
m
n
J
F
G
Fig. 4.
H
Fig. 7.
N
Fig. 6.
O
M

The five mole-hills (Fig 6) are dry: they have been deſerted (2).

The ſeven mole-hills (Fig. 7), are yet freſh; but one of them, M, has a perpendicular hole opening at the top. The mole by which it was thrown up, is, hence, known to be but juſt gone (38).

By theſe obſervations, I know, that there are, in this meadow, two male moles, two females, and a young one.

It is of conſequence, to know whether the moles be males or females; young or old. The males work quicker than the females; and are, therefore, to be more narrowly watched. The young ones, raiſing but a very little mould to cover them, as they move along at the ſurface, go, alſo, very quick; and ſhould, therefore, be kept conſtantly in view, after they have, once, been diſcovered.

OPERATIONS.

Case First. *When a mole makes but one mole-hill*, (Fig. 1). I remove this mole-hill with the hoe; and aſcertain, whether it have a communication with any of the mole-hills adjacent. For this laſt purpoſe, I hem, or make a ſlight noiſe, at the aperture, or mouth of the internal paſſage from the demoliſhed mole-hill. I, at the ſame time, apply my ear, to liſten what enſues within. If the mole-hill be without communication with any other; the mole being nigh, is frightened by the noiſe; I hear it ſtir; and it cannot eſcape me.

With my hoe, I lay open the tunnelled paſſage, *a*, *b*; and, at *b*, I find the mole.

But, the creature, aware of its danger, may poſſibly have had time to deſcend deeper into the earth, by the perpendicular paſſage, *b*, *c*, (14): I have, then, two methods for taking her: I either dig to *c*, and there find my prey; or I pour in water at *b*, and the mole comes out of herſelf (5).

On the other hand, if, upon hemming, I could not hear her ſtir; I conclude, that this mole-hill communicates with others near it; and I proceed, as follows:

Case Second. *When a mole has thrown up two mole-hills* (A, B, Fig. 2). I make, in this caſe, an opening, *d*, *e*, more than nine inches long, in the direction of the tunnel which runs between the two mole-hills. With a little earth, I cloſe the two ends, *d*, *e*, of the tunnel. Within a few ſeconds, the mole, diſagreeably affected by the air, and fearful of danger, comes to repair the breach (17), and is diſcovered by its working, at *d*, or *e*. If it come to *d*, I know that I ſhall find it between that point and the mole-hill, A. Comes it to *e*? I am ſure of finding it between *e* and the mole-hill B. In either inſtance, I proceed, as was indicated in Caſe Firſt; and

lay open either that part of the tunnel which terminates at the mole-hill, or that which ends at B.

CASE THIRD. *When the mole has thrown up three hillocks*, C, D, E, *Fig.* 3. I now make the four apertures, *f*, *g*, *h*, *i*.

The mole will be ſoon diſcovered by its ſtirring the mould at *f*, at *g*, at *h*, or at *i*.

If it work at *f*; it is confined between that point, and the hillock, C.

If it be perceived to work at *i*; it is confined between the point *i*, and the hillock, E.

If it work at *g* or *h*; it is in the ſpace between theſe two points.

In theſe three ſuppoſitions, I operate, as in Caſe Firſt, by laying open that part of the paſſage, within which the mole is confined.

If the mole be ſhut up between *g* and *h*; and I do not chooſe to take the trouble of laying all that ſpace open; I then remove the mole-hill, D, and make a third cut like the others. I watch for the working of the mole; and I then know, by the ſide this appears on, whether I ſhall find the animal between the third cut and the point *g*, or between that third cut and the point *h*.

CASE FOURTH. *When a mole has made four or more mole-hills*, *Fig.* 4. I take, for example, the ſix mole-hills, F, G, H, I, K, L.

I make the cut *k*, *l*.

If the mole come to work at *k*; it is confined between that point and the mole-hill F.

If, on the contrary, ſhe come to *l*; ſhe is confined between *l* and the mole-hill L.

In either of theſe ſuppoſitions, I make, from K to F, or from *l* to L, the ſame means of operation as in Caſe Third; that is, I proceed juſt as if there were but three mole-hills.

A different mode of operating in Caſes 2d, 3d, and 4th. I ſuppoſe, that, when I have made the cut *d*, *e* (Fig. 2), the mole comes to work at *d*, and I obſerve it, the moment it comes there. I know that it muſt travel along *d*, *e*, to repair the breach in its tunnel by an arch of earth which it muſt raiſe from the bottom of the place laid open. If I remain there, without making noiſe, I ſhall ſee it come to work. Then, to take this mole, I have only to put the end of my hoe behind it, before it comes to the point *e*. The earth which I had, before, put at the aperture *d*, will hinder it to advance: the end of the hoe will prevent it from retiring: and I ſhall eaſily take it, by removing, with my fingers, that ſmall portion of looſe earth with which it is covered (1).

It is poſſible, even without waiting beſide an aperture, to know the moment a mole comes to work at it. Nothing

more is, for this end, neceſſary, than to place there a chip of ſtraw, bearing a bit of paper at its upper end. This ſmall ſtandard will be ſubverted, or at leaſt ſhaken, by the very firſt movement the mole ſhall make at the place where it ſtands. The ſhaking or fall of the chip of ſtraw calls the mole-catcher to watch and take the animal within.

CASE FIFTH. *When the mole comes not to work at the cuts firſt made by the mole-catcher.* I ſuppoſe, that, after making the aperture *k*, *l*, I find that the mole continues to work at the mole-hill L. I am, now, ſure, that it is between the point *l* and the mole-hill L: and my ſubſequent operations are the ſame as in Caſe Third, above explained; that is, I muſt act as if there were but three mole-hills, J, K, L.

To know, whether a mole ſhall come, during my abſence, to work under a mole-hill, I ſoftly flatten the mole-hill with my foot; and if, on my return, I perceive a ſmall eminence to have been raiſed on the level, I can, then, have no doubt but the mole has been working there.

CASE SIXTH. *A different manner of operating for Caſes 2d, 3d, 4th, and 5th, when a perſon happens to be near a mole-hill at the moment when the mole breathes or blows at it.* Should I be beſide the mole-hill L (Fig. 4), at the moment when the mole comes to work there; I do not uſe the uncertain method of the gardeners, who remove the mole-hill with the ſpade. But, I cut at *m*, *n*, the tunnel communicating between that mole-hill and the next one, K. This is a certain means of confining the mole between the mole-hill and the point *m*, *n*. When the mole is thus incloſed, I proceed as in Caſe Firſt, and lay open the ſpace within which it is confined.

CASE SEVENTH. *When ſeveral freſh mole-hills are found near to ſome other mole-hills, old and dry* (Fig. 4 and 6). In this caſe, which is more troubleſome than any other to the mole-catcher, it is doubtful whether the freſh mole-hills do or do not communicate by tunnels, with the old and dry ones. It is neceſſary to begin by making cuts between the old and the new hillocks, that the mole, when attacked in the new, may not be able to make its eſcape to the old. One may then proceed, according to circumſtances, as in the caſes foregoing.

When this happens to be the caſe, you cannot make too many cuts, unleſs you are anxious to ſpare the ſurface of the ground. It is good, for inſtance, as in Fig. 4 and 6, to make a cut in the direction from H to N, and another in the direction from H to O; as there may be a tunnel in either, or tunnels in both of theſe directions.

GENERAL OBSERVATIONS.

If one were conſtantly to watch a ſingle mole, and not to proceed againſt any other, till after the firſt were taken; only a very few could be deſtroyed in one day.

But, when you ſurvey a farm to diſcover the moles, you muſt gently flatten, with your foot, all the freſh hillocks, and make all the neceſſary cuts,—as of theſe you cannot make too many, unleſs you be afraid of breaking the ſurface too much. Set up little ſtandards of ſtraw with paper ſtreamers. Then paſs about from one mole-hill to another, and proceed, as directed above.

If you thus proceed againſt ſeveral moles at once, you muſt exerciſe great vigilance: otherwiſe, while you are buſy with one mole, others may make good a paſſage acroſs the cuts; and, then, you will have to begin with them anew.

A mole will be longer in repairing and croſſing one of your cuts, if you put a lump of hardened earth at the bottom. This precaution ſhould be always taken.

ADDITIONAL INFORMATION.

OF all the means hitherto employed for the extermination of moles, thoſe above deſcribed, are the eaſieſt and the ſureſt. The methods now uſed in other countries, will, undoubtedly, be relinquiſhed wherever the foregoing information ſhall be read. However, there are not wanting perſons who reſolutely adhere to old practices, ſpite of whatever reaſon you may offer to perſuade a deſertion of them. The following detail is, therefore, added, of the traps which are ſet for moles, the poiſoned aliments which are put in their way to deſtroy them, the fumigations applied to ſuffocate them in their receſſes, and the arms uſed to kill them. Directions are introduced to ſhew how thoſe different means may be reſpectively employed, with the moſt certain effect.

MOLE-TRAPS are either ſimple or complex. The ſimple mole-trap is a hollow cylinder of wood, white-iron, or pottery, 13 or 14 inches long, and in diameter a little larger than the tunnels of the mole. This cylinder is cloſed at one end, and has at the other, a ſucker or valve preſſing againſt an exterior edging. When the mole comes to the extremity covered by the ſucker or valve, ſhe preſſes this back in order to continue her progreſs, the cylinder, and can return no more.

Two of the traps may be united, ſo as to form a double trap, having a valve at each end. By this, the mole may be taken, on enters whatever ſide ſhe approach.

The moſt remarkable of the complex traps is uſed in Normandy. It is a ſmall piece of board fixed in the ground by four iron pins with croſs points extending from them; and on theſe points the mole transfixes itſelf. This inſtrument, a moſt ingenious contrivance, is deſcribed under the word *Mole*, in the ninth volume of ROZIER'S *Complete Courſe of Huſbandry*.

It is very ſeldom that thoſe ſucceed, who make uſe of theſe and other mole-traps: for, they do not uſe the fit means to entice the creature to the ſnare. That means is, nevertheleſs, very ſimple.

Nothing more is neceſſary than to make a few holes by which the air may enter the tunnel of the mole, and give her notice of the injury done to her work.

It will be eaſy to him who has read the preceding information and directions, to employ ſuch mole-traps, in certain caſes, with infallible ſucceſs. I ſuppoſe, for inſtance, the two mole-hills A B, fig. 2d. I make the aperture *d*, *e*. If the mole ſtir the earth at *d*; I there preſent the valve of either the ſimple or the double mole-trap; and I am ſure of taking it. If, on the contrary, it preſent itſelf at *e*; I muſt, there, uſe the trap. I act in the ſame way, in every one of the caſes mentioned in Section III. above. It may be eaſily believed, that there are ſome of thoſe caſes, in which it will be convenient to uſe mole-traps.

Mole-traps are exceedingly uſeful, when the mole-hills happen to be at conſiderable diſtances one from another, as in the end of winter. But, in time of drought, and when the weather is very cold; the hillocks are ſo very near to one another, that the traps can be of little uſe.

Of Poiſoned Aliments. There are ſeveral recipes for poiſoning moles. Some propoſe to throw into their retreats, nuts which have been pierced on one ſide, and boiled in a ſtrong lixivium.

Others boil ſuch nuts in water, with an handful of hemlock, and uſe them as above.

In ſome countries, people take the root of white hellebore with the bark of dog's colewort pulverized and ſifted; mix this with barley-meal; ſteep the mixture in wine and milk; cut it in ſmall pieces; then throw it into the mole-hills.

In other countries, it is uſual to take the green of a leek, or to put arſenic on the white; and bury this in the freſheſt mole-hill that can be diſcovered.

Theſe poiſons, it may be obſerved, are, in general, uſed injudiciouſly. The mole rarely ſeeks its food at the ſurface where its hillocks are placed. It puſhes back the earth, as it works, to the extremity of its tunnel. That earth raiſes the layer next above it; and by the continual repetition of this proceſs, the mole-hill is, at laſt, formed. The mole, while undiſturbed, keeps always within its tunnel; and it is into the tunnel, therefore, that the poiſoned bait ought always to be caſt, inſtead of being left in the hillock.

To deſtroy the mole which formed the mole-hills A B, fig. 2d. make a cut, *d*, *e*, in the tunnel which communicates between them. Put the poiſoned aliment, then, into it, at either *d* or *e*, or even between them. The animal will come, of courſe, (17. 18.) to repair the breach, will find the aliment, eat it, and die.

Of Fumigations. To ſuffocate the mole in its retreat, ſome adviſe to take a nut-ſhell, or any little vaſe, ſolid and of ſmall capacity, and in it, to burn cedar-root, or wax and ſulphur, with a portion of ſtraw; then to ſtop up every hole by which the ſmoke might iſſue out.—The ſucceſs of this method is very uncertain, and indeed none at all in the hands of any perſon not well acquainted with the artifices and haunts of the mole. Sometimes, all the mole-hills in a garden or a meadow, whether freſh or dry, communicate by many different paſſages, with one another (Sec. III. caſe ſeventh). In this caſe, all theſe mole-hills muſt be preſſed down, and cloſed up. But, doing this, you will yourſelf preſerve the mole from the threatened ſuffocation. Suppoſe for inſtance, that the mole which made the hillocks, Fig. 4. is to be ſuffocated; and that you put the combuſtible matters in, at H. If the mole be at I or L; the ſmoke will be hindered from penetrating beyond I, by your ſhutting up the paſſage there: and your precaution to enſure the death of the mole, will prove the very means of its eſcape.

It is only by cuts in the paſſages, that fumigation can be made effectual. To ſuffocate the mole of the hillocks, Fig. 4th. make the breach *l*, *k*; cloſe up its extremities; put in your combuſtible matters between *k* and F, and between *l* and L, after levelling the hillocks L F. But, you muſt, firſt, aſcertain whether the mole-hill, H, Fig. 4. have no communication with thoſe of Fig. 6; and if it have, cut off that communication by other breaches (III. caſe ſeventh).

Fire-arms. Fire-arms are uſed againſt the mole, when ſhe raiſes hillocks, in beds in a garden, on which the ſeeds have been ſown, or on any other ground which it is inconvenient to lay open with the hoe.—In this caſe, you muſt watch for the mole at the hours indicated II. 31.—Charge your gun with ſmall ſhot; and let its mouth almoſt touch the ground when you give fire. If the animal eſcape the ſhot, it may, however, be ſuffocated by the ſmoke.—But care muſt be taken to fire in the direction, in which the mole is known to work.—In order to learn, in what direction ſhe works, you muſt remove the hillock with the ſpade, and dig till you diſcover the tunnels ending at it. The mole will come to repair the damage (18): you will perceive whence ſhe brings the earth ſhe uſes: and, thither, direct your ſhot.—Some gardeners uſe a ſpade, and ſome a pointed mallet, in watching for the mole. In either caſe, the directions here given as to the time of day, and the diſcovery of the place where the mole works, ought to be followed.

Other expedients uſed againſt moles. Some farmers lay out upon their ground, matters of which the noiſome ſmell drives away the moles. Of theſe, nothing ſhall be ſaid here, as they

only enable a man to drive a nuiſance out of his own field into his neighbour's.

Gardeners endeavour to take moles by throwing water upon a freſh mole-hill. But, this does not ſucceed above once in twenty times. Indeed, it can ſucceed only upon a ſingle mole-hill, unconnected with others. (See what has been ſaid reſpecting it, III. caſe firſt).

Laſtly, there is a breed of ſmall dogs *, near Portſmouth, which are uſed in hunting moles. (See *Childrey's Curioſities of Scotland and Wales*).

I cannot conclude, without taking ſome notice of the method for catching moles which is indicated by Buffon. It proves, that even great men are not always to be haſtily credited.

"The ſimpleſt and ſureſt method to take a mole," ſays that naturaliſt, "and her young, is to cut a trench quite round her, which may interrupt all her paſſages of communication with places beyond it. As the mole flees at the firſt noiſe, and endeavours to take the young with her; there muſt be three or four men at work together, who may, in an inſtant, remove the hillock with the ſpade, make a trench, watch the creature's motions, and ſeize it at its firſt appearance."

But, this method is not ſo ſimple as its inventor affirms. The mole, at the firſt preſſure on the ground with the ſpade, takes to flight; and may be quickly at ſome diſtance beyond where the trench is cut. (See III. caſe ſeventh). Even though intercepted by the trench, ſhe may eſcape by a perpendicular deſcent into the ground (14); and there ſhe cannot be found, unleſs you know the particular ſpot where ſhe has deſcended. (See III. caſe firſt).

* Either the *terrier* or the *ſmooth-haired ſhepherd's dog* will detect and deſtroy moles in their receſſes. The dog, by his ſmell, infallibly diſcovers the mole in its concealment. He then ſcrapes away the earth with his fore-feet, till he actually finds her. I had formerly a dog, whom I have ſeen take many moles. His ſucceſs was certain, but ſlow, and hurtful to the ground.
TRANSLATOR.

OF THE BREEDING, REARING, AND FATTENING OF POULTRY.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

I HAVE read, with pleaſure, the communication and enquiries of your Cambridge correſpondent, W. B. concerning POULTRY.

Unacquainted as I was, before, with the practice of the ancient Romans, in the management of poultry, or in any other branch of rural œconomy; I had not ſuppoſed, that the fattening of fowls could have been conducted in Italy, two thouſand

years ſince, in a manner ſo very ſimilar to the moſt refined and ſucceſsful mode by which our moſt ſkilful Engliſh poulterers effect the ſame thing at preſent.

Sir, I am of opinion, that it would tend exceedingly to the improvement of the rural œconomy of England, in all its branches, if all the different practices, which either have anciently prevailed in this or other countries, or which now do prevail in foreign countries, might, in a publication like yours, be brought into a fair compariſon with the preſent methods of our Engliſh farmers. It is by ſuch compariſon, in all other human concerns, that we learn to prefer that which is beſt. I do not like to truſt to projectors who know nothing but the dreams and conceits of their own fancies, or the blunders of their own purblind and ill-directed experience. I can aſſure you, Sir, that it will meet the approbation of thoſe of your readers who are the moſt diſtinguiſhed for plain common ſenſe, ingenuous curioſity, and ſincere patriotiſm; if you endeavour to oblige us with many more ſuch extracts as thoſe by W. B. from the agricultural writings of old Cato the Cenſor, and other Roman improvers in huſbandry—and if you add to theſe all ſuch parallel information concerning the modern practices of foreigners in the ſame art, as may beſt aſſiſt us to draw from the whole, the moſt uſeful inferences, to enlighten our own operations. Do not confine yourſelf to the elucidation of that only which you yourſelf judge worthy of immediate adoption in this country, or of that alone of which you ſuppoſe the habitual prejudices of Engliſh farmers to approve. Acquaint us with the bad as well as with the good, with the cheap as well as with the expenſive, with the old as well as with the new. It is only by a due comparative knowledge of the whole, and a candid deciſion upon their relative merits, that we can hope to introduce rational improvements into that productive induſtry of our country, upon which the ſubſiſtence of its inhabitants immediately depends.

But, the principal deſign with which I now addreſs you, is, to communicate what I know, in anſwer to the enquiries of W. B. reſpecting our preſent management of poultry in England.

There is no ſpecies of living farm-ſtock, more profitable than our common DUNGHILL-FOWLS. Hens in good condition, accommodated with one cock for every ſeven hens, begin in January to depoſit their eggs.

The hen, when a neſt is fully prepared, broods upon it with maternal conſtancy. Some few of the eggs may be broken, and ſome may decay, when too great a number is allowed: but, by much the greater part, if the eggs were freſh and found when ſet in the neſt, will be productive: and, with reaſonable care, the brood of chickens which ſhall be brought, may be kept

equal in number to about five-ſixths of the quantity of the eggs ſet it the neſt.

I have, however, with great pleaſure, learned, that the Egyptian artificial mode of breeding chickens, formerly well deſcribed by Reaumur, in the Memoirs of the French Academy, has been lately tried, with ſucceſs, in this country. The eggs of the oſtrich are left in the ſand, and ripened into life by the heat of the ſun. Why may it not be eaſily poſſible to do as much by imitative art, for the eggs of any other fowl? The parent fowl, in brooding over the eggs, only keeps them, during incubation, at almoſt a conſtant blood-heat. It is eaſily poſſible to conſtruct a hot-houſe, to be heated on the plan of M. Benard, and to have its heat conſtantly regulated by means of a thermometer,—in which a poulterer, without other care than that to procure ſufficient ſupplies of freſh and impregnated eggs, might provide chickens by hundreds or thouſands for the market, even from January till December, without depending on the uncertainties of the incubation of the hens themſelves. The loſs of eggs and chickens, in breeding and rearing, would thus be much leſs. The breeder would be, for his brood of chickens, independent of the caprice of the parent-hen, which is often not inconſiderable. The hens would be, all, ſpared for laying eggs. The mere breeding of chickens would, in fact, not coſt more than one-third of what it coſts at preſent. The temperature might be lowered, by degrees, to the infant chickens, till they ſhould be able to endure that of the open air. In the firſt feeding of them, there would be no greater difficulty than in the caſe of a brood from incubation by a hen. This method might be adopted in the firſt inſtance, by great dealers in poultry, and by ſuch others as could, with advantage, try it upon a great ſcale. It would, gradually, become more general, and might be accommodated by ſuitable variations in the ſcale of the eſtabliſhment, to the convenience of every different ſituation.

A chicken, while its weight varies from ½lb. to 3lb. does not require, on the higheſt eſtimate, more than 1oz. or in the latter period of its growth, one ounce and a quarter of daily food: for, it will be found, that the food, every day, requiſite for the ſuſtenance of ſuch an animal, cannot much exceed one thirty-ſixth part of its own weight. Meal of oats or barley diluted with water; dough of any of the common ſorts of meal or flour; pottage of oatmeal; potatoes boiled and bruiſed; the pith of the boiled cabbage-ſtem, &c.; with a ſufficient portion of water ready, of which they may occaſionally drink, affords the beſt food that can be deſired for your infant brood of chickens. As they grow older, they may be occaſionally fed with boiled grains of barley or ſhelled oats. Within ſeventy days, a chicken will be in a

condition to be carried to market. During five weeks of this time, it will be able to pick up a part of its own food, without trouble or coſt to you. I have, in fact, found, that three pounds of meal, flour, or grain, of ſuch a ſort as does not coſt more than one penny a pound,—or, to the farmer and cottager, even not ſo much—with water, and with what other fare the little creature can find for itſelf, feed and fatten a chicken ſufficiently, from the time of its burſting the ſhell, till that of its being of a growth, and in a condition ſuitable for its being carried to market. Another penny is a ſufficient allowance for the attention and labour which its rearing requires. The prime coſt of the egg, might be one halfpenny. Thus, even in the vicinity of any great town, a chicken which ſhall bring ninepence, or rather one ſhilling, in the market, and is, in compariſon with other things, worth as much for the uſe of your own table, whether you be a rich or a poor man, may be produced and reared at the expence of four-pence halfpenny!—Care ſhould be taken, that young chickens may not ſwallow ſnails or ſlugs; as this food has a tendency to make them ſickly.—While you rear your chickens for the market, do not confine them in coops, if you can poſſibly manage it otherwiſe. Any animal whoſe fleſh we are to uſe for food, ſhould be in perfect health when it is killed, if we wiſh that food to be, in its kind, aſſuredly wholeſome: but, all animals fattened for killing, in a ſtate of confinement and reſt, are actually at leaſt in incipient diſeaſe at the time when they are killed as ſufficiently fat: and, of ſuch, the fleſh can never poſſeſs the fine flavour of the carcaſe of an animal killed in perfect health, nor prove ſuch ſalutary food.—If circumſtances ſhall, however, oblige you to fatten your chickens in coops; be ſure to put a little brick-duſt into the water you ſet before them; for this is neceſſary to aſſiſt their digeſtion. While they run about, they can pick up what will ſerve the ſame end, for themſelves. I am inclined to think, that a little ſalt given with their food, or occaſionally with their water, would both aſſiſt their digeſtion, and make them fatten more quickly.

For the ſmall expence, then, of four-pence halfpenny, a poulterer, reſident in the vicinity of any great town, and applying to no other buſineſs, may rear for ſale, a chicken for which he ſhall receive a ſhilling. But, the farmer or cottager can provide a ſimilar chicken for the market, at little more prime coſt, than the value of the egg from which it was hatched. About every houſe in the country, there is a certain proportion of farinaceous food, which goes, daily, to waſte, if there be not domeſtic fowls to feed upon it. To the extent of this proportion of food, no chicken kept by a farmer or cottager coſts the breeder and keeper more than one penny. Would every family throughout theſe kingdoms keep, conſtantly, juſt

as many fowls as it might thus feed without expence; we ſhould never want abundance of poultry, at reaſonable cheapneſs.

I have hitherto ſpoken only of chickens; but older fowls are not leſs profitable. Any hen, even though fed with food for which money proportionate to its juſt market value muſt be actually paid, will, by her eggs, pay, annually, at leaſt three times the coſt of her ſubſiſtence. A part of the male birds which are not ſent to market, in the condition of chickens, may be reduced to capons, which you may ſpeedily bring to advantageous ſale.

Why, Sir, the very dung of theſe creatures is ſufficient almoſt to pay for their whole food. In your garden, you will find it the richeſt and moſt exciting of manures for your beds of leeks, onions, &c. &c. Is it not, alſo, of the greateſt utility to tanners and dyers?

Of all ſorts of animal food, the fowl, the chicken, the hen-egg, are the moſt ſalutary to children, to women of tender health, to the ſedentary, and to the ſick.

The only ſeaſons when dunghill-fowls are troubleſome, are in ſeed-time, and in the beginning of harveſt. It may, then, be proper to put them up in coops,—to *ſhoe* them, as it were, with ſmall bags,—or, if convenient, to ſell off thoſe which might, if retained and left at liberty, pick the grain from the ears on the ſheaves, make lodgements in the ſtanding corn, or ſcratch up the ſeeds from the harrowed field.

Fowls fed as I have directed, may be, at any time, ſufficiently fattened for the market, by a confinement of eight days in a dark room, and feeding with barley-meal, with ſuch coarſe parts of the flour of wheat as may be bought at one penny a pound, &c. &c.

You may bring chickens, in ſufficient numbers, into the market, without higher expence than I have ſtated, in every month of the year. And whenever chickens are ſold at a higher price than a ſhilling each, in the London market; there is either the moſt exceſſive extortion, or the greateſt impoſition, or probably both, in fault.

If gentlemen of eſtate, or farmers, find their poultry more expenſive than I have ſtated it to be; they may be aſſured, that it is ſo to them, only by the waſte or fraud of thoſe who feed it.

I calculate, that, without the expenditure of any thing which would not otherwiſe go to waſte, 10,000,000 of dunghill-fowls might be conſtantly kept in Great Britain and Ireland. Theſe might ſupply 12,000,000 of chickens and old fowls for the table, at the average value of fifteen pence each,—in the whole, £.750,000 ſterling. They would afford, alſo, for the table,

24,000,000 of eggs, worth, at one halfpenny each,—£.50,000 ſterling. Thus the annual produce of our dunghill-fowls alone, might raiſe proviſions to the value of £. 800,000, from a capital ſtock of the ſame value, entirely without expence of *labour* or *food*, that does not otherwiſe go to waſte. The facts on which I make this ſtatement, are abſolutely undeniable.

Highgate, March, 1802. W. JACKSON.

ON THE HAND-HOEING OF WHEAT, AND ON THE RED OR CHESNUT GRUB.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

IN the Spring of the two preceding years, I have taken the liberty of reminding farmers in general, that the time was arrived in which they might confer a manifold benefit on the community, by the ſimple proceſs of hand-hoeing their wheat-crops. This Spring I have hitherto entertained a hope that no auxiliary proceſs of this kind would be wanting; and, indeed, on ſound, dry land, the wheat plant is ſo flouriſhing as to need no aid of this kind; but would rather ſuffer from any ſuch intruſive officiouſneſs of the hoe: but, on wet land, I am ſorry to obſerve a great deficiency in the requiſite number of plants: they ſtand at that reſpectable diſtance from each other, which is too often apparent in drilled crops of wheat. Now, if theſe thin crops are ſuffered to go on without the encouragement of the hoe,—the proprietors, the community, and the poor women to whom that buſineſs ought always to be committed, will be deprived of a very conſiderable advantage which they have a right to expect. When I have a crop of wheat circumſtanced as the above, I always employ women to hoe it; and for this reaſon, amongſt many others; becauſe it brings them acquainted with the uſe of the hoe, and makes them nearly as expert in hoeing turnips as the men; and, by this means, I can have my turnips hoed in the middle of harveſt, or whenever I ſtand in need of it; which is a conſideration of no ſmall moment in my ſyſtem of huſbandry.

I obſerve my own and my neighbours' wheat plants failing, in a few patches or particular ſpots; and, on examination, I have frequently found, where I ſaw the blades of the wheat withering, a grub, about half an inch long, concealed about an inch under the ſurface of the ground, where it devours the root of the plant. This inſect is called, by ſome, the Red Grub; by others, the Cheſnut Grub; and is, I ſuppoſe, the ſame with that mentioned in your Magazine for January laſt, page 32; and denominated, in the extracts which you have given of the Tranſactions of the Society of Arts, the Grub of the Cockchafer. Could you, Mr. Editor, favour us with a further extract from the Tranſactions (as you ſeem to intimate that you have that very valuable privilege), reſpecting the mode there pointed out of deſtroying this

very pernicious inſect. If any one of your correſpondents, likewiſe, would indulge me with his ideas of any probable method of getting rid of this great enemy to vegetation, particularly to the wheat and turnip crops, I ſhould feel myſelf under a great obligation to him. I fear the ravages of this inſect are annually increaſing upon us.

None of your correſpondents have given us, as far as I recollect, any particulars of the proceſs, or of the effects, of warping; nor of the moſt approved method of winter-watering, or winter-drowning, meadow land. I hope I have written early enough this month. I am your's,

March 12, 1802. PRACTICUS.

ON THE NATURE AND USES OF HONEY.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

YOU intimate, that a reſpectable correſpondent requeſts from you, ſome information concerning the nature and uſes of Honey; and you do me the honour of ſuppoſing, that it may be in my power, to enable you to gratify his wiſhes.

What little I know of that ſubject, I ſhall very freely communicate.

HONEY ſeems to conſiſt of ſugar mixed with aromatic and perhaps even bituminous matter, with a peculiar acid, with a proportion of carbonaceous parts, and often, alſo, with ſome particles of that peculiar inflammable ſubſtance, WAX, which compoſes the ſtructure of the cells in which it is depoſited by the bees.

It is collected, in all parts of the world, from flowers of plants, by the *Apis Mellifica—Centuncularis—Violacea—Terreſtris—Muſcorum*—or *Cæmentaria*—with an art which mankind know not exactly to imitate.

Of all the inſects known in Europe, the bee and the ſilk-worm are the only ſpecies which it has been found eligible to domeſticate. Our common domeſtic bee is the *Apis Mellifica*. Its form and colours are well known. Every hive or community conſiſts of a queen-bee, the female producer,—drones, the impregnating males,—and working-bees without ſexual organs. The young begin, annually, to be produced in the months of February or March. Theſe are at firſt depoſited in eggs. The egg is, gradually, converted into a ſort of worm or grub. Throughout the months of March, April, May, June, and July, theſe young continue to be multiplied, and to aſſume the form of the perfect bee. As ſoon as they, to a ſufficient number, attain this growth, together with adequate ſtrength; they are expelled from the parent-hive. The young hive or ſwarm fly about in a body, and in great agitation, till they find a place on which to ſettle.

A buſh, a chimney, the hollow of a tree, or an aperture in the roof of a houſe, will attract them, and engage them to fix there.

The proprietors of the hives watch their movements; by beating any inſtrument of ſonorous metal, entice them to fix, without flying to a diſtance; when the ſwarm has once ſettled, bring a baſket, *ſkep*, or hive of wood, of twiſted twigs of willows, or of layers of ſtraw bound together with ſplits of the common briar, with three ſlender pieces of wood croſſing each other at right angles in the middle of the inſide of the baſket, and paſſing, the one through its whole length, the others in oppoſite directions, through its diameter; rub the inſide of this baſket with honey; and thus eaſily prevail with the bees to remove into it, and there finally ſettle, in reſidence, and at work.—One old hive will, if it be full, and the bees vigorous, produce two, three, or even four young ſwarms, in the courſe of the breeding ſeaſon. A ſwarm of bees is ſold, in the more remote parts of this country, at from 10s. 6d. even to 1l. 10s. the price varying, as in other things, with the demand.—It is neceſſary to place the new hive in a ſituation in which it ſhall receive as much as poſſible of the light and heat of the ſun. Provided the heat be not ſuch as to melt the wax and honey, within; the ſituation cannot be too warm. From the time in ſpring, at which the temperature of the air becomes ſo warm and general that the bee may live in open expoſure to it, till the period in autumn when the courſe of the weather becomes finally ſo cold and moiſt as to cloſe this inſect's ſeaſon for going abroad; bees continue not only to find their daily food abroad among the flowers, but to bring home for depoſition within, conſtant ſtores of both wax and honey. Only on wet and ſunleſs days, even in Spring, Summer, and Autumn, they cannot go abroad, and are obliged to conſume a portion of the ſtore at home. It is neceſſary that their little habitations ſhould be kept entirely dry. And they muſt alſo be ſecured from the acceſs of mice, rats, toads, and other vermin.—A hive of bees uſually prepares, if it be in good condition, from a gallon and a half to two gallons and a half of honey, beſides the wax neceſſary to contain it. This is a ſtore more than ſufficient to ſuſtain any hive, during a winter of but moderate length and ſeverity.—Accordingly, it has been contrived to drive the bees from their firſt habitation into a ſecond one, at a period in the advancement of the ſeaſon for their working, when they may yet collect a new ſtore ſufficient for their ſupport in winter. The former ſtore becomes, by this gentle robbery, the prize of their maſters, without the murther of the lively and diligent inſects by which it was gathered. In other inſtances, the bees of the hives which it is intended to rob, are ſmoked to death; and then, their ſpoils are ſeized without the neceſſity of reſerving any part for their own uſe. Bees can find ſubſiſtence wherever there are flowers. They do not deprive the flowers on which they feed of any matter which would not

be otherwiſe waſted before the rays of the ſun, without ſerving to any end in the fructification or growth of the plant.

The only labour required in managing bees, conſiſts—in furniſhing them with proper hives, and with fit ſeats for their hives,—in watching to give them due advantage of the firſt genial days of Spring,—in taking care that their ſituation be ſunny, ſafe from vermin, ſecure from ſtorms,—in tending the flight of the young ſwarms,—in robbing the hives, and preparing the honey and wax for ſale,—in depoſiting the hives in winter where their natural heat may not be entirely overcome with cold, but where they may remain in a ſleepy and ſomewhat torpid ſtate, with their powers entirely unimpaired,—finally, in feeding them with ſupplies of honey or ſyrup of ſugar, when the unuſual length of the winter ſhall have obliged them to conſume their own ſtores, and thus reduced them to the condition of ſtarving.

A ſingle perſon's attention is ſufficient for the management of 100 hives. Bees conſume nothing that would otherwiſe go to uſe,—unleſs when reduced to want, by robbery or other misfortune. Every old hive may be reckoned, on an average, to yield, annually, one new ſwarm, worth twelve ſhillings; two gallons of honey, of the value of ſixteen ſhillings; and wax, to the value of eight ſhillings more. Or rather, in truth, the whole yearly profit of a good bee-hive, may be eſtimated at two guineas. No country in the world is more favourable for bees than the Britiſh iſles. The heaths, commons, and marſhes abound in plants, which, when in flower, yield abundant ſuſtenance and ſtore-proviſion to theſe little inſects. The mountain, moor, and foreſt honey is darker in colour, and leſs pure from carbonaceous mixture than that which is gathered among gardens, corn-fields, meadows, and from the herbage of other cultivated grounds.

Honey, being of a moſt ſalutary balſamic nature, is, *in ſmall quantity*, one of the beſt aperients for the conſtricted bowels that can poſſibly be uſed. In ſmall quantity, too, it has an agreeable ſtimulant action on the ſtomach. One of the moſt eloquent writers of the preſent age, Dr. GILLIES, the hiſtorian of Greece, a man unſkilled in no part of civil or ecumenical wiſdom, has been frequently heard to aſcribe to honey, upon perſonal obſervation and experience, almoſt all the virtues of a *panacea*. For catarrhous inflamations of the throat, honey is very valuable as a ſoothing, alleviating remedy. It is uſed in many of the preparations of the apothecary. The peaſantry, in ſome parts of the country, put up honey, for a winter-ſtore—or a mixture of honey and butter in jars—which proves, eſpecially to children, with bread, one of the moſt ſalutary dainties. With ſpirituous liquors, honey compoſes a much richer and more ſalutary beverage than is to be prepared from them with ſugar. Honey, in the comb, is one of the moſt exquiſite delicacies which nature

provides to gratify the human palate. Purify the darker-coloured honey with charcoal, and you may obtain from it a ſyrup fit for making tea, coffee, chocolate, or punch, which ſhall not be diſtinguiſhed from that made with ſugar. Purify it with pulverized egg-ſhells; then leave it to ſtand for ſome time, undiſturbed; you ſhall obtain from it pure ſaccharine cryſtals. Leave that white honey which is made by bees on cultivated grounds, to ſtand by itſelf for a long time; you ſhall at laſt find a ſaccharine cryſtallization to have commenced in it. Honey, when not uſed in the comb, is either *dropped* or *ſqueezed* from the comb, to be depoſited for future uſe. That which has been *dropped*, as being purer, is ſold for a higher price. Honey is applicable, in cookery, to all the culinary uſes of ſugar; and is preferable to ſugar for many of theſe uſes.

The more impure remains of the honey are uſed in brewing METHEGLIN, or MEAD, a ſpecies of drink, which, when well impregnated with the decoction of hop-flowers, and duly matured by age, is in its beſt ſtrength, preparation, and management, preferable to any vinous liquor that can be prepared from melaſſes or malt. A rich and ſtrong ſpirit may alſo be diſtilled from honey.

The WAX, for candles, and for a great multiplicity of uſes in the arts, is invaluable.

We, at preſent, import conſiderable quantities of honey from Ruſſia, and from North America. Wax we import from theſe countries; from Africa; and, indeed, from every other country to which we trade, that affords wax for exportation.

The HONEY and WAX annually produced in theſe iſles is not, now, great. But, on the moſt moderate calculation, 1,500,000 bee-hives, each yielding produce to the value of *two guineas* a year, might be kept in theſe iſles, without any expence in food to the bees,—and, in truth, without the demand of any additional hands to labour in the eſtabliſhments of huſbandry and gardening, to which they would belong. After the deduction of every neceſſary expence, they would afford an acceſſion of £. 3,000,000 ſterling, to the national income. They would pay more, upon the capital, than any other article of farm-ſtock. They would add 16,000,000 of pounds to the quantity of proviſions now annually produced in this country. They would render us independent of other countries, for the article of WAX, ſo important to our domeſtic convenience, and to our moſt intereſting arts.

How long ſhall we be ſuch wiſeacre traders, as to neglect our native produce, for the ſake of commerce and colonization—as to import, at a high price, from the Antipodes, what we might have at home for nothing?

Honey is ſold at from one ſhilling to two ſhillings per pound.

J. BONNER.

RYE, A SPECIFIC TO THE ROT IN SHEEP.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

THE following account given me a ſhort time ſince by a Gentleman, of whoſe accuracy and veracity I cannot entertain the ſlighteſt doubt, embraces a fact ſo ſingular in its circumſtances, that I truſt you will not deem it unworthy a place in your uſeful repoſitory. Upon killing one of a conſiderable lot of ſheep, (which were in a forward ſtate of fatneſs) for his family conſumption, he was not a little ſurpriſed to find it affected by the rot; three or four more which he afterwards ſlaughtered, were obſerved to be in the ſame ſtate. Previous to his own being put to turnips, he had ſold half a ſcore of theſe ſheep to a neighbour, ſome of which actually died, and the reſt were, more or leſs, affected. Alarmed at this, he wiſhed to forward the remainder as much as poſſible before the diſorder arrived at too great a height. He accordingly ordered them to be turned into a field of freſh green rye. Here they ſeemed to do remarkably well; and upon killing them not one was found affected by the diſorder even in the ſlighteſt degree. This is the plain and ſimple ſtatement, of a plain and ſimple fact. As I ſhould be ſorry to miſlead any one by falſe reaſoning, I ſhall forbear to ſay much on this ſubject at preſent. One of theſe two things, however, muſt here have taken place; either the rye acted as a ſpecific, or my relater muſt have ſelected for ſale, as well as for his own conſumption, the only infected ſheep in his flock. This latter certainly is within the verge of poſſibility, but I queſtion whether any one would have the hardihood to aſſert it to be probable; and more particularly as he aſſured me they were promiſcuouſly taken. Should any of your intelligent and more experienced readers, have ever heard, known, or conſidered green rye as poſſeſſing this property, I truſt he will not heſitate to confirm the fact by communicating to the public the reſult of his experience. If not, ſhould I have advanced ſomething new, I hope ſome one will give it a fair trial. The moſt important diſcoveries date their origin from circumſtances as, ſeemingly, accidental. And ſhould green rye, which has long been eſteemed an excellent paſturage for ſheep, be found, upon fair and accurate experiment, to be poſſeſſed of this additional good property, it might be the means of ſaving the lives of thouſands of theſe valuable animals, which every year fall a ſacrifice to the ravages of this baneful diſorder. I ſhall forbear ſaying any thing more on this ſubject at preſent.

I have juſt received the laſt number of your Magazine and feel flattered by the early notice you have taken of my letter on the Swediſh turnip. At the ſame time I cannot help being a good deal ſurpriſed at your remark "That it was known in this country eighty years ſince." Am I to underſtand from this, that it

was introduced about that period, and immediately, or ſoon after loſt? If ſo, my account of its introduction can hardly be deemed incorrect. Or do you mean to aſſert that it has been known, and continued to be cultivated during the laſt eighty years? If this latter be the ſenſe in which I am to underſtand your remark, have you not confounded the *Swediſh turnip* with the *yellow turnip*? This latter has been long known in this kingdom, has merit, but is widely different from the Swediſh, the one having a cole wort leaf, the other a leaf ſimilar to the common turnip. I rather incline to think this muſt have been the caſe; as otherwiſe what could have become of it, where could it have lain dormant till about 20 or 25 years ago, that no notice ſhould ever have been taken of it, by Miller, the author of a decidedly profeſſional work, by Doſſie in his Memoirs of Agriculture, by any of the numerous contributors to the Muſeum Ruſticum, or by any other agricultural writer that I have ever met with. As the communication of uſeful knowledge is the object with us both, I truſt you will not decline to mention on what ground you have made the remark. I have the honour to be, Sir,

Your very obedient humble ſervant,

March 4, 1802 CASTOR.

A PLAN FOR THE PREVENTION OF SCARCITY, &c.

In a LETTER *to the Right Hon.* HENRY ADDINGTON.

(*Concluded from p.* 122.)

VI. YET, I ſhould be far from truſting to this conſtant knowledge of the truth, as the only means to prevent a return of dearth and ſcarcity. Certain active meaſures of the government and legiſlature ought to be founded upon it.

Of theſe, the firſt ſhould be the "proffer of ſuitable BOUNTIES" upon the importation of the different ſorts of grain which are the moſt wanted, whenever there is a deficiency of one-ſixth in the produce of the harveſt, under that which is to be accounted the average return of reaſonably plentiful years. The bounty ſhould not be offered with a niggardly ſpirit, nor for too ſhort a ſpace of time. The object is, to have certain abundance in the country; and where this is wanted, too large a ſum cannot be paid in bounties to procure it, provided only that the whole bounty go expreſsly and directly to accompliſh this end. We have been indebted to the effect of bounties for our eſcape from the danger of famine, during theſe late years of ſcarcity. What though the merchants do gain extraordinary profits upon ſuch an occaſions? It is a time, above all others, for a miniſter to be boldly profuſe of the public money. And never will an enlightened and patriotic Houſe of Commons condemn him for ſuch profuſion.

Bnt, it would be ſcarce eligible, on ſuch an occaſion, to extend the bounties to any other than two or three of the ſtaple and

eſſential articles for human ſubſiſtence. Grain, fiſh, ſalted butter, and barrelled beef ought perhaps to be the only proviſions of which, even in this caſe, the importation ſhould be encouraged bounties. For the reſt, it might be enough, if our ports were freely opened. One ſhould not wiſh the intereſts of our farmers to be, in too great a degree, endangered by foreign competion, unleſs under a neceſſity of the reſt of the community, paramount to all other conſiderations.

Yet, however it may be proper when an exigency ſhall ariſe, to have recourſe to the expedient of ſecuring a plentiful importation by BOUNTIES; I think it hardly poſſible, that, in the ordinary courſe of things, ſuch an exigency could ever return if the plan which I humbly venture to propoſe, were in all its practicable parts, one ten years in actual effect. Did fictions of ſcarcity never alarm the public mind; we ſhould rarely if ever ſuffer by real ſcarcity. And if the ſurplus or deficiency were at all times exactly known; the neceſſary ſupplies could not fail to be eaſily provided.

VII. The next expedient I ſhould wiſh to propoſe, to hinder the return of ſcarcity, ſhould be the eſtabliſhment of "COUNTY *and* BOROUGH GRANARIES." Such granaries were from an early period in the extenſion of the city, eſtabliſhed in ancient Rome, for the conſtant ſupply of its inhabitants. Under the Emperors, the ſyſtem of providing by ſuch granaries for the ſuſtenance of the people of that overgrown metropolis, was carried to ſuch perfection and utility, that even in years of the greateſt ſcarcity, when there was famine in the principal corn-countries, Rome enjoyed abundance. Conſtantinople ſtands amidſt lands which, though naturally fertile, remain almoſt entirely uncultivated. Its ſupplies of grain are procured by the government from the diſtant provinces. The plan upon which they are procured, ſeems diſadvantageous and oppreſſive. Yet, the inhabitants of that capital, ſuſtained from the ſtores of the Sultaun, know leſs of abſolute ſcarcity or exceſſive dearth, than thoſe of almoſt any city or country of chriſtian Europe. Frederick the ſecond, the Great King of Pruſſia, eſtabliſhed granaries in his dominions, for the ſupply of bread to his ſoldiers. He purchaſed the corn from the farmers on conditions by which tillage was happily promoted. His granaries were under a ſyſtem of management by which the grain could be preſerved in them, for at leaſt *ſeven years*. without being, in any ſort, damaged.

The wonted objections may be urged againſt the idea of taking the trade in proviſions out of the hands of the merchants, into thoſe of the government. But, it is ſufficiently poſſible to eſtabliſh and maintain public granaries which ſhall be perpetual reſources againſt abſolute ſcarcity, without any interruption of the freedom of fair trade, or any very embarraſſing addition to the duties of the executive power.

Let there be a granary eſtabliſhed in every county and borough. Let its walls and floors be conſtructed of materials and upon a plan which may be eaſily indicated, to prevent any deſtruction of the grain within it, by mice, rats, or other vermin. Let it be put under the immediate inſpection and management of the ſame commiſſioners to whom it has been above propoſed, that the conſtant inſpection of the ſtores of proviſions ſhould be intruſted.

Let the ſum of 1000*l.* ſterling for every borough and every county, be appropriated, as a public capital, for the purchaſe of grain at certain times, to fill theſe granaries.

Let the purchaſes be made by the commiſſioners out of the public markets, in ſmall qualities, each market-day, whenever the price of grain is ONE THIRD *under* that which has been eſtimated above, as *the higheſt price in times of plenty and* cheapneſs.

Let them be depoſited in the granaries. And let the corn be there turned twice a day with ſhovels, and otherwiſe ſo kept, that it may remain, even for five, ſeven, or ten years, ſufficiently freſh aud undamaged.

Whenever, in DEARTH, the market prices of grain riſe to ONE THIRD above that which may be reckoned THE *higheſt price of reaſonable cheapneſs.* Then let the county and borough granaries be opened; and let the corn be ſold out in ſmall quantities, at that price which is the higheſtrate of cheapneſs.

This ſyſtem would withdraw ſo little from the markets, and that in ſo ſmall quantity, and ſo wide a diſtribution over the country, as not to interfere with the reaſonable freedom of the corn trade. It would return its ſtores into the market, in ſuch a manner as, without injury to the farmers, always to keep the prices nearly within the rates of cheapneſs. After a very ſmall capital ſhould have been once appropriated to it; it would nearly or entirely defray by the profits on its ſales, the expences attending its management. Bounties might be of uſe, till the general plan ſhould be ſo far carried into effect as to juſtify a dependence on theſe granaries. After theſe ſhould once be filled; bounties on importation could not become again neceſſary.

VIII. Another expedient is, to promote agricultural improvements, by all feaſible means.

Incloſing now goes on with ſufficient rapidity. Let its legal and parliamentary buſineſs proceed in the preſent train; ſince there are ſo many intereſts and prejudices, to oppoſe a general incloſure-law. But, let landholders, clergymen, the legiſlature, the Courts of Juſtice, make it a general principle, to render the courſe of incloſure buſineſs as ſmooth and expeditious as poſſible.

The *abbreviation of labour* has not yet been carried ſo far, by new inventions, in agriculture, as in moſt other branches of in-

duſtry. Let this object engage the attention of the legiſlature and the government: and, either through the medium of the Board of Agriculture, or otherwiſe, let the moſt liberal encouragement be held out to abbreviating inventions in the culture of grain.

Might not mechanical power be applied in an improvement of the conſtruction of the plough, which would remove the neceſſity for employing in it, ſuch a ſtrength of horſes?

Why do Engliſhmen continue to uſe a team of three or four horſes in plowing that ſoft, open, long-wrought ſoil, which a Scottiſh farmer tills with only one or two horſes?

Late and wet harveſts often deſtroy our hopes of plenty, after a favourable ſpring and ſummer. Why not contrive ſuch cheap and convenientdr ying houſes for corn, as might enable us to defy the autumnal rains?

Cannot paſturage and tillage be more perfectly united in huſbandry? And is it impoſſible to eſtabliſh a rotation of crops that ſhall afford much more than the preſent ſeries, of food for man?

Why is not the threſhing machine adopted into univerſal uſe? And why is not the higheſt encouragement held out, to procure the invention of a machine to abbreviate the preſent labour of reaping?

Beſides, much is annually expended upon fantaſtical plans of agricultural improvement, which can never come to good.—Men propoſe projects in huſbandry, without having taken diſtinct, correct views of the facts on which they pretend to build their deſigns: And in ſuch a caſe, it is impoſſible that the attempt at execution ſhould not miſgive. Perſons of fortune go into agricultural improvements, in a frolic, as to a horſe-race or a maſquerade: And their money is waſted in the former caſe, almoſt as uſeleſſly as in the latter.—In every ſuch inſtance, the waſte goes, *ultimately*, from the pockets of the conſumers of the produce of the lands. Beſides, the failure of vain projects of agricultural improvement diſcourages ſober-minded men from improvements generally: And incalculable miſchief is thus done to the public. It were folly, to propoſe to limit men's freedom of action, as to theſe things. But, there is obviouſly a neceſſity, that Government ſhould earneſtly encourage the diffuſion of ſuch common-ſenſe principles in matters of huſbandry, as may more effectually defend this province from the invaſion of fantaſtical abſurdity.

IX. Chemical analyſis evinces, that oats, barley, and rye, in due purity, afford the ſame principles of aliment as wheat. It is certain, that the occaſional uſe of oaten with wheaten bread, would be more ſalutary to the ſtomach, than the uſe of wheaten bread excluſively.—Let the different ſpecies of grain which this country produces, be accurately analyſed. Let their different effects, in bread, on the human health, be aſcertained by

the moſt attentive medical experiments.—When the analyſis and the medical experiments ſhall have been carried to a ſufficient length; let the reſults be publiſhed. Thoſe results will *gradually* convince all ranks, that oats, rye, barley, and rice are often even more ſalutary in food than wheat; and will, hence, at length diminiſh to a reaſonable degree, our conſumption of that grain which is now raiſed, here, at the higheſt expence, and with the greateſt difficulty.

By the ſame means of chemical analyſis and medical experiment, it may be evinced, that vegetables, in a greater proportion than that in which we now uſe them for food, would invigorate and ſuſtain the human body juſt as much as the moſt delicate fleſh of animals. The principal elements of animal ſubſtance, are hydrogen, carbon, oxygen, and azote. Theſe are ſupplied, all but azote, by vegetables, as abundantly as by fiſh or fleſh. Azote is better ſupplied from lean or fibrous meat, than by that which is ſo exceſſively and ſo diſguſtingly fattened. The chemiſt and the phyſician would be able to ſatisfy the public, that leſs animal food, and that leſs expenſively fattened for the market, than what we now conſume might beſufficient for our nouriſhment.

I know not any thing which could tend more to lower the prices of proviſions, by teaching us to be content with the plaineſt fare—than an exact chemical analyſis of every different article of our ordinary food, and a ſeries of medical experiments to accompany it, made by the ROYAL SOCIETY at the requeſt of the LEGISLATURE, and made public under the authority of both. The ROYAL SOCIETY alone poſſeſſes, as a ſcientific body, the confidence of the public to the degree in this caſe, neceſſary: and even on ſuch an object as this, the cares of the LEGISLATURE would not be unduely waſted.

X. Care for the MORALS of the people, has never yet been ſeriouſly conſidered, as a grand object in POLITICAL ECONOMY. There is, however, nothing more intimately connected with the increaſe or diminution of the national wealth. A ſober and good man has, *cæteris paribus*, a chance to live longer, than one who is worthleſs and diſſipated: He is likely to enjoy better health: He executes more work, even though a ſlower workman, becauſe his application is ſteadier: He reproduces in proportion to what he conſumes, much more than his worthleſs neighbour: He is comfortably maintained at perhaps one-tenth part of the expence on which his diſſolute fellow-workman ſhall be ragged and ſtarving.

As a principal means to prevent the return of ſcarcity of proviſions, I would therefore humbly propoſe, that a new attention be paid to the improvement of the morals of theſe nations.

How improve them?—Let the Clergy be compelled to reſide on their livings and to diſchar ge their duties regularly. Let clerical diſſoluteneſs be more vigilantly and unſparingly checked,

Let the diviſions of ſectarianiſm in religion, be reſtrained ſo far as they may, without perſecution. It were eaſy to prove, that the immorality of the people is promoted by their endleſs diverſities and eccentricities in religious opinion and worſhip.

Diſcourage the uſe of ſpirituous liquors—by more rigorous vigilance in regard to the licenſing of ale houſes—by leaving malt-liquor and other beverages which do not intoxicate as free as poſſible from taxation—by laying the heavieſt impoſts on all ſpirits, whether imported, or of home-diſtillation—by leaving for the more opulent, one red and one white wine, each the moſt ſalutary of its kind, at reaſonable cheapneſs and heavily taxing all others—by fixing on drunkenneſs, the deepeſt odium, as a habit utterly diſqualifying a man for all advancement in life—by adviſing the candidates for election into Parliament, unanimouſly to agree never to canvaſs by intoxicating the electors, but to give them only moderate meals, and to beſtow for permanent county or borough uſes, the reſt of the money which they meanly laviſh on the occaſion.

Let there be an annual diſtribution of præmia for *honeſty*, for *ſobriety*, for *induſtry*, for acts of *humanity*, for admirable inſtances of generous virtue, in every pariſh, town, and county. We give prizes for the rearing of bullocks: and can we afford none for the encouragement of human virtue? It is true, that theſe prizes could not do much. Yet, they would do ſomewhat. They would make virtue creditable. They would bring good conduct in faſhion. They would create conſpicuous diſtinctions between the good and the bad. They would ſignally mark out thoſe examples which are the moſt worthy of imitation. In caſes where expence and pains are to be employed expreſsly for the purpoſe of gaining prizes,—the offer of prizes does not a little. Here, then, where no commercial riſk is to be incurred, they might ſurely do more.

Suppreſs as much as poſſible, that gambling ſpirit which is ſo generally prevalent throughout theſe kingdoms,—that deſire and hope to make a fortune by chances and without giving induſtry, honeſty, and continual care, as a compenſation to the community, for the advantages which may be gained in it. The miſchiefs proceeding from the LOTTERY are great beyond calculation. *It actually diminiſhes the quantity of the productive labour in Great Britain and Ireland, to a value much greater than the ſum which it yields to Government.* This truth, if called on, I am ready to prove to incontrovertible certainty. TONTINES are, in fact, a ſpecies of gambling; and, as ſuch, ought to be diſcouraged. All money-ſpeculations upon lives, are of the ſame character.—The evil of which I complain, is perhaps never to be utterly extinguiſhed. But, wide is the difference between diminiſhing and augmenting it, as much as is poſſible by legiſlative and public means.

The preſs, that grand engine for promoting induſtry and virtue and knowledge, is alſo liable to be employed for the ruin of the public morals. It is thus abuſed, to an aſtoniſhing degree, at the preſent moment. I have taken the pains to make a *collection* from the Daily Newſpapers publiſhed in London, of PASSAGES referable to the heads of—OBSCENITY—BLASPHEMY—MOCKERY of RELIGION and its Miniſters—RIDICULE of Piety, Honeſty, and Chaſtity—SCOFFING againſt all the public authorities of the country—MALICIOUS CALUMNY—BAD ENGLISH—FALSE WIT—and ABSOLUTE NONSENSE. The whole is ſuch as might put to ſhame, an aſſembly of Dæmons. It is a diſgrace equally to the reaſon, the taſte, and the virtue of the age. I ſhall not here enlarge upon it; as I intend to print and publiſh the collection, that the public may judge for themſelves. But, is it not reaſonable,—is it not ſufficiently compatible with the freedom of the preſs—that *daily* (or rather all ſo frequent in publication as once a week) Newſpapers ſhould not be publiſhed otherwiſe than under *annual licences ſimilar to thoſe of ale-houſes*, ſimilar in ſome ſort to the reſtraints and inſpection under which the theatres give their exhibitions? The morals, taſte, and reaſon of all ranks high and low, are dreadfully corrupted by the circulation of ſuch papers. What they afford to the revenue, is nothing, in compariſon with the miſchiefs of immorality which they atchieve. Better acquire the ſame revenue by encouraging the drinking of gin and the eating of opium, than tolerate the Newspapers of this metropolis, in their preſent profligacy.—Beſides, though the preſs ought to be left free; yet, the immoral abuſes of its freedom, ſhould be checked, more vigilantly than at preſent. There ſhould be an Inſpector of the Preſs, not to licenſe, but to read, every new publication, and to make a weekly report to the Attorney-General. Upon his report, books hurtful to public morals might be examined by the Crown-Lawyers. If they ſhould, then, be found to deſerve ſuppreſſion,—proſecutions ought to be immediately inſtituted againſt their publiſhers and authors.

By all theſe means, when in full efficiency, in addition to the influences already employed for the preſervation and improvement of good morals,—I do not heſitate to affirm, that, at leaſt TEN or TWELVE Millions might be added to the preſent value of the productive labour of this country. Our means to procure ſubſiſtence would be, by ſo much, increaſed, in compariſon with the quantity of ſubſiſtence which we need.

———

THESE, Sir, compoſe, together, the SYSTEM of MEANS, which I would humbly, propoſe, as ſufficient, in co-operation with the other progreſs of improvements, at preſent going on in theſe iſles, to prevent any future experience among us, of ſcarcity and dearth. I would not truſt to any one of them

ſingly, but to the whole in union. Were this plan once in full efficiency; I ſhould hope, that the prices of proviſions might fall continually lower; while population would increaſe in a continually higher ratio; life would, here, become ſtill more and more comfortable; the national character, greater and more illuſtrious.—Unleſs Britain and Ireland can be brought to ſupply *proviſions* to their inhabitants, and *raw materials* for all their manufactures of primary importance; theſe kingdoms muſt quickly ceaſe to flouriſh.—The fame of a Cecil, a Clarendon, a Walpole, a Chatham, of the greateſt miniſter of any nation or any age, were poor in compariſon with his, who ſhould eſtabliſh a ſyſtem of means adequate to ſecure perpetual plenty to his country.

Intreating, that the honeſty and unfeigned benevolence of this addreſs, may obtain your pardon for its freedom;

I have the honour to be,

Sir, your obedient ſervant,

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ON THE MOON's INFLUENCE ON VEGETABLES.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

THOUGH it is not in my power to give a direct anſwer to the queſtion of "An Experimentaliſt," p. 123, he may not be diſpleaſed to find that I have taken ſome pains to aſcertain a fact nearly related to that which has engaged his attention. It has long been a general opinion among *gardeners*, and even at this time it is ſtill maintained by many of them, that the moon's influence on vegetables is very great, and that many plants if ſown at an improper time of the moon's age will never attain their proper degree of perfection. It is but juſt to obſerve, that though this has been the general opinion, there has long been doubts reſpecting it; and Sharrock, in 1671, remarks, that "neither do gardeners that work, nor authors that write, preſcribe alike rules, but contradict each other in their directions for the particular obſervation of this planet, as to any intended production."—Having, however, been formerly a diſciple of ſome old practitioners who held this notion, upon being compelled by experience to ſuſpect its validity, I undertook a ſeries of obſervations for determining the point, and the reſult was a full conviction that the phaſes of the moon have no influence whatever on the growth of plants, uſually cultivated in gardens, and therefore probably as little on any other vegetables.

March 18, 1802. J. J. G.

ON RAISING POTATOES FRON THE SHOOTS.

To the Editor of the Commercial and Agricultural Magazine.

SIR *Dublin, March* 13, 1802.

IN your Magazine for laſt month, p. 97, I obſerved an extract from the Rev. Dr. Maunſell's Account recommending his method of cultivating Potatoes, from the Shoots, and in the ſame Magazine, p. 146, the following obſervation. "This diſcovery may be applied with advantage in the culture of Potatoes, whenever there is a ſcarcity of ſeed Potatoes. But let no man who means well to the potatoe planter recommend it for uſe, except in ſuch an emergency." As this apparent contradiction may perplex your Readers, it may be explained by remarking, that it has been the uſual cuſtom of the growers of potatoes to throw away the ſhoots or ſprits of potatoes as uſeleſs, by which means a great national loſs has been occaſioned. It has been lately proved to be the intereſt of the patatoe planter to preſerve and plant theſe ſhoots; they will be a certain ſaving of a conſiderable quantity of cuttings or common ſets, as whatever land is planted with ſuch ſhoots will render the uſe of the quantity of potatoes in ſets heretofore required to plant ſuch a portion of land unneceſſary, and therefore either more land may be planted with potatoes or the ſurplus may be uſed for food. The Dublin Society have thought this matter an object of ſuch conſequence that they have lately circulated in Ireland an Eſſay upon the ſubject which I have ſent you, and will not be unworthy a place in your valuable Magazine.

I am, Sir, your's, B. Y.

ESSAY, &c.

"MY LORDS AND GENTLEMEN, *Dublin, Feb.* 11, 1802.

"AGREEABLE to your requeſt, I have endeavoured to compreſs the entire culture of Potatoes from the Shoots, (as mentioned in my five books addreſſed to the Dublin Society) into the ſimpleſt and moſt conciſe manner.

"As the time for that culture is approaching, let every gentleman farmer, and cottier, who have their potatoes in heaps in the houſe or field, in the months of March, open their heaps, and if the ſhoots be ſufficiently ſtrong, and the ground prepared for the culture, let them make half drills with a ſpade, that is, throw the earth on one ſide only, to cover the ſhoots when planted, leaving the other as a bank to ſupport the ſhoot; let the ſhoots be carefully picked from off the potatoes, and given to children of about ten years old to plant in the drill, about ſeven or eight inches aſunder, obſerving to plant the root of the ſhoot downward; let a ſmall quantity of dung be put upon the ſhoot in the drill, and then covered lightly with earth, to prevent it from any ſlight froſt; when the ſhoot throws out its leaves, and is about four inches above ground, give them a covering, leaving about two inches of the green ſtock above ground, and as they procee

in growth, let them be covered as before mentioned, till the earth between the ridges raiſes the drill at leaſt twelve or fourteen inches high; the ſhoots ſhould be about ſix inches long, and planted in a hale and vivid ſtate, if not, they will not fructify, which is the reaſon why ſo many experiments on the culture from the ſhoots miſcarry; if the farmer ſhould want to ſell any of his potatoes from his heap, let him take off the ſhoots with care and lay them in ſmall bundles without hurting or crampling them up, but lengthways over each other, and cover them with earth, and they will remain in a vegetative ſtate for a month, till the farmer has prepared his ground for his general crop, and as often as he has occaſion for potatoes for his family, let him do the like; this is a moſt eſſential piece of information to convey to the countryman, as it leaves him without excuſe, and ſhows him how to preſerve his ſhoots intended for his years crop, as the autumnal ſun informs the gardner, how to preſerve his ſeed intended for the next year's ſowing; this mode of culture does not hurt a parent potatoe, but leaves it whole and entire for human ſuſtenance, an object moſt deſirable, as, by the accounts we have from Great Britain, no leſs a ſum than eleven million ſterling has been paid for human ſuſtenance, in one year, and that perhaps to foreigners or enemies.

"An Iriſh acre of potatoes will require two hundred and forty ſtone to till it properly, in the old mode of culture by ſets, which, with good and careful dreſſing, ſhould produce a hundred barrels, twenty ſtone to the barrel; ſuppoſe that a farmer, who intends ſowing an acre of potatoes, ſhould have no more vivid ſhoots than will plant half an acre, does he not ſave fifty barrels for human ſuſtenance, by planting the ſhoots, which, in the general culture of that article, would be a ſaving of ſeveral millions of barrels every year.

"As wheat or barley are generally ſown after a crop of potatoes, I would recommend it to every gentleman, farmer, and cottier, to have a piece of ground prepared in their new potatoe garden, for tranſplanting all the potatoe plants that grow up as weeds amongſt the wheat or barley crop, for they never turn to any account; let a weeder in the month of May go into the field, and pull up every potatoe ſtock, and let drills be prepared, and as faſt as taken up, let them be tranſplanted as you would cabbage, or any other vegetable, leaving a couple of inches above ground, and earthed as you did the ſhoots, and you will have a moſt abundant crop; and I have taken the potatoe, from whence the ſtock grew, and cut it into ſets, and that alſo produced good potatoes: this, alſo, is an additional ſupply of human ſuſtenance heretofore unnoticed, and ſhould be attended to. And here I ſhall obſerve, that tranſplanting ſtock is highly advantageous, for by planting the ſhoots early, in rich warm ground, and tranſplanting them in the month of March, an early crop

may be had in the month of May; and, if any ſhoots ſhould remain unplanted, let them be planted as you dig out your potatoes, and you will have a ſecond crop on the ſame ground the ſame year; this method requires but a ſmall piece of ground, and leaves the tiller leiſure for a more extenſive cultivation. I have before mentioned, that the ſhoot ſhould be about ſix inches long before planted; my reaſon is, that, if let to grow more luxuriantly, it might hurt the parent potatoe, which is intended for human ſuſtenance; and, if much leſs, would rather be too weak for the purpoſe of the crop. Although I have recommended the drill by the ſpade, as practiſed by the lower orders of the people, who have neither horſe nor plough, yet the plough may be uſed for the drills, provided care be taken that the ſhoots be not injured by the trampling of the horſes. In ſhort, the ſhoots will grow in any direction they may be planted, either in the lazy-bed way by the dibble, or on graſs ground; the latter culture I tried laſt year with very great ſucceſs; for it is clear, that potatoes, in their vegetative ſtate, do not dip in the ground, but aſcend to the ſurface, in proportion as they he dunged and earthed.

"Thus, my Lords and Gentlemen, I have endeavoured, agreeable to your requeſt, to ſimplify in the moſt conciſe manner the mode of culture from the ſhoots.

"I am, my Lords and Gentlemen,

"With the trueſt reſpect, your very humble ſervant,

W. MAUNSELL."

A Letter from Alderman Alexander.

"IN a ſmall paddoc, nearly ſquare, which had not been broken up for many years, containing near half an acre of ground, (wanting about twenty perches of it) which I had lightly ploughed in October, 1800, and harrowed fine on the ſecond of January, 1801,—and between the ſecond and ſixth of ſame month planted, in twenty ridges, with five barrels of early white potatoes, which ſeed I got from the county of Wicklow,—which as ſoon as planted, and finiſhed in the uſual way, I had covered over, about half an inch deep, with ſea ſand. In July following I dug out fifteen ridges of them—ſuch part of which as I wanted for my own table, I uſed; the remaining produce of the fifteen ridges I ſold at three halfpence per pound, and received (in money) for them 31l. 13s. 7½d.—Early in the month of June, previous to my digging out the above mentioned fifteen ridges of early potatoes, I put two barrels of apple potatoes (cut) into a ſmall ſeedling bed, nearly as cloſe to each other as I could lay them, and covered them with about three inches of good mould—as ſoon as I had the fifteen ridges of early potatoes dug out, I ploughed the land lightly, and harrowed it well,—I then tranſplanted (into drills) from the ſeedling bed, the apple potatoes,

on the sixth and seventh of August, into the ground, which contained about thirteen ridges of the fifteen of my early potatoes; which produced me, in November following, eleven barrels and a half of choice good apple potatoes.—In the ground of the other two ridges, I sowed turnip-seed, which produced me an excellent crop.

"The remaining five ridges of early whites I did not dig (except a few now and then for the use of my own table) until September, when they produced me seven barrels of choice white seed potatoes.

"The barrel contains twenty stones."

Willow-Park, near Dublin, Feb. 9, 1801.

HINT FOR THE EMPLOYMENT OF DISCHARGED SEAMEN.

To the Editor of the Commercial and Agricultural Magazine.

SIR,

IN the present improving state of this country by canal navigation, every hint that contributes to decrease the quantity of horses necessary to it, and to give employment to a probable influx of discharged seamen, I hope will not be unworthy of insertion in your respectable Magazine.—When in China I have observed the largest craft in the river sculled very expeditiously along by means of three oars, one a very large one, worked over the rudder; the others worked on each quarter. The part where these sculls touch the boat a spike of iron arises, on which the scull rests, which greatly contributes to the facility of working them.

As I am not sufficiently acquainted with the construction of the boats or oars of the Chinese to give a minute description of them, I wish to suggest the idea to those gentlemen who are the great promoters of national improvement, to make their enquiries of some of the gentlemen who trade to China, who may, perhaps, give the information necessary: it would be an object worthy of them to procure models of the boats and oars of the Chinese; I am sure much national utility would result from it, not only to the canal navigation, but to that of the Thames and other rivers.

If this hint can be effected, the horses employed on the canal navigation will be unnecessary, and in their place a number of seamen may be employed, an object worthy of an expected peace.

I offer this only as a hint, which I sincerely wish I could give more perfectly; such as it is, I hope it will contribute to such enquiry as may be ultimately useful to my country.

I am your humble servant,

March 20, 1802. M.

DYES FOR COTTON.

For the Commercial and Agricultural Magazine.

A BLACK colour may be dyed on cotton by moiſtening it well in warm water, then having ready a hot liquor made by boiling Aleppo galls, or Faro Sumach, in water; dip your cotton therein, and work it well, then preſſing out the ſuperfluous liquor, enter your cotton either into black vat liquor, made by a mixture of water alder bark and iron hoops, which has ſtood for ſome months in a caſk, or into a ſolution of iron in vegetable acid; when well wet therewith, and the ſuperfluous liquor preſſed out, enter your cotton into a decoction of logwood, to which a little verdigris is added. Repeat this proceſs until the fulneſs of colour is completed. Waſhing and drying betwixt the repeatings is neceſſary.

MADDER RED DYE OR COTTON.

MAKE a decoction of Aleppo galls in hot or boiling water, let it ſtand to ſettle, but not to be cold; then your cotton having been previouſly prepared by having been wet in a cold ſaturated ſolution of clear alum liquor, the acidity of which has been neutralized by the addition of a little chalk, and the cotton afterwards dried and waſhed, enter it in your gall liquor, and work it well therein; then enter your cotton into a copper pan, containing warmiſh water and ſome fine Dutch madder, and gradually bring this liquor to a boil, working your cotton therein the whole time, till your colour is ſufficiently deep, then waſh your cotton in water and dry it.

ENUMERATION OF PATENTS LATELY ENROLLED.

December, 1801. CHARLES Grierſon, of New Bond-ſtreet, in the pariſh of St. George, Hanover-ſquare, Middleſex, Gunmaker; for a breech and lock for ſingle and double-barrel guns. piſtols, and other fire-arms, on a new and improved principle.

January 2, 1702. Alexander Bryce, of Glaſgow, in North Britain, Merchant; for a method of drying all kinds of yarn, whether linen, woollen, cotton, or ſilk, or compoſed of all or either of theſe articles, as alſo of all kinds of cloth or ſtuffs, commonly called piece goods.

——— Thomas Parkinſon, in the pariſh of St. George, Bloomſbury, Middleſex, Gentleman; for an apparatus to be applied to engines for conveying fluids therefrom.

——— Abner Cowell Lea, of the pariſh of Aſhton, near Birmingham, Warwickſhire, Manufacturer; for a method of manufacturing the furniture for umbrellas and paraſols.

——— 9. Lewis James Armand Eſtienne, of Paul-ſtreet, near Finſbury-ſquare, Middleſex, Gentleman; for an invention, communicated to him by a foreigner, of reducing human excrement into a powder, diveſted of all nauſeous ſmell, preſerving at the ſame time

its fertilizing properties in rendering land infinitely more productive and vegetative than any other manure hitherto discovered.

January 16. Robert Brown, of New Radford, Nottinghamshire, Lace-manufacturer; for a method of manufacturing nets of all kinds.

——— Joseph Lewis, of Brimscomb, Gloucestershire, Dyer; for improvements in the art of dying, by means of a new method of cooling the cloth and other piece goods (particularly in dying black); and a new mode of applying the fire for the purpose of heating the boiler or other vessels, and which may be applied to the heating of other boilers or vessels where heat is required.

——— Joseph Hall, of Pitt-street, in the parish of St. Mary, Newington, Surrey; for a hammer for guns, pistols, and other fire-arms, which contains the prime, and effectually preserves it from damp and rainy weather.

——— 23. Richard Willcox, of the city of Bristol, Engineer; for improvements on the steam-Engine furnace or boiler, and air-pump.

——— 26. Paul De Philipsthal, of the Lyceum, in the Strand, Gentleman; for an optical apparatus, whereby he is enabled to represent, in a dark space or scene, the human figure, in various characters, proportions, or sizes, and by which means painters and other artists may accurately enlarge or diminish with more certainty and facility than has hitherto been known or done.

——— 28. James Sharples, of the city of Bath, Gentleman; for new-invented mechanical powers applicable to steam-engines; part of which machinery may be applied to other useful purposes.

——— Thomas Charles Baker, of Poplar, in the parish of St. Dunstan, Stepney, Middlesex, Millwright; for vanes or sails for windmills.

CRITICAL CATALOGUE.

I. *Communications of the Board of Agriculture, on Subjects relative to the Husbandry and Internal Improvement of the Country.* Vol. III. Printed by William Bulmer. Quarto, 292 pages. 1802.

IN December, 1800, a committee of the House of Lords desired the Board of Agriculture to examine into, and report to their Lordships, the best means of converting certain portions of grass-lands into tillage, without exhausting the soil; and of returning the same to grass, after a certain period, in an improved state, or at least without injury. The board offered the following premiums, in order to obtain information on so important a subject:

"To the person who shall produce, on or before the first day of February, 1801, the best and most satisfactory Essay on the subject before mentioned; distinguishing respectively, what part of the plan recommended, or of the detail given, is the result of actual experiment, accurate observation, or well-authenticated information—two hundred pounds: for the second best—one hundred pounds: for the third best—sixty pounds: for the fourth best—forty pounds. And to such persons who may communicate information, which, though useful, may be considered of less importance—smaller rewards, proportioned to the opinion of the Board."

The preſent volume conſiſts of communications imparted to the Board, in conſequence of the preceding advertiſement; but not in claim of premiums. The information is arranged into fourteen numbers, containing reſpectively the ſtatements and obſervations of gentlemen high in agricultural reputation.

No. 1, contains hints as to the advantages of old paſtures, and on the converſion of graſs-lands into tillage; by Sir John Sinclair. Though the ingenious and able author modeſtly entitles his communications *hints*, they really conſtitute a A VERY IMPORTANT ESSAY.

Before he diſcuſſes the propriety of plowing up old paſtures, he examines the moſt important advantages imputed to them. The firſt advantage contended for, is, that old paſtures anſwer better for making butter and cheeſe, than artificial graſſes; and the idea is probably well founded. All ſeeds, particularly clovers, give the milk a ſtrong taſte; and, although the quantity may be as great, or even greater, yet the quality is always coarſe; it will caſt up leſs cream, in proportion; the butter is leſs firm and waxy; and it will not keep ſo well. The cheeſe, alſo, is conſiderably inferior. Old paſtures are better calculated for feeding cattle and ſheep. Hay made of all graſs, though not ſo bulky, yet is of a better quality, and will keep longer in a good condition, than hay made from artificial graſſes, particularly from clover and rye-graſs. There are, certainly, many old grazing paſtures, which can afford to pay a conſiderable permanent rent, in graſs, even at a diſtance from any populous town; the value of which might be reduced, if ſubjected to the plough. Water-meadows, alſo, ſhould never be ploughed; as they furniſh ſo large and valuable a produce, in Spring, in Summer, and in Autumn, without any other help than water; whilſt the manure, made from that produce, goes to enrich the reſt of the farm. With theſe exceptions, and that of land apt to be overflowed, there is every reaſon to believe, that old paſtures may occaſionally be converted, with public advantage and private benefit, into arable land. The author next conſiders the obſtacles to the propoſed converſion. Theſe are chiefly tithes; next the reſtrictions of the landlord. The tithes operate againſt this addition to tillage, by depriving both the landlord and the tenant of ſo large a proportion of the profits to be derived from it; and as there is every reaſon to believe, that a very conſiderable extent of land, in England, is kept perpetually in graſs, in order to avoid the payment of tithes in kind. With reſpect to the landlord, conditions are propoſed, under which paſtures may be ploughed up, not only without detriment, but even advantage to the landlord. The author proceeds to conſider the preparation of the ſoil for ſuch a converſion; the courſe of crops; the management during the rotation; and afterwards, the mode of again laying it down in graſs. Coming from accuracy of detail to reſults, the author ſhews, that any tenant will be willing, and able to give an increaſe of rent, for the liberty of plowing up old paſtures. The conditions may eaſily be framed for improving the emolument of the landlord, without ultimately exhauſting the ſoil. By converting paſture lands into arable, a much greater quantity of food is produced. The amount from an acre of arable, on the average of three years, a fallow-year being included, is nine and a half times greater than from an acre of feeding ſtock. This is a moſt

important circumſtance; as it proves, that where one million of people may be maintained by paſturage, from nine to ten millions may be maintained by tillage. Our author concludes, that, on the whole, though it may not be adviſeable to recommend the plowing up of very rich old paſtures, or water-meadows, or land apt to be overflowed; yet, with theſe exceptions, there is every reaſon to believe, that other ſorts of graſs-lands may be rendered much more productive, by being occaſionally converted into tillage; and, for that purpoſe, it is deſirable, that the converſion of ſuch lands ſhould be promoted as much as poſſible;—by removing the obſtacles to ſuch converſion; by enforcing *the neceſſity of commuting tithes* (without which, no conſiderable tract of old paſture can be broken up); by pointing out to landlords, the conditions under which they may agree to ſuch a plan, not only without detriment to the real value of their property, but alſo yielding a more important addition to their income; and, above all, by explaining to Parliament, and to the public, that the meaſure above recommended is one which may effectually tend to prevent future ſcarcities; and to render this country independent of foreign nations, in the important article of proviſion.

No. II. is the production of Doctor John Walker, profeſſor of natural philoſophy in the univerſity of Edinburgh. Its ſubject is a memorial concerning the preſent ſcarcity of grain; which he imputes not to temporary cauſes, but to a general change in the diet of the people; a great increaſe of conſumption of animal food, conſequently of demand for that food; of price; and thus of the inducements to the farmer to graze more than he ploughs. This general fact exiſts in Scotland, in a very ſtriking light. The cattle which were raiſed, went chiefly to England; and formed the principal article of export, before the union. But, ſince that period—though, in conſequence of increaſed cultivation, a much larger quantity of cattle is produced—the exportation has gradually diminiſhed. By the improvements of the ſoil; by the increaſe of arts, of manufactures, and of trade; the conſumption of fleſh-meat is now, perhaps, ten times greater than it was at the end of the laſt century. Though agricultural knowledge be ſo much increaſed in Scotland, the quantity of grain is very much diminiſhed; and, even in the beſt years, is now inſufficient to ſupply the inhabitants. By a detailed calculation, the author ſhews, that an acre in paſturage will only ſupport one man one-third of the year; whereas, in tillage, it will ſupport three men a whole year. But, from the increaſing demand for butcher's meat, and the comparatively ſmall expence and trouble of paſture land, it is more profitable. A remedy for this calamity of decreaſing tillage, is abſolutely neceſſary. To obtain this remedy, our author enquires, who are the principal holders of paſture land, in Scotland. The fertile arable lands, in that country, long occupied as paſture, are chiefly thoſe in the poſſeſſion of landed proprietors, or in large and extenſive farms. If a due proportion of theſe lands were reſigned to tillage, that is, from fifty to one hundred acres in each pariſh, this would be an ample ſecurity againſt the ſcarcity of grain in Scotland, even in the worſt of ſeaſons. A landed gentleman, by breaking up three or four acres of his old graſs, would do more to alleviate the preſent public diſtreſs, than he can poſ-

ſibly accompliſh by the moſt extenſive uſe of ſubſtitutes for grain. The noblemen and landed gentlemen, on the preſent urgent occaſion, have manifeſted the moſt laudable intentions towards their country. It is not eaſy to deviſe a meaſure better adapted for realizing thoſe intentions, than that which is here propoſed. Nor is it ſo unprofitable as may at firſt be thought. The paſture ſenſibly diminiſhes in a courſe of years; which is occaſioned by a thick and luxuriant growth of the various moſſes, or muſcous plants on the ſurface of the ground. This renders it neceſſary, after a number of years, to break up ſuch lands, and to ſubject them to tillage, for two or three years, in order to reſtore and to improve the paſture. For this purpoſe, ſuch graſs-grounds are uſually let off for two or three years, to neighbouring farmers. The propoſal, therefore, of bringing old graſs-grounds into tillage, does not require a proprietor to engage in huſbandry; or to provide ploughs, horſes, and ſervants, for additional tillage. All that he has to do, is to let off, to produce two or three crops of corn, ſuch parts of his graſs-ground as are moſt convenient; and which no doubt may be let at preſent, with mutual advantage, at a very high rent. In this proceſs, no manure is neceſſary upon ſuch lands. After the fourth year, they are returned again to graſs, with the paſture conſiderably improved; being freed from a matted moſs of decayed roots, and an injurious growth of moſſes with which it was overrun. The meaſure here recommended, tends to reduce the prices, by the introduction of plenty; and that within the ſpace of eight or nine months.

The third eſſay comes from John Dalton, Eſquire, a gentleman of the Weſt Riding of Yorkſhire; who mentions ſeveral objections to the converſion, anticipated by Sir John Sinclair. This writer, however, gives, though a ſhort, a very judicious account of the beſt mode of converſion. Burning and paring he thinks the moſt expeditious and beneficial proceſs. When the aſhes are ſpread, the field ſhould be plowed true, but ſhallow, in order not to bring the aſhes too deep; then harrowed very well, till fine, and plowed ſhallow again acroſs; this, with a ſecond good harrowing, will mix and incorporate the ſoil and aſhes ſo well, that it is hardly poſſible to miſs a crop of turnips, if any rain at all falls during the month of June. Mr. Dalton coincides with Sir John Sinclair in the precautions which are recommended to landlords for preventing the exhauſtion of the ſoil by the avarice or inconſideration of tenants.

Mr. Maxwell, of Fleaton, near Stilton, in Huntingdonſhire, ſhews, from his own experience and obſervation, that paſturage judiciouſly converted into tillage, improves inſtead of exhauſting ths ſoil.

Sir Charles Middleton, of Teſton, in Kent, explains his own practice, tending to eſtabliſh the ſame important truths.

The five firſt Eſſays are not in claim of the premiums. The ſubſequent Eſſays were in claim of the premiums. The firſt of theſe, contained in No. VI. the production of the Reverend Mr. Cloſe, of Hordle, near Lymington, manifeſting great candour in a caſe reſpecting his own particular revenue—is written with much judgment, ſkill, and elaboration. In his preliminary obſervations,

he ſtates the chief and moſt obvious obſtacles to the improvement of agricultural knowledge in general. Theſe are tithes; the difficulty and expence of incloſing waſte lands; expenſive and injudicious leaſes; want of knowledge in the practical farmers; the great increaſe of the poor-rates; and a want of that energy which formerly characterized the agricultural labourers of this iſland. Though himſelf a clergyman, he conſiders tithes as the chief obſtacle to every kind of agriculture. In conſidering a remedy for this evil, he mentions a plan, frequently mentioned in converſation, to ſubſtitute land inſtead of tithes. To this mode of commutation he objects, becauſe clergymen might want ſkill and capital for improving ſuch tenements; and, though they ſhould poſſeſs both, they could not, in common prudence, ſink capital on ſo uncertain a tenure. For this laſt reaſon, they could not let their lands to perſons likely to improve their productiveneſs. He therefore propoſes, that the tithes of the kingdom be valued, and each proprietor of land have the refuſal of the tithes of his own property, at the valuation. Should this buſineſs be well conducted, the intereſt of half, or at moſt three-fourths, of the capital thus raiſed, and veſted in the public funds, would ſecure to the clergy the amount of their preſent incomes; and the remainder of the capital might be an accumulating fund, to prevent the preſent incumbents, or their ſucceſſors, from ſuffering any injury by an advance on the neceſſary articles of life, and a conſequent depreciation in the value of the circulating medium. Once in four or five years, the average of the price of wheat, the ſtaple, and moſt neceſſary grain in the country, ſhould be taken; and ſhould it appear that any advance had taken place, the incomes of thoſe who had diſpoſed of their tithes ſhould receive a proportionate addition. But, as preſent incumbrance could not be compelled to accept of ſuch a ſubſtitution, he propoſes, that ſuch offers ſhould be made as might induce them to agree. The other parts of his Eſſay are very able, mingling very extenſive and elaborate reſearches, with philoſophical deductions and practical application. Mr. Cloſe's Eſſay, indeed, is a moſt valuable acceſſion to agricultural knowledge and ſcience.

The very important contents of theſe communications render it neceſſary for us to divide our remarks, and to part from the further conſideration to the following Number.

We cannot, however, finiſh the preſent part of our review without expreſſing our high approbation of the tribute beſtowed in the inſcription to the illuſtrious Patron of agriculture, whoſe premature deceaſe is ſo very univerſally lamented. It is in the following terms. "To the memory of the moſt noble Francis, late Duke of Bedford, this volume of communications is inſcribed by the Board of Agriculture, as a token of gratitude for the benefit experienced by the Board from his Grace's uniform attention to its intereſts ſince its firſt eſtabliſhment, and as a teſtimony of the ſincerity with which they, in common with every friend to the improvement of the country, lament the loſs of the moſt judicious and munificent prompter of the national agriculture in all its branches.

"By order of the Board, CARRINGTON, PRESIDENT."

(*To be concluded in our next.*)

II. *An Account of the Mode of Draining Land, according to the Syſtem practiſed by Mr. Joſeph Elkington; ſecond edition, corrected and enlarged; drawn up for the Conſideration of the Board of Agriculture.* By JOHN JOHNSTONE, *Land Surveyor.* Nicol. One volume Octavo, 164 pages, beſides a conſiderable number of plates.

The importance of drawings to agriculture is ſo extremely obvious as to require no elucidation. Thoſe, therefore, who have advanced this valuable preparative, deſerve highly of all who are benefited by agriculture. Foremoſt in this art, in the opinion of agricultural judges, is Mr. Joſeph Elkington, a Warwickſhire farmer, whoſe beneficial diſcoveries earned and obtained the remuneration of the King and Parliament. Mr. Elkington's health being extremely precarious, there was a riſk that the public might loſe the benefit of the knowledge he had acquired. To prevent ſo material a loſs, the Board ſent Mr. John Johnſtone to viſit, in company with Mr. Elkington, the principal drainages he was executing; and to take drawings thereof. The preſent publication is the reſult of the examination, together with Mr. Johnſtone's remarks.

Our author narrates the origin of Mr. Elkington's diſcovery, and explains the principle of his mode of draining. From this account, we ſee that Mr. Elkington was very accurately acquainted with the conſtituents of ſoil, eſpecially as affected by different degrees of porouſneſs and humidity. Wetneſs proceeds from two cauſes—ſtagnation of rain-water, and ſprings under the earth. His firſt object is to examine ſprings and bogs. His chapter on the drainage of bogs is extremely important, and ſhews how much land may be gained from unproductiveneſs to fruitfulneſs. He purſues draining through all the diverſity of irriguous ſoils, and quotes a variety of inſtances; very ably explains the nature and purpoſes of different implements; deſcribes and illuſtrates their effects. He next takes a view of hollow and ſurface draining, and ſhews the circumſtances and ſituations to which they are reſpectively applicable.

An Appendix contains hints for the improvement of bogs after being drained. On the whole, this is a very uſeful treatiſe on one of the chief arts which miniſter to agriculture.

III. *A Treatiſe on Brewing: Wherein is exhibited the whole Proceſs of the Art and Myſtery of Brewing the various Sorts of Malt Liquor; with practical Examples upon each Species. Together with the Manner of uſing the Thermometer and Saccharometer; elucidated by examples, and rendered eaſy to any Capacity, in brewing London Porter, Brown Stout, Reading Beer, Amber, Hock, London Ale, Windſor Ale, Welch Ale, Wirtemburg Ale, Scurvy-graſs Ale, Table Beer, and Shipping ditto.* By ALEXANDER MORRICE, Common Brewer. Symmonds, 1802. Octavo, 180 pages.

The work commences with a hiſtory of London brewery, comprehending the variations of beverage, price, and taſte, during the eighteenth century. From hiſtorical he proceeds to the didactic; and deſcribes the outline of a brewhouſe and its utenſils. From the receptacles he proceeds to the materials; inveſtigates malt, and the modes of its preparation; proceeds then to the analyſis and treatment of hops. Thence he advances to porter. He denies the commonly-received opinion, that Thames water is abſolutely ne-

ceſſary for brewing good porter. Some of our principal brewers uſe the New River. Hence he proceeds to detail the proceſs of Brewing, and the various conſtituents. The diverſity both of conſtituents and proceſs for producing the various beverages mentioned in the title-page. Without following him through all his proceſſes, we muſt expreſs our opinion, that the work ſhews practical ſkill, with a conſiderable degree of chemical knowledge; and may be peruſed with peculiar advantage by thoſe who wiſh to brew for themſelves.

Obituary.

FRANCIS, DUKE OF BEDFORD.

SINCE we laſt addreſſed ourſelves to our readers, Providence has been pleaſed to viſit England with an event afflicting to the public, but of the moſt ſignally melancholy importance to the votaries of Britiſh agriculture. We truſt our readers will approve the following attempt to offer a ſmall tribute of truth to the deceaſed patron of rural improvement.

In eſtimating conduct, and appreciating character, if we would know the real value, we muſt conſider the circumſtances in which an actor has been placed, and the ſphere in which he has moved. All ſituations are not equally favourable to the formation and exerciſe of the higheſt human excellencies, wiſdom and virtue. Riches and power *poſſeſſed without effort*, in the average of experience, have not been found the moſt conducive to the perfection of man's underſtanding and heart. Too often not affording incentives to action and enterprize, they deaden emulation, produce intellectual and moral indolence, fill up the vacuity of life with frivolity, and, affording unbounded means, miniſter excitements to every kind of pleaſurable gratification, vitiate the affections from unreſtrained indulgence, and ſtupify the head from want of uſeful exerciſe. But the greater and more frequent their tendency to produce hurtful effects, the more meritorious the individual, who, reſiſting their ſeductive allurements, takes not their worſe but their better part, and employs wealth and command for thoſe beneficial purpoſes to which they may be rendered ſubſervient. If uncontrouled ſway had a natural tendency to form a Caligula, the more praiſe is due to an Antoninus for reſiſting ſo dangerous temptations.

John, Duke of Bedford, born in 1710, married firſt a ſiſter of the late Duke of Marlborough, who died, leaving his Grace no iſſue. He ſecondly married the daughter of Earl Gower, ſiſter to the preſent Marquis of Stafford, by whom he had a daughter, now Ducheſs of Marlborough, and a ſon, born in 1739, Francis, Marquis of Taviſtock. This Nobleman, an amiable and accompliſhed youth of very high promiſe, married a daughter of the Earl of Albemarle, by whom he had two ſons, Francis, born July 22, 1765, and John, born July, 1766; when, in 1767, he was untimely cut off by a fall from his horſe, leaving the Marchioneſs pregnant of a third ſon, William. Deeply afflicted by the death of a moſt beloved huſband, the year after ſhe followed him to the grave. The Duke of Bedford having inherited a princely fortune from his illuſtrious anceſtors, though ſplendid in ſtyle and hoſpitality, and munificently liberal * in patronizing merit, yet prudent in the general management of his affairs, had made a very conſiderable addition to the family property, and dying in 1771, left to his eldeſt grandſon, Francis, his honours and ample poſſeſſions. In the ſixth year of his age young Francis became Duke of Bedford. A ſituation more dangerous to intellectual and moral excellence than that in which he was placed cannot eaſily be imagined. "He ſaw nothing in the world (ſays his friend Mr. Fox) but what was fair

* See Fielding's Dedication of Tom Jones to Lord Littleton.

and inviting. Under theſe circumſtances, would it have been ſurprizing if his heart had been hardened, if his views had been contracted, if he had wanted the common ſympathies with diſtreſs, if he had thought of little elſe but unuſual gratifications? The Roman ſatyriſt had juſtly obſerved

Rarus enim ſenſus communis in illa fortunâ,

But he remained untainted. He became a man ſuch as the moſt favourable ſituations have ſeldom formed. Amidſt proſperity he learned all the virtues of adverſity." His Grace was left ſolely to the care of his grandmother, the late Ducheſs Dowager of Bedford, whoſe fondneſs for him ſcarcely knew any bounds. He was indulged to follow every humour and gratify every wiſh. Such a ſituation would have corrupted and perverted a common mind, but here it was not on a common mind that it had to operate. The fitteſt ſeminary for preparing a youth for the engagements and contentions of active life in a free country is a public ſchool, wherein the homage paid by the open and undiſguiſed minds which there give the tone of opinion and ſentiment, to talents and acquirements, inculcates the ſuperiority of perſonal qualities to adventicious circumſtances, corrects the conſequences of domeſtic partialities, and teaches wealth and rank that they alone will not command to the poſſeſſor the ſubmiſſion of any but his immediate dependents. The young Duke was ſent to Weſtminſter School, but before he had time to reap any material benefit from the leſſons of either maſters or ſcholars, he was ſuddenly taken away on ſome diſguſt, from the exceſs of a fondneſs unfortunately conceived by the Ducheſs Dowager *, and committed to the care of a private tutor. This return from a ſcene of manly emulation, liberal equality, and generous conteſt to a ſcene of mere patronage and dependencies, was not favourable to intellectual or moral improvement. Many minds, chiefly ſurrounded by idolizing relations indulging and careſſing, by aſſiduous dependents, and ſervants worſhipping from the expectations of intereſt, would have conſidered themſelves as the ſole objects of regard, would have been ſelfiſh, imperious, and inſolent; but the Duke of Bedford had an original ſtrength of underſtanding, and firm recollection of affection, which ſuch a concurrence of ſeductive temptations could not ſpoil. Under a judicious tutor he made very great progreſs in literary attainments. When he went to the Univerſity, not having paſſed thither from a public ſchool, his proficiency was not known, and his character was to form; but he made a name for himſelf there, by his application and progreſs; and gained the eſteem both of his fellow ſtudents, and of all thoſe who had the ſuperintendance of their conduct. Previous to the entrance of his Grace into life, a ſingular method is ſaid to have been taken to ſecure him againſt the practices of the knaves of all ranks who prey on unwary youths of fortune. He was placed, according to common fame, under the guardianſhip and tuition of a Nobleman, advanced in years, and well known for his knowledge of the world, and his acquaintance with the wiles of gamblers. It is ſcarcely poſſible to deviſe a more dangerous expedient for ſuch a caſe; but the Duke of Bedford eſcaped unhurt by the folly of the experiment, if it was really made; it being acknowledged that play had no other hold on his mind than that of an amuſement kept within its due bounds.

When his Grace went on his tour of Europe, a circumſtance occurred as ſingular in its place as the above. He was accompanied by a lady, who was certainly a woman of cultivated talents and amiable manners, but who, in other reſpects, ſcarcely ſeemed to be a fit companion for a young man actually travelling for improvement. But it ought to be ſtated, as a fact equally honourable to the lady and his Grace, that he rather derived benefit than injury from this extraordinary appendage of his travels.

* The writer recollects to have heard that the noble pupil having been included in a neceſſary exerciſe of correction, her Grace, on hearing of the matter, took him away from ſchool; but whether this is the real truth he cannot vouch.

After the Duke of Bedford returned from his tour, thoſe who had calculated only on the diſadvantages of his earlieſt years, and to whom no opportunity had ariſen to obſerve the characteriſtic qualities of his mind, were ſurprized to ſee his power in the gradual developement. His Grace, as he became more and more known, was regarded firſt with reſpect, and afterwards with admiration.

In exhibiting the outlines of the Duke's political conduct, the writer of this article will avoid all party diſcuſſions as matters of debate, and will confine himſelf to mere ſtatement of facts. On ſubject of party contention, men of the higheſt abilities and moſt unqueſtionable integrity, entertained different opinions and ſentiments, and perhaps there never were queſtions on which the opinions of wiſe and good men might more eſſentially diſagree, according to the medium through which they viewed objects, than thoſe which have agitated the world ſince the object of our memoirs ent red into public life. Uncandid, partial, and contracted would the biographer or the hiſtorian be, who ſhould eſtimate intellectual or moral worth by adherence or oppoſition to a ſyſtem of meaſures, or a ſet of men, who would attach praiſe or blame reſpectively or reciprocally to the ſupporter of Mr. Pitt or Mr. Fox, to the approver or diſapprover of the war carried on with the French Republic. Among the votaries of theſe two illuſtrious ſtateſmen, and their reſpective ſyſtems, there are no doubt many wiſe and good, loyal and patriotic men, and there are on both ſides, no doubt, weak and wicked men, time-ſerving ſycophants, and deſperate agitators. Every individual ſupporter of either party is to be tried by himſelf. By this rate let us examine the illuſtrious ſubject of our memoir.

His rank, fortune, and reputation rendered him a moſt deſirable acceſſion to either party. Some of his neareſt paternal connections, eſpecially the Duke of Marlborough, the Duke of Dorſet, and the Marquis of Stafford, were the ſtrenuous ſupporters of adminiſtration. Of his maternal relations Lord Keppel was dead, and the Earl of Albermarle was a minor. Thoſe who augured political conduct from the influence of kindred, expected that the Duke of Bedford would range himſelf on the ſide of Lord Stafford, with whom, ſupported by his ſiſter the Ducheſs, the Bedford intereſt had gone during the minority.

One quality his Grace very early evinced, of the higheſt importance to wiſe and virtuous conſiſtency in conduct. He was tenaciouſly firm on any purpoſe which to his own judgment appeared, on mature examination, to be right. He was not by influence to be turned aſide from the dictates of his own reflection. He thought and acted for himſelf. He choſe his political ſide according to the views which he had himſelf formed, though different from thoſe entertained by friends whom he loved and eſteemed. To a mind originally vigorous and manly he had added a large ſtore of knowledge, the precious fruits of wiſe and enlightened obſervation. With theſe qualities his Grace was in politics a man of genuine conſtitutional principles. He thoroughly underſtood and valued our Conſtitution. He juſtly appreciated his own rank in ſociety, and its connections and dependencies with every other branch. He was attached to ſound Whig doctrines. He knew and reſpected both the prerogatives of the Crown and the rights of the People. He felt that, as a Peer of England, it was his duty to ſupport and cheriſh both. In oppoſition to neither, he knew that they were to be maintained and defended according as he deemed them reſpectively menaced and endangered by the courſe of opinions and events. He was conſcious of the dignity of his ſtation; of the conſtitutional object and importance of the peerage in the ſtate. He conceived that tempering the reſpective tendencies of monarchy and democracy, it ought to mingle liberty with order. Repreſentative of the houſe of Ruſſel, ſo illuſtrious for its efforts to ſupport freedom, which deſpotic Princes were attempting to overwhelm, he deemed it an hereditary duty to maintain the rights of the people. As before the revolution a Ruſſel had been the martyr of genuine pa-

triotiſm, when it conſiſted in oppoſing an arbitrary King, after that momentous event the Ruſſels had been the ſteady ſupporters of conſtitutional Kings; of William, and the houſe of Hanover. Adhering to the principles which had eſtabliſhed the revolution, and ſet aſide a tyrannical dynaſty, the houſe of Bedford had uniformly been leading members of the Whig connection. To the principles and ſentiments which the Duke of Bedford had either derived from his anceſtors or formed and imbibed himſelf, his Grace conceived the party headed by Mr. Fox, to be more favourable than the party headed by Mr. Pitt. Under that idea and conviction he joined the party of Mr. Fox; under that idea and conviction, he adhered to the party of Mr. Fox. When the French revolution firſt agitated the minds of men, Francis, Duke of Bedford, the deſcendant of William, Lord Ruſſel, reprobating tyranny more ſyſtematically iniquitous than even that under which his immortal anceſtors had ſuffered, rejoiced at the downfal of an arbitrary monarchy, and hoped that the emancipated French might eſtabliſh ſuch a mixture of liberty and order as that anceſtor had ſought; as other members of the houſe of Bedford, both warriors and ſenators, had been ſo powerfully inſtrumental in eſtabliſhing, confirming, and ſupporting; ſuch a mixture of liberty and order as he himſelf conceived moſt conducive to the welfare of mankind, the great and general object of his purſuit. He ſought public utility, he thought a popular and limited government in France, would be more conducive to the tranquility of his own country, of France, and adjacent ſtates, than the old monarchy, which, by its intrigues and ambition, had ſo often embroiled all Europe. The French, he admitted with Mr. Fox, were in the fervor of new liberty after ſo galling a ſlavery, influenced and impelled by a glowing enthuſiaſm, which, operating on minds naturally ſo ſuſceptible and ardent, produced lamentable exceſſes. That enthuſiaſm, like every other ſtate of impaſſioned ferment, would, he apprehended, ſubſide, and there would remain a ſpirit of rational liberty; hence would ſpring a free and moderate conſtitution. So thinking and feeling, he rejoiced at the French revolution; and, upon his view of the ſubject, he is undoubtedly praiſe-worthy. Unqueſtionably very great authorities were againſt him, but very great authorities were alſo for him.

When the proceedings in France with their action upon this country became ſubjects of regular and *officially* ſenatorial diſcuſſion, here the Duke of Bedford clearly and explicitly avowed his ſentiments in the Aſſembly to which he belonged. Many belonging to the party to which he adhered, conceived this country endangered by the influx of French doctrines: they were alarmed for their privileges and the party, and conceived that the only effectual means of ſafety was the adoption of the meaſures recommended by his Majeſty's Miniſters, and deviating from the ſyſtem propoſed by Mr. Fox. So thinking and feeling they acted wiſely and prudently; but the Duke of Bedford, poſſeſſing as great a ſtake both of rank and property as any member of either party, was not alarmed, and did not think that to ſave the country was neceſſary to ſecede from Mr. Fox. In the queſtion of peace and war, the Duke of Bedford's uniform reaſoning was (as references to his ſucceſſive ſpeeches will ſufficiently evince) if you leave the French to themſelves, their enthuſiaſm will ſubſide, and they will probably ultimately form a moderate free government. If you preſs upon them by war, you will confirm and animate their enthuſiaſm, and compel them, in their own defence, to become a military republic. You will waſte your blood and treaſure, interrupt the proſperous arts cheriſhed by peace, without effecting any beneficial purpoſe by war. You will enormouſly increaſe your debts, the burdens of the people, the clogs upon honeſt induſtry during the war; and when it ſhall end, you will find no advantage to compenſate ſuch an accumulation of loſs; peace therefore is expedient: and it may be maintained merely by negotiating with the ruling powers. Under this apprehenſion the Duke of Bedford reaſoned juſtly, and counſelled patriotically, upon his perſuaſions that we might attain peace; and that we ſhould place our country in a much worſe ſituation

by war, than that which we might preſerve and improve by peace. So thinking and feeling, his Grace reaſoned and counſelled in the ſucceſſive motions, which he, at different ſtages of the war, either introduced or ſupported, concerning its continuance, conduct, or conductors; only varying in his details with the variation of circumſtances; ſeeking the welfare of his country, and endeavouring to deprecate what he deemed evils conducive to our ruin. He, in the ſenate, and in private aſſociations, exerted his influence to put an end to war, and to reſtore peace. Convinced that the treaſon laws, as they had exiſted for more than four centuries, and unleſs miſinterpreted by popular licentiouſneſs *, or monarchical tyranny †, had ſo effectually anſwered the purpoſes of criminal juſtice, could anſwer them ſtill; he oppoſed the new and conſtructive law of Lord Grenville. Equally convinced that meetings of Engliſhmen, for the purpoſe of ſtating grievances and claiming redreſs, were both agreeable to the tenor and conducive to the ſpirit of the conſtitution, and that the abuſes to which they might be liable might be corrected by the exiſting laws, he ſtrenuouſly oppoſed Mr. Pitt's new law againſt ſeditious meetings, and took a very active lead in endeavouring to prevent theſe two bills from becoming part of the Engliſh code, and, in his opinion, conſtraining the general intent of our conſtitutional ſtatutes. In theſe and various other acts, and indeed in the continued ſeries of his political conduct, the Duke of Bedford evidently SOUGHT THE PUBLIC GOOD.

To no other end could ſuch conduct, in a man ſo circumſtanced, be directed. HE wanted no private emolument from government. HE could not thwart miniſters *to be bought off by donation.* He could have no jealouſy or perſonal competition againſt men with whom he had no common object of private purſuit. Enlightened and liberal ſupporters of either party, while they impugn REASONS, will not haſtily impute unworthy *motives.* Many, however, have aſcribed oppoſition to the war to a partiality for French doctrines, and for democratic eſtabliſhments. That ſome of the lower claſſes, the more ignorant and deſperate individuals, who have reprobated the war, were influenced by ſuch conſiderations, there is great reaſon to believe; but, that its parliamentary opponents were actuated by ſuch motives—having no evidence for the hypotheſis, and, in their ſituation and character, ſo ſtrong intrinſic evidence againſt it—we never can admit. But if motives could be found that might induce even ſome ſenators to wiſh for a democratical revolution, could the Duke of Bedford be included in ſuch a conjecture? Would he readily admit the ſweeping principle of the Conſtituent Aſſembly—that all property belonged to the nation? That Bloomſbury was to be the ſcene of *domiciliary viſits?* That *walking commiſſaries* were to extend their peregrinations to Woburn? And that all the immenſe poſſeſſions of the houſe of Ruſſel were to be put into *requiſition?* The moſt luxuriant fancy cannot deviſe any motive that could induce the Duke of Bedford to counſel or act in a way which he deemed hurtful to a country in which he poſſeſſed ſo momentous an intereſt. What he did in oppoſing the commencement of the war; deprecating its continuance; cenſuring its conduct; and urging its termination;—HE DID SINCERELY AND PATRIOTICALLY, WITH A VIEW TO THE PUBLIC WELFARE. When invaſion threatened, he was among the firſt to declare his reſolution to come forward in defence of his country ‡.

The Duke of Bedford's talents were ſolid, ſtrong, and uſeful. His ſpeeches were diſtinguiſhed for nervous ſtatement of reaſoning, and fair, manly, and patriotic ſentiments.

The great object of the Duke of Bedford was to render the advantages of

* See Trials of Strafford, Laud, and Charles.

† Of Lord Ruſſel, Algernon Sidney, and of the alledged inſurgents, by Jefferies, in the Weſt. See Hume's Hiſtory, vol. VI. VII. and VIII.

‡ See his propoſed addreſs to the King, in the Houſe of Peers, March 25th. See Parliamentary Debates.

wealth and power, which he poſſeſſed, as beneficial as poſſible. The uſe he made of a magnificent fortune, was wiſely benevolent. He was the leader in every beneficial inſtitution for the encouragement of thoſe arts which moſt immediately conduce to the comfort of others. In Britain, agriculture has by no means kept pace with manufactures and with commerce. The arts which miniſter to accommodation and ornament, are much more advanced than the art which miniſters to ſubſiſtence. The ſtudy which is primary in neceſſity, is only ſecondary in practical political œconomy. In the faſhionable ſyſtems of modern politicians, national wealth is regarded as ſynonimous with national happineſs. To the increaſe of productive induſtry, and the augmentation of public revenue, both health and education are ſacrificed, without ſcruple. Children are prematurely condemned to ignoble and diſtorting toil; and that trade which produces moſt money, is held the beſt; as if there were not an eſſential difference between the wholeſome labours of the field, and the pining reſtraints of ſedentary drudgery. Agriculture not only provides food, but imparts vigour, beſtows hardineſs on the limbs, and courage on the ſoul. Its creatures are both phyſically and morally better than the creatures of relaxing manufactures. He who endeavoured to reſtore agriculture to its juſt place in Britiſh eſtimation and purſuit, deſerves highly of his country for the intention: but, here is not merely intention, but diſpoſition, guided by judgment, and ſupported by power, producing ſignal ſucceſs. In this part of his character, it will be allowed by his foes, as well as his friends, that the Duke of Bedford has ſurpaſſed every man of rank in Great Britain. Inſtead of waſting his life in diſſipation, indolence, or gaming—his Grace found, that he could be happy without ruining his health and fortune, in corrupting the morals, and injuring the property of his fellow creatures; that he could experience real pleaſures in projecting and executing experiments, for the benefit of mankind; and could walk about his farm at Woburn, and enjoy the ſatisfaction of ſeeing two or three thouſand men uſefully employed, and themſelves and their families rendered comfortable and happy, by his benevolent and wiſe efforts. It, indeed, is the higheſt eulogy of every nobleman and gentleman, to be beloved and adored in the vicinity of his country ſeat, where his genuine character is neceſſarily the beſt known. The well-cultivated farm which the Duke kept in his own management, conſiſts of about three thouſand acres, excluſively of his extenſive park. The park is nearly twenty miles in circumference, and it ſupports a great ſtock of ſheep and young cattle, beſide a large herd of fine deer. Within the park is ſituated the new farm-yard, in which is found every conveniency and modern improvement; particularly a threſhing-machine, worked by horſes or oxen, from two to ſix in number; and which is capable of threſhing and dreſſing ſeven quarters every hour, and of grinding and dreſſing the flour at the ſame time. Adjoining to this machinery is a malt-houſe; and on the outſide of the ſeveral yards, are ſtables, barns, and ſheds; with ſhops for carpenters, joiners, ſmiths, wheel-wrights, and other artificers for agricultural purpoſes. In the yard, there are two good dwelling-houſes, for the bailiffs. The implements are thoſe of the beſt conſtruction, and neweſt invention; and theſe conſiſt of all kinds of ploughs, harrows, rollers, chaff-cutting machines, and other implements of huſbandry. Among them is Mr. Salmon's chaff-cutter, which is admired for its ſimplicity, and for its capacity of being worked by either men, horſes, or water. To all improvements in implements of huſbandry, his Grace was a liberal patron. This unparalelled farm-yard is, in every reſpect, admirable, for its completeneſs, neatneſs, and utility. To detail the variety of his Grace's farming purſuits, to enumerate his plans, and to follow him in all the public meetings and ſocieties which he conducted or patronized, would alone occupy a very intereſting volume. Among other extraordinary exertions, he ſelected and improved, with judgment and perſeverance, two diſtinct ſtocks of ſheep: one of them the favourite South Down breed, that was formely peculiar to Suſſex, but which is now ſpreading faſt over every part of the kingdom; the other

the new Leiceſterſhire, or Bakewell, breed, nearly as much eſteemed as the former. Theſe two ſtocks, on his Grace's extenſive domain, are kept entirely ſeparate, under the management of different ſhepherds, and different baliffs. In cattle, his Grace advanced with rapid ſtrides towards perfection. He ſelected, with extraordinary diſcernment, the valuable breeds which are found in Herefordſhire, Devonſhire, and Suſſex: and had drawn together in thoſe counties, the moſt valuable individuals. He encouraged the uſe of oxen; and frequently attended the neighbouring fairs and markets, and examined the cattle, and ſometimes the ſhambles, to inſpect the quality of the meat. With the farmers, he was exceedingly familiar and communicative, on agricultural topics. In the practice of irrigation, his Grace was very ſucceſsful; and evinced its wonderful effects, upon ſeveral hundred acres of land. The incloſure of common fields afforded him the opportunity of bringing into a high ſtate of cultivation, ſome thouſand acres of land, which would, otherwiſe, have been for ever uſeleſs.

Thus in his various purſuits we ſee the obſervations of Mr. Fox, that the Duke of Bedford's purpoſe was public utility, clearly proved, and fully illuſtrated. As his end was the happineſs of others, his wiſdom and power enabled him effectually to promote the purpoſes of his goodneſs. But the efforts of benevolence abounding in means, and directed with judgment and ſkill to an extenſive range of valuable objects, do not die with the actor. Through the wider operations of his plans, and the ſtill wider influence of his example, immediately prompting or more diſtinctly ſuggeſting agricultural improvements; among many praiſes that will in future ages diſtinguiſh that illuſtrious Nobleman, the moſt ſignal will be, that through him the means of ſuſtenance and accommodation to man are moſt extenſively increaſed, that in his leſſons and ſyſtems effectual and permanent proviſion is made for their further multiplication; through him human beings, as far as the ſphere of his power extended, and his example and influence extended or may extend, will live more comfortable and happily; and with their comforts their numbers will increaſe.

If fame ſo loudly celebrates conquering Generals, who have extended the dominion of the ſword, a more ſolid and real glory belongs to the conquering Farmer, who has beyond all former limits extended the dominions of the plough. If he is praiſed, the reſult of whoſe efforts have been that multitudes are dead who but for him would have been alive, how much more highly deſerving of praiſe is he, the reſult of whoſe efforts has been that multitudes are and will be enabled to live?

Such are the glories of Francis, Duke of Bedford. Such are the arts and ſtudies by which ſo momentous an order in our Britiſh conſtitution may be diſtinguiſhed. Every ardent and wiſe friend of the Britiſh ariſtocracy muſt concur in wiſhing that its noble members, while ſeriouſly performing the political duties of their rank and ſtation, may, according to their reſpective powers in the management of their poſſeſſions, imitate Francis, Duke of Bedford.

The private virtues of this illuſtrious perſonage, ſpringing from the ſame principle, the deſire of doing good and conferring happineſs, joined with wiſdom to diſcriminate and power to act, rendered him the object of affection and eſteem among his relations, friends and connections of every rank. Filial duty, deprived of both his parents before he was three years old, he never had an opportunity of exerciſing; but the love due to his parents he beſtowed on his brothers, to whom he was at once the brother and the parent,

Notus in fratres animo paterno,

And as he loved them with an ardent affection, he had the comfort to find that the diſcriminating penetration of his judgment ſanctioned the impulſe of the feelings of nature. They reſembled himſelf in diſpoſitions, virtues, and purſuits.

His ſucceſſor is not merely the heir of his eſtates, but of his ſtudies and character. As a friend he was ſelect in his choice, ſtrong in affection, and

undeviating in conſtancy. His virtues were neither the feeble and deſultory effuſions of diſpoſition without diſcernment, nor the cold and inanimate dictates of underſtanding without affections. They reſulted from the ſteady co-operation of a benignant heart, with a ſtrong, comprehenſive, and diſcriminating head.

In the lower virtues, actuated by the ſame ſprings and guided by the ſame rules, his Grace was ſtriking and exemplary. His hoſpitality was liberal, elegant, and magnificent, though its exertion, like every other part of his conduct, was diſcriminating. Party politics did not influence either its admiſſions or excluſions. At his table, you met with gentlemen and men of merit, of all parties; but with none elſe of any. The manners of this Nobleman were at once ſimple and thoroughly poliſhed, unaſſuming and dignified. Nature, which, in her favorite ſons, often diſregards external appearances, had beſtowed on him, in addition to her other gifts, a figure tall and graceful; features uncommonly elegant; with a countenance ſtrongly indicating the united benevolence, firmneſs, and intelligence of his mind.

Theſe ſtatements and remarks are written by one totally unconnected with their illuſtrious ſubject, or any of his friends; one who never ſaw him but in the ſtreet, or the houſe of peers; one who—conceiving high praiſe due to the intentions of his Grace, in his political conduct; yet, in many reſpects, differs from his opinions; but who, having imbibed the higheſt admiration for his virtues, efforts, and character—offers his ſmall tribute to departed intellectual and mental excellence, productive of ſo momentouſly beneficial effects.

MR. DUCKET.

THE merits of the ſoldier and the ſtateſman, of the philoſopher and the poet, are remembered by a grateful nation, and the lettered marble preſerves their fame.

Equal juſtice, however, has been ſeldom done to the laborious and ſucceſsful agriculturiſt. No branch of biography has been ſo little cultivated, or preſents us with ſuch ſcanty materials. With peculiar propriety might a page of your Magazine be devoted to this neglected ſubject.

Too frequently, the active and laborious huſbandman is ſuffered to ſteal unnoticed through life; or to ſink neglected into the grave. The memory of his name, if preſerved at all, is confined to the narrow circle of his occupations; the neighbouring village; or the contiguous farms. A backwardneſs to appear in print, or to attract the attention of the public, ſometimes deprives the world of the knowledge of thoſe experiments and practices in huſbandry, which might greatly tend to accelerate the improvement of Britiſh agriculture.

I was led to theſe reflections, by reading, lately, an account of the death of Mr. Ducket, of Eſher, in Surrey—a venerable and truly reſpectable farmer. His reſources lay within himſelf; and, by the exertions of a ſuperior genius, he deſigned and executed an enlightened ſyſtem of agriculture.

The incidents in the life of a farmer, paſſed in the ſhade of retirement, can be but few; and of theſe, ſuch only can be deemed intereſting which belong to his profeſſional labours.

No ſooner had the Board of Agriculture extended its views to honorary premiums, than they immediately fixed on Mr. Ducket as the moſt deſerving of reward; and, as he was the firſt individual thus diſtinguiſhed, they explained, at length, the motives which influenced their choice: theſe conſtitute no mean eulogium on his profeſſional labours. To theſe, the late Marquis of Rockingham, long ago gave his teſtimony, by preſenting Mr. Ducket with a piece of plate. It becomes, then, intereſting to know, what improvements in agriculture were thus honoured and diſtinguiſhed.

To the ingenuity of Mr. Ducket, we may aſcribe the improvement and uſe of the following implements:——A Trench Plough; a Double-ſhare

Plough; and a Drill Plough which ſtruck five furrows, into which the grain was afterwards ſown broad-caſt. The ſeed taking the direction of the furrows, left the intermediate ſpaces clearer for the uſe of the hoe, than could have been obtained from any other method of ſowing broad-caſt. It was previouſly requiſite that the ground ſhould be well pulveriſed. The ſoil at Eſher, it muſt be remembered, conſiſted chiefly of light land. His Trench Plough he only uſed to every ſecond or third crop. The intermediate ploughings were light, with the double-furrow plough. By the Trench plough, he not only cleaned the land, by burying the weeds, but brought up freſh earth; which he conſidered as advantageous to the growth of corn.

Mr. Ducket was not tied to any particular courſe of crops. He recommended it to every farmer, to examine what ſort of grain would beſt repay his labours; and to vary his crops according to the demand. He was, however, particular in getting green, or feeding crops, between thoſe of grain; and to renew his ſoil by alternate deep and ſhallow ploughings.

Fallows on clayey ſoils, he allowed to be good huſbandry; but would reject the practice in light ſoils, for which his own inſtruments were particularly adapted. On land of this deſcription, he preferred feeding; and he conſidered the ſoil as receiving great benefit, by being rendered more firm and compact from the tread of the cattle that conſumed its produce.

He uſed his Trench plough to deſtroy couch-graſs, by keeping the land conſtantly worked and harrowed, by a rapid ſucceſſion of rye, tares, and turnips.

In drilling with his own plough, he uſed a quantity of grain larger than uſual; two buſhels and a half of wheat; three, and even four, buſhels of barley, when late ſown.

He kept above 300 ewes, for ſuckling houſe-lambs; which he carried to ſuch perfection, as to reach the price of 4l. per head.

He had a threſhing machine, which, with the labour of four horſes, and five men and boys, would threſh fourteen ſacks of wheat in eight hours.

A more full and particular account of Mr. Ducket's huſbandry is given in Mr. Young's Annals of Agriculture (vol. 23), from which many of the above particulars are taken; as, though I once viſited his farm at Eſher, I was ſo unfortunate as not to meet with him at home. His ſon was, for ſome time, bailiff to Mr. Byng (member for Middleſex), at Hadley; where he introduced his father's implements and huſbandry: though he would prudently lay them aſide, when the ſeaſons, as ſometimes happened on ſtrong land, were unfriendly to their uſe.

White Webb Farm, Enfield Chace,
March 18, 1802.

A. WILKINSON, M. D.

HISTORY.

National Transactions.

FROM INDIA, we have received, within theſe laſt five weeks, but a few particulars of new information.—The Britiſh Fleet, in the Indian Seas, had not, laſt Summer, any opportunity to combat a fleet of the enemy. But, it gave adequate protection to the coaſts, the harbours, and the mercantile ſhipping: and ſeveral gallant actions were atchieved by ſingle ſhips belonging to it, in rencounters with veſſels of war, manned with Frenchmen or Spaniards. On the 19th of Auguſt, Captain Adam, in La Sybille, captured, in Mahe Road, under diſadvantages which could not have been, without the greateſt gallantry, overcome,—the French national frigate, Chiffonne, which had, on her paſſage from France, with exiles, to Seychelles, made prizes of

no fewer than three veſſels Portugueſe and Engliſh.—On the 31ſt of July, the Polly, in which were mounted eight guns 12-pounders, was much ſhattered in an action of four hours, with a Spaniſh cruizer, off the iſle of Banguey. The Spaniſh cruizer eſcaped. The Polly arrived, with difficulty at Amboyna, on the 3d of September.

The crop of rice was, laſt year, plentiful, in India. And, a number of ſhips were, in September, laden with cargoes of that grain, for exportation to Europe.

The inſtitution of an Academy at Calcutta, has either, already been, or is about to be, relinquiſhed.

Some of the Indian landholders are ſtill in inſurrection. But, their efforts, though troubleſome, are far from formidable. And, a ſufficient military force has been ſent, to reduce them to ſubmiſſion.

The Suffolk, the Betſey, the Lord Thurlow, the Georgiana Packet, ſhips from India, lately arrived, with theſe and other news, in Engliſh ports.

The news of the Preliminaries of Peace between Britain and France, was, on the 4th of January laſt, made known at the CAPE OF GOOD HOPE. The Eurydice, Captain Bathurſt, conveyed it, by a paſſage of only 48 days, from England. It was received with joy by the greater part of the inhabitants. Admiral Sir Roger Curtis, next morning, diſpatched a veſſel, to communicate the intelligence at the Iſle of France.

The Fleet at the Cape conſiſts of the Lancaſter, the Jupiter, the Diomede, the Imperieuſe, the Hindooſtan, and the Euphroſyne, ſhips of war. They will continue on that ſtation, till the ſettlement ſhall be, after the concluſion of the Definitive Treaty, ſurrendered to the Dutch.

On Chriſtmas Day, Admirals Lord Keith and Sir Richard Bickerton were at MALTA, with a fleet of ſeven and thirty ſhips. Mr. Cameron remained Civil Governor of that Iſle. The troops were under the command of General Fox. The greater part of the Britiſh forces lately in Egypt, had arrived at Malta. General Hutchinſon was there inveſted with the inſignia of the order of the Bath, on the 23d of December; and was about to proceed, for the recovery of his health, to Meſſina. The arival of 1500 or 2000, the laſt of the Britiſh troops in Egypt, which were not to go to India, was daily expected.

On the Continent of ITALY, the New Government of the Italian Republic, of which Bonaparte lately accepted the Preſidency, has entered upon the diſcharge of its functions. On the 14th of February, Murat, the French General, announced to the oſtenſible Magiſtrates at Milan; that the Proviſionary Government was at an end; that the New Conſtitution was, from that very day, to take effect; that theſe Magiſtrates were then to begin the exerciſe of their official powers and duties. The Vice-Preſident's name is Melzi. In the abſence of Bonaparte, he remains oſtenſibly at the head of the Government. But, the French army are, in fact, the maſters of the State. The Miniſters and inferior officers of the proviſionary government, are, by a ſummary decree under the authority of Melzi, confirmed, for the preſent, in their former appointments.

The new King of *Etruria* has happily recovered from a temporary illneſs; dedicates much of his time to the affairs of his kingdom; is yet in the good graces of Moreau de St. Mery, the French ambaſſador; and is preparing to fix his reſidence at Leghorn, in which a palace has been made ready for his reception.

The Rulers of *Genoa* boaſt, that the Ligurian Republic is now acknowledged by moſt of the Great Powers of Europe.

It has been ſaid that the late *Grand Duke* of Tuſcany is about to fix his reſidence ſomewhere in the neighbourhood of *Venice*.

The Queen of Naples is expected ſoon to return from Germany, to Palermo.

FRANCE ſtill deeply fixes the attention of the reſt of the world.—*Bonaparte* is at the head of the Government; and his authority ſeems to be ſtill as great and

as vigorouſly exerciſed, as at the firſt. Thoſe of the former conſpirators againſt his perſon who eſcaped the puniſhment of death, were ſent, in exile, to Seychelles. General *Laſne*, once his familliar friend, having lately dared to addreſs him with rough *ſanſculottiſh* freedom of ſpeech, was ſoon diſmiſſed from the command of the Conſular Guard, and has been ſince ſent, in a ſort of honourable exile, on the embaſſy to the Court of Portugal. *Laharpe*, a literary veteran of eminent talents and induſtry, with ſome ladies, accuſed with him, of plotting for the reſtoration of the monarchy, have been, with an authority imperious and arbitrary, as that of Louis the Fourteenth toward his courtiers, ſent, in ruſticating baniſhment, from the capital. The nation, in general, begin to view with indignant envy and impatience, the elevation of the whole family of the Bonaparte's, the luxury which they enjoy, the regal ſtate which they affect, the jealouſy with which they watch to depreſs all ambition that will not make itſelf humbly ſubſervient to theirs. Even the Lady of the Firſt Conſul, keeps her Court with all the ſtate of Majeſty; and the Ladies of the Foreign Ambaſſadors at Paris, have been preſented to her, with the ſame ceremony, as if it had been in the drawing-room of a Queen. The Firſt Conſul himſelf is accuſed as having, not the generous ſpirit of an Alexander, or a Cromwell, but rather ſuch a feebly ſuſpicious mind, as formed the whiſpering tower, the *ear*, of Dionyſius, or a ſoul that may perhaps be gradually betrayed to all the treacherous Italian cruelties of the Borgia's.—Such is the conduct of the Firſt Conſul and his family; ſuch are the diſcontents with which it is viewed. But, his condition is ſurrounded with peculiar difficulties. It is difficult not to be betrayed, in it, to overweening pride: it is difficult with powers and a ſucceſs ſuch as his, to content one's ſelf with a moderation which ſhall put envy to ſilence. The neceſſities of ſelf-defence demand precautions the urgency for which, a ſtranger cannot eſtimate. Who ſhall affirm, that he would, in Bonaparte's ſituation act better than does Bonaparte? But, it is the laſt act that crowns the whole.

It is not to be denied, that the French have been ſucceſsful ſo far as to give a temporary political importance to France, more conſiderable than it had in the happieſt æra in the reign of Louis the Fourteenth, enjoyed. Paris is filled with ſuppliant envoys, plenipotentiaries, and ambaſſadors. The ambaſſadors at foreign Courts—that of Britain alone excepted—and the French Generals ſtill commanding in conquered countries from which their forces have not been yet withdrawn—exerciſe a lofty imperious authority ſimilar to that which was exerciſed by the Roman *Proconſuls* and *Legati* of old, among their allies.—The Hereditary Prince of Orange, the eldeſt ſon of the Stadtholder, is now at Paris; and it is inferred from his frequent interviews with the Conſular Miniſters and the foreign ambaſſadors, that the negociations to obtain compenſation for the loſſes of his family, are now advancing to a happy iſſue.

At *Amiens*, the negociations for a Definitive Treaty of Peace with Britain, are ſtill prolonged. There was lately an alarm leſt they ſhould be interrupted by a ſudden renewal of the war. That alarm has ceaſed: and the public are in expectation, that the concluſion and ratificaton of the Treaty will be very ſoon announced. So many diſcuſſions are unavoidably apt to ariſe, and ſo many jarring intereſts are to be reconciled, in ſettling the ultimate conditions of ſuch a treaty, that the lengthening out of the negociations needs excite no ſurprize. However much the Firſt Conſul of France may demand; he will ſcarcely be able to ſatisfy the wiſhes of all the ſoldiers and officers in the French Army. Unleſs he provide, in the Peace for his own ſafety, the moment of its ratification may perhaps give the firſt ſignal for his ruin. His perſonal character and the neceſſities of his ſituation, equally urge him to ſtickle upon every point, for the moſt advantageous conditions which may, poſſibly, be obtained.

The following ſtatement exhibits the numbers of the French troops, now under diſcipline, and receiving pay.

	Men.
Conſular Guard	6,000
Cavalry and Dragoons	22,000
Chaſſeurs and Huſſars	30,000
Artillery, Miners, Maſons, and Pioneers	19,000
Infantry of the Line	250,000
Light Infantry	60,000
Total	387,000

It ſeems to be intended, that theſe troops ſhall compoſe the Peace-eſtabliſhment of the army of France.

The Tribunate, the Legiſlative Council, the Conſervative Senate, the Conſuls and the Conſular Miniſters ſtill form the Legiſlature and Adminiſtration. Juſtice is adminiſtered under the laſt new Conſtitution, the Edicts of the Conſuls, the new laws on which thoſe edicts are occaſionally founded, and the old common and edict-law of the country ſo far as this has not been, by the Revolution, aboliſhed.

Robberies, are ſtill, notwitſtanding the vigilance exerted to ſuppreſs them, unuſually frequent throughout moſt of the departments of France.

The inhabitants of SWITZERLAND are ſtill diſcontented and mutually at variance on account of the changes in the political Conſtitution and Government to which they are obliged to ſubmit. The majority of the Senate have adopted a new Conſtitution which, among its other proviſions, ſub-divides the whole Republic into one and twenty cantons. That Conſtitution, approved by ſome of the citizens, is, however, by many more, diſapproved. The preſence of French troops can, alone, reſtrain the general tendency to inſurrection againſt the preſent Government. General Guettard is at Zurich, with two French battalions.

The DUTCH REPUBLIC is, as a political body, now, comparatively unimportant. Its Legiſlature has agreed to ſupply a part of the expences of the Government during the preſent year, by a loan to which every perſon contributes at pleaſure, of 30 millions. The people and rulers begin to doubt whether they ſhall be gainers by having the charge and expence of the Government of the Cape of Good Hope, while it is to remain a port in all other reſpects as free to the French and the Britiſh, as to themſelves. They demand compenſation for the loſs of Ceylon, and for thoſe of their Eaſt India ſhips which were ſeized by the Britiſh, at an early period of the war. Mr. Pennick Schimmel is now their Ambaſſador to ſolicit their claims at Amiens. The following is an official ſtatement, recently printed, of the neceſſary expences of the Dutch Government, during the current year:

	Florins.
General Government	2,323,280
Embaſſies, &c.	682,515
Miniſter for Foreign Affairs	51,900
Preſents to the Powers of Barbary	130,000
Navy	6,592,948
Collection, &c. of the Revenue	32,341,149
Dykes and Police	20,069,132
Army	12,341,189
Domeſtic Miniſter, &c.	446,500
Eaſt Indies	5,153,813
America	205,004
Levant	16,385
France	3,000,000
Some other domeſtic expences of which the ſums are not ſpecified.	
Total in Florins	65,992,569

Much remains yet to be done, in order to a final ſettlement of the diſorders occaſioned by the war in GERMANY.—The King of *Pruſſia* watches with jealouſy, over the pretenſions of the Houſe of Hanover; and betrays extreme ſolicitude to enlarge his power and his dominions by the acquiſition of the indemnities for his ſhare of the German territories ceded to France. The Diet at *Ratiſbon* ſtill awaits, in inactivity, final inſtructions to form a ſcheme by which the indemnities may be diſtributed. The late Grand Duke of Tuſcany, the Prince of Orange, and others of the Princes whom the war has bereft of their dominions, expect with great impatience, the iſſue of the preſent negociations at Amiens. Prince Charles of Auſtria is again in ill-health. The Emperor has appointed an emigrant French officer to the command of his navy in the Adriatic. In conſequence of the diſorders of rebellion and civil war which ſtill prevail in the Weſtern parts of European Turkey, a ſtrong body of Auſtrian troops has been poſted to protect the frontiers of Hungary. Hopes are ſtill entertained in Hanover; that the future government of that Duchy and its dependencies may be permanently conſigned to him whom they lately knew and loved as Prince Adolphus of England.

In winter, our means of receiving information from the countries on the Baltic, are diminiſhed. Yet, we have had news lately from RUSSIA, which repreſent the Government of the Emperor Alexander, as being ſtill highly vigilant, humane, and economical. He has recently examined the ſyſtem of the expenditure upon his houſhold-eſtabliſhment. The chancery or treaſury of the houſehold, is, in conſequence, by an Imperial Edict, aboliſhed. Of thoſe churches or chapels in which religious ſervice was performed for the accommodation of the Court, all but four, have been transferred for their ſupport, from the department of the expenditure of the Imperial houſehold, to that of the revenue appropriated, under the direction of the Eccleſiaſtical Synod, to the general uſes of the national religion. The expence upon the marble quarries at Tiflis and Ruſkol, is, as ſoon as may be poſſible, to ceaſe. The whole annual expenditure of the Imperial houſehold, and of the houſeholds of the Empreſs Dowager and the younger brothers and ſiſters of the Emperor, who have not yet obtained other eſtabliſhments, is fixed at three millions and a half of roubles.

In SWEDEN, the Nobility have taken up ſuch a paſſion for renouncing their titles, honours, and privileges as Nobles, and for aſſuming the character of ſimple Plebeians, that the King has been induced to iſſue an edict prohibiting, under pain of perpetual baniſhment, all future inſtances of ſuch voluntary ſelf-degradation.

The BRITISH PARLIAMENT has continued its deliberations, during the month of March.—The bill, lately brought into the Houſe of Commons for the purpoſe of extending the proviſions of the Bankrupt Law to the caſes of other debtors beſide merchants and tradeſmen is in its progreſs through the accuſtomed forms of diſcuſſion. The duty upon cinnamon, has, in conſequence of our acquiſition of the Iſland of Ceylon, been reduced, by a new act, from 3s. to 1s. and 6d. a lib.—The Eaſt India Company have obtained an act to authoriſe them to transfer their eſtabliſhment at Bencoolen, from that place to Madras.—An act has paſſed, to remove certain countervailing duties upon Anglo-American imports, which were originally impoſed to counterbalance duties formerly exacted by the Anglo-American States upon exports from Great Britain but now no longer levied in the American ports. It was, at the ſecond reading, ſtrenuouſly oppoſed by General Gaſcoigne and Dr. Lawrence; but ſupported with ability and zeal, by Mr. Windham, Lord Hawkeſbury, and the Chancellor of the Exchequer.—Mr. Robſon, oppoſing the ſupplies, lately affirmed, that bills on the offices of Government, though preſented when due, were not regularly paid. The aſſertion was heard with ſurpriſe and indignation by thoſe miniſterial ſervants of Government who were then in the Houſe. Enquiry confirmed its truth. And it is now

known, that the ſubordinate offices, receiving the money which they are to pay, from the Treaſury, only when it is ſpecifically wanted, are often, for the moment, without the means of diſcharging bills which may be preſented as due.—An Act has paſſed, to authoriſe a Loan of one million ſterling to be raiſed upon bills payable at the Exchequer, for the payment of which means are to be ſupplied by Parliament.—Supplies have been granted for the ſupport of the military and naval forces of the Empire, for the ſpace of two months from the 25th of March.—A Committee was, on a motion by the Chancellor of the Exchequer, appointed, on the 15th of March, to enquire into the preſent ſtate of the Corn Trade between Britain and Ireland: and it is now engaged in the proſecution of the enquiries confided to it.—The ſupplies for the expence of the Government of Ireland, have been moved for, and voted.—Enquiries concerning the progreſs of the Treaty at Amiens have been made by the Earl of Carliſle in the Houſe of Lords, and by Mr. Elliot in the Houſe of Commons, in a tone of patriotic anxiety, and with an energy of eloquence which, though they could not perſuade miniſters to declare the ſecrets of the negociation, powerfully excited the attention of the Houſes of Parliament, and afterwards of the whole nation.—The claims of the Prince of Wales, on account of the revenue of the Duchy of Cornwall, applied, during his minority, in aid of the Civil Liſt, are to come under ſpecial diſcuſſion in the Houſe of Commons, upon a motion of which notice has been given by his Solicitor Mr. Manners Sutton.—A Bill has been brought into the Houſe of Commons, of which the object is, to permit the manufacture of ſtarch, free of any duty, from potatoes and rice.—Petitions have been preſented and favourably received, from Dr. Jenner, praying for a national reward for his diſcovery of the benefits and the proceſs of inoculation with the matter of the Cow-Pox, and from Dr. Carmichael Smith requeſting a ſimilar reward for his diſcovery of the uſe of nitrous acid in ſtopping and diſſipating peſtilential infection.—The Committee upon the Civil Liſt has reported, that the total debt upon it, which is now to be paid by an extraordinary ſupply from Parliament, amounts to the ſum of 895,968l. 6s. 2d. ſterling.—The Committee on the petition of the Bookſellers for a reduction of the duties upon paper, has preſented its report to the Houſe: but the Commons have not decided upon the reaſonableneſs of granting the prayer of that petition. The Houſe of Lords have rejected the bills of divorce which were brought before them, in favour of Mr. Hoare and of Mr. Crewe, with a rigour of moral deciſion greatly honourable to the character of a national Nobility, as indicating the higheſt ſanctity and purity of religious and moral ſentiments. In the detail of that which is diſtinguiſhed as the private buſineſs of the two Houſes of Parliament, we have particularly remarked ſeveral bills for the conſtruction of new bridges and high roads in Wales, which indicate that part of theſe United Kingdoms, to be in a rapid progreſs of œcumenical improvement.

The *Navy* remains ſtill nearly in the ſame force as during the war. Orders were lately iſſued to victual the ſhips in the harbours for ſix months: a fleet was ready to ſail: Admiral Lord Nelſon was ſaid to be about to take the command in the Weſt Indies: and it was ſurmiſed, upon theſe and other appearances, that naval hoſtilities againſt France and its allies were about to be renewed. But, the energy and haſte of thoſe naval preparations have already begun to be relaxed: and it is now ſuppoſed, that our generous ſeamen will not be again immediately called to riſk their lives againſt foes whom they have ſo often vanquiſhed. Many of them would not have been ſorry to go again to ſea under fighting orders. So many ſhips of war, and merchant-ſhips of the Dutch, the French, and the Spaniards, are now at ſea; and ſuch is the well-founded confidence of our Britiſh Sailors in their wonted valour and fortune; that our fleets would now ſail with exultation, as certain to ſeize and bring at once to our ports, a greater number of rich and eaſy prizes than were, for ſeveral of the laſt years of the war, expoſed to their vigilance and heroiſm.

The prize-money ariſing from the ſale of a certain part of the captures in the expedition to Holland, under Sir Ralph Abercrombie, was paid, in diſtribution, to thoſe to whom it was due, on the days between the 24th of February, and the 10th of March.

The Britiſh *Army* now conſiſts of 41 battalions of cavalry, 149 of infantry of the line, 44 of fencible infantry, 86 of militia, with 72 corps of invalids. Of theſe, 139 battalions are now in Great Bri ain, 50 in Irelard, 37 in the Weſt Indies, 11 at Gibraltar, and as many at Minorca and Malta.

The conduct of the preſent miniſters of the Executive Government ſtill continues to command the general confidence of the people. Their moderation was approved when the conditions of the preliminary treaty with France, and the convention with Ruſſia, Denmark, and Sweden, were made public. They have been accuſed, while the Definitive Treaty with France ha hung in ſuſpenſe, of a timidity, and a want of artifice, by which they might be bullied or deceived into the acceptance of diſhonourable terms, if not perhaps amuſed with pretences till France ſhould gain opportunity to ſtrike a deciſive blow, and then again obliged to meet the war when their means of attack or defence ſhould be diſſipated or damaged. But, the deciſion and promptitude with which they ſeemed lately to prepare for the renewal of hoſtilities at ſea, have ſufficiently vindicated their moderation. Enough was probably done to evince to the French Rulers, that they had not now to deal with men whoſe ſpirit might be overawed, or their vigilance ſoothed to ſleep. It is believed, that the alarm of thoſe preparations has contribated to make the French Rulers abate ſomewhat from the obſtinacy with which they inſiſted on ſome terms in the treaty, to which it was impoſſible for the Britiſh Government to agree. The ſpeedy concluſion and ratification of that treaty are, hence, expected to follow

The French WEST INDIA ISLES are in a ſtate which cannot but engage our anxious attention. LA CROSSE, ſent out to aſſume the government of *Guadaloupe*, was not hindered to enter the iſle, to begin to act with the authority of his office, even to ſeize the perſons of ſome of thoſe whoſe diſobedience and oppoſition he chiefly dreaded. He ſuppoſed, that he had, by timely vigilance, anticipated and defeated conſpiracy; that he had by the exile of thoſe whom he viewed with ſuſpicion, entirely delivered the iſland from all remains of the ſpirit of inſurrection and diſcontent. But, the mulattoes and negroes learned, that their freedom was again to be ſuppreſſed by a fleet and army which would ſoon arrive from France. They would not again ſink into ſervitude, without a ſtruggle. They anticipated the arrival of the force by which they were to be overpowered; and *La Croſe* was driven from his government. *Pelagie*, a mulatto, was entruſted by the inſurgents with the chief command in the Iſle. He retains his power. And, the French will not be able to reſtore, in it, the authority of the mother-country, otherwiſe than by force of arms, and without doubt, a bloody and deſperate conteſt.

The Mulattoes and Negroes who, in the ſtate of free-men, poſſeſſed the government of *St. Domingo*, were alarmed for their liberty, by the ſame news of the intentions of the mother-country, which had executed the rebellion in Guadaloupe. *Touſſaint L'Ouverture* was regarded by ſome, as a man likely to ſacrifice the intereſts of his fellows, to the oppreſſion of the rulers of France. A conſpiracy, an inſurrection threatened his life and authority. He prevailed, with ſlaughter; and inflicted, afterwards, exemplary puniſhment on ſuch of the ſurviving inſurgents as fell into his hands. Upon any terms but the ſacrifice of the liberties of the blacks and people of colour, he would probably have rejoiced to make his peace with France. But, a fleet and army were ſent out with orders which left to Touſſaint, no choice between open reſiſtance and unconditional ſubmiſſion. A letter of general and equivocal promiſes from the Firſt Conſul to Touſſaint himſelf, and a proclamation to the inhabitants of St. Domingo, in which flatteries were mixed with menaces, announced the intentions of Bonaparte in a manner which

ſeems to have provoked the keen indignation of the mulatto chief and his aſſociates. General Chriſtophe, in the name of Touſſaint, refuſed to permit Le-Clerc, the commander of the expedition from France, to land his troops without delay or reſiſtance. Le-Clerc treated the refuſal as an act of rebellion; and prepared inſtantly to land and chaſtiſe the rebels. The Mulattoes ſet fire to *CapeTown* in the bay of Mancenille; maſſacred a part of the white inhabitants; and retired. Le Clerc, then, ſent ſome diviſions of his troops on ſhore; and prepared to purſue the fugitives. Touſſaint, with his forces and adherents, retire, for the preſent, to the more inacceſſible parts of the iſle; and will probably endeavour to conquer the French chiefly by leading them into local difficulties, and by awaiting the ſeaſon when they ſhall be enfeebled by the epidemical diſeaſes prevalent in that climate. The ſtruggle may be prolonged: and the iſſue is, to a certain degree, doubtful. Le Clerc is the General of the land forces. Admiral Villaret commands the fleet.

Inſurrection has been lately threatened by the negroes in the Iſland of *Tobago*. And even in the BRITISH WEST INDIA ISLES new danger and alarm from the blacks and people have ariſen in conſequence of the new ſtruggles which commences in thoſe which belong to France.

Commercial Affairs.

TRADE has not yet aſſumed due activity in thoſe channels in which it naturally takes its courſe in time of peace. But, thoſe of its operations and adventures have been, in great part, diſcontinued, which had their dependence on the conſumption and the different relations of the war. Commercial buſineſs hangs, in a ſort of ſuſpenſe, while the Definitive Treaty with France is delayed. No tranſactions or engagements in trade, can be, in the mean time, prudently entered into, except thoſe which muſt, at all times, go on, to ſupply the indiſpenſible neceſſaries of life. And yet, ſuch is the boldneſs, and ſuch the reſtleſs activity of commercial induſtry, that, even now, various undertakings are commenced, in a confidence, that the negotiations muſt ſoon be agreeably terminated; and that their cloſe muſt fulfil all the warmeſt wiſhes of the merchant.

Agricultural induſtry, the firſt ſpring of mercantile enterpriſe has renewed its labours under many advantages. And the importation of graſs-ſeeds and of the ſeeds of garden-plants, the manufacture of implements of iron, the importation and the joiner manufacture of timber, with the trade in all thoſe other commodities which are particularly wanted for the uſe of the works of huſbandry in Spring and Summer, receive from the recurring demand of this ſeaſon of the year, conſiderable new encouragement. Graſs-ſeeds have not, in the courſe of laſt month, greatly riſen in price, becauſe there was, previouſly an abundant ſupply in the country, and becauſe the Dutch are ready to pour very large quantities of ſome of thoſe which are the moſt commonly ſown, into the Engliſh market.

Such is the demand for iron for the various implements of Britiſh induſtry, for uſes in houſes, canals, bridges, mills, carriages, and all our domeſtic works of peace, for a thouſand elegant manufactures to be exported, that its price does not fall in the market, notwithſtanding the ceſſation of the war. Britiſh pig-iron is now ſold, in London, at from 5l. 10s. to 9l. a ton. Two bridges of caſt iron which are about to be erected, under the authority of acts of Parliament, over the ferries of Conway and Bangor will, alone, coſt the ſum of 500,000l. ſterling. Theſe bridges of caſt iron are made only in Britain. They were exported in pieces, for erection in other countries. They are ſtill more and more preferred by us, at home, to conſtructions in maſonry.

The momentary renewal of the preparations for naval war, at a time, too, when the Baltic was ſhut up by the uſual winter ſtorms and froſts, would

have raiſed the price of naval ſtores ſuch as hemp, pitch, &c. if there had not been a very large ſupply of them. It has, however, prevented them from declining farther in price, during the month of March. But, this, together with the merchant-ſhipping demand for the ſame articles, have actually raiſed the prices of ſea-ſtore proviſions. Meſs Iriſh beef is now at from 5l. 5s. to 7l. 7s. a ton; that is 7s. a ton, dearer than it was in the end of February. Iriſh pork is at 5l. 2s. a barrel, and thus, 24s. dearer than it was, a month ſince. But theſe increaſes of price depend in part, on the natural effect of ſpring, as the ſeaſon in which merchant voyages are in the greateſt number, commenced from this country.

The goods, in general, which we derive from the Baltic begin now, to be higher in price, than they were in February laſt. The navigation to the Baltic, has been interrupted by the ſeaſon: and the ſtores which filled the warehouſes of the merchants began to be exhauſted. Flax, in particular, is, now, as high in price, as 69l. ſterling a ton. In the courſe of the year 1801, no fewer than 1,300,000 pieces of deal, were, as we are informed by an intelligent correſpondent at St. Peterſburgh, ſhipped at that port for different parts in Great Britain.

Coffee and tea are now riſing in price. Both theſe articles are likely to be, in various ways exported, in conſiderable quantity from this country in the courſe of the ſeaſon now advancing. The preſent London price of the beſt Weſt India coffee is from 5l. 5s. to 6l. 5s. a cwt. Conſiderable quantities of Weſt India coffee are re-exported from Europe, to Smyrna and Conſtantinople.

Cottons and ſugars have fallen in the courſe of March. But, in conſequence of the preſent diſturbances in the Weſt Indies, their prices, may ſoon probably, riſe.

Wheat, and peaſe are now higher in prize, than in the end of laſt month. Much rice has been recently brought to England from India. Our people become continually leſs averſe from its uſe as a common article of food. We ſhould hope, that, by this importation the farther riſe in the price of wheat may be for the preſent, prevented. It may be, chiefly on account of the demand for wheat and peaſe to be uſed as articles of naval ſtores, that their prices thus riſe. Barley, oats, rye, and malt are lower in price, than they were in the end of laſt month.

On Monday, March 22d, coals were at two guineas, a chaldron, in the river Thames. This is a riſe of from 2s. to 4s. and 6d. above what was the price of the chaldron in the end of February. But, cargoes of coals now begin to be taken on board for the Baltic; and a number of the veſſels employed in winter, to bring coals from Newcaſtle and Sunderland to London, will now go on more diſtant voyages.

Copper and tin have not lately fallen in price. Antimony is now higher in price than it was four or five weeks ſince.

The rates of inſurances on ſhips to thoſe places to which the winter-voyage was dangerous, have, of courſe, in conſequence of the return of the milder weather of ſpring, become much lower.

The exchange with Portugal is at 68¾ pence, to be given in London for the millrea to be received in Liſbon. The price of the new dollar is 5s. 8d. per oz. in London,—of ſilver in bars, 5s. 11½d. per oz.—of the gold doubloon, 3l. 18s. 6d. an oz.

Large quantities of beans, barley, and oats, were, laſt week brought into the port of London from Pruſſia, Hamburgh, and Holland. The importations of ſugar and cotton were not laſt week, ſo large, as in the week on which the month of February cloſed.

Conſiderable quantities of clothes, cabinet-work, watchmakers' work, implements of houſhold furniture, mathematical inſtruments, &c. were, in the courſe of March, ſhipped for exportation from the port of London.

A direct intercourſe has been opened between the ports of Bourdeaux and

Dublin. An Iriſh veſſel lately arrived at Dublin from Bourdeaux, with a cargo of wine, brandy, vinegar, and other French goods. This is the firſt French cargo which has been brought into that port ſince the peace, otherwiſe than in a neutral veſſel.

An Inſurance Office for protection againſt loſſes by fire, has ſubſiſted at Norwich ever ſince the year 1797. The happieſt effects have reſulted from the inſtitution to the community at large in that city and its neighbourhood, as well as to the inſuring company.

The Hudſon's Bay Company will expoſe to ſale, a quantity of coat, fine parchment, and cub beaver ſkins, at their houſe in Fenchurch-ſtreet, on Wedneſday, May 26th.

Britiſh manufactures were exported to America;—in the year 1798, to the value of 5,300,000*l.* ſterling;—in 1799, to nearly 6,7000,000*l.* ſterling;—in 1800, to the ſame ſum of 6,700,000*l.* ſterling. Our export-trade to America, is, in Britiſh manufactures only. The goods which we import from America, are chiefly unmanufactured American produce, ſuch as corn, tobacco, rice, &c. Four-fifths of the tobacco which we import from America, are re-exported. In the year ending January 5th, 1793, the number of Britiſh ſhips in the trade between this country and the Anglo-American ports, was only 193, while the American veſſels in the ſame trade, were not fewer than 313. Unleſs the Britiſh ſhip-maſters can advantageouſly maintain a competition with thoſe of America, for cheapneſs of freight, we ſhall ſoon loſe, entirely, one great branch of our carrying navigation.

The Livery of London have agreed to petition Parliament for a repeal of the act under the authority of which, the income-tax is levied.

It is reported, that a new duty is about to be impoſed on Hops. The merchants and brewers purchaſe with eagerneſs, to anticipate the impoſition of the tax. Hence, the prices riſe. Bags of Kent Hops are at 3*l.* 18*s.* each; Pockets of the ſame, at 4*l.* 10*s.* each.

Agriculture.

AGRICULTURAL REPORT FOR MARCH.

MARCH, though not free from tranſient froſts and cold blighting winds, has been, in its general courſe, of a mild, humid temperature, very favourable to vegetation, and not inconvenient to the accuſtomed agricultural labours of this part of the ſeaſon.

Some of the lower grounds of deep, wet, miry ſoil have not been, in the courſe of this month in the condition the moſt advantageous. On ſuch grounds, where the ſowing has been, in ſpite of difficulties, ſteadily proſecuted, there may have been ſome of the ſeed expoſed to rot in its firſt germination, and ſome perhaps buried too deep by the rains.

In the county of Norfolk, ſo remarkable for the fertility of the lands and the ſkilful management of the huſbandmen, every ſpecies of grain, but eſpecially the rye, has begun to riſe with the faireſt, promiſe of a plentiful growth.

In Scotland, the Spring ploughing for oats and barley, is, from the moſt ſouthern to the extreme northern counties, either at an end or very far advanced. There is ſcarce a pariſh in Scotland, in which ploughing-matches for prizes have not been, within theſe two laſt months, eagerly celebrated. The competitors, young farmers and farm-ſervants have been numerous; and it has been, in moſt inſtances, exceedingly difficult to decide concerning their reſpective merits. In the ploughing-match in the pariſhs of Erſkine and Inchinnan, the firſt prize was awarded to JOHN ALGIE. The ploughing-match at Maybole gave the firſt of its prizes, under the inſpection, and at the expence of the Carrick Farming Society, to DAVID HANNAH. In the

ploughing-match with Norfolk wheel ploughs, on the eſtate of Mr. Barclay of Urie, the umpires, unable to decide between the merits of JOHN REED and GEORGE MORRIS, divided the two firſt prizes equally between them. The firſt prize in the plowing-match, in the pariſh of Kirkurd in Peebleſhire, was gained by JAMES WALSON. GEORGE FAIRLY obtained the firſt prize in the plowing-match in the pariſh of SKIRLING in Tweeddale. We have thought it an indiſpenſible duty to record the names, and ſucceſs, and thus to contribute what we can to the honour of theſe worthy plowmen.

Mr. CHARLES DUCAT, farmer at Fullarton in Perthſhire, has been honoured with a medal from the Board of Agriculrure, for his "Eſſay on the beſt mode of laying out ley grounds"—communicated by him to the Board. The medal was politely tranſmitted to him by the Right Hon. Lord Carrington.

The Scottiſh Board of Truſtees for the improvement of the manufactures and fiſheries, have again announced the offer of their uſual yearly præmia for the culture of flax in Scotland.

In Ireland, the ſtate and temperature of the weather in the courſe of the month of March, have been exceedingly favourable to vegetation, and to every agricultural labour.

A new variety of the potatoe, "the early Engliſh White"—is now, for the firſt time, introduced into Ireland; is on ſale in conſiderable quantities, for ſeed, on the quays at Dublin; and is expected, in its culture, to ſupply the poor with good new potatoes, earlier in the Summer, than on former years.

A farmer near Cambridge, lately aſked from another, the price of 30*l.* ſterling for two cows with calf. The buyer offered 28*l.* or 4s. a ſtone, for what the cows weighed alive juſt as they then were. The cows were weighed: and the weight was 146 ſtone; for which the buyer paid 29*l.* 4s. very little more than the medium price between what had been aſked and what had been offered. How nice judges, both muſt have been of the probable weight from the mere inſpection of the living animals!

Herefordſhire, March 10. The annual exhibition of bulls, for the premiums of the Agricultural Society of Herefordſhire, took place on Monday; and it ſeemed the general opinion, that ſo many fine animals of the ſort, were never ſeen together before. The ſucceſsful candidates were, the two Mr. Tully's, Mr. Powell, of Titley, Mr. Galliers, of Kings Pyon, and Mr. Apperley, of Withington. The animals had not been fed with corn, or ſtraw imperfectly threſhed.

The Bath and Weſt of England Agricultural Society are ſhortly to hold a Meeting for the purpoſe of conſidering a proper mark of reſpect to the memory of their late Preſident, the much much lamented Duke of Bedford.

Lord Braybrooke was on Wedneſday laſt elected Preſident of the Eſſex Agricultural Society, in the room of Lord Petre deceaſed.

Of the ſhew of cattle and ſheep in competition for Lord SOMERVILLE's prizes, of which the intention and management have much of our approbation, an account, the communication of a judicious correſpondent, may be ſeen in the firſt part (p 169) of the preſent number of this Magazine.

A new early potatoe, known by the name of the *Chineſe Kidney*, not ſubject to the diſeaſe in potatoes, called the *ſcab or curl*, has been this ſeaſon, for the firſt time, introduced into Scotland. Each plant of this variety yields, uſually a very great number of potatoes. The beſt advantages are, therefore, expected from the culture of it.

A number of living pigs have been, laſt month, imported from Ireland to England.

At Downham Fair, March 3, very fine horſes were eagerly bought at great prices. Horſes of middling figure and in indifferent condition, attracted few bidders, and brought paultry prices. Cows and oxen were ſold for low prices. For ſheep, there were few or no bidders.

On the 5th of March, there was killed at Walſingham a four-year-old ox,

which weighed 1252 pounds. It was killed by Meſſrs. Brown and Iſaacks. It had been bred and fed by Mr. J Buck, of Stiffkey.

A pig, not ten months old, was lately killed at Moulton, near Northampton. Its weight was 440 pounds.

The regulated weight of the twelve-penny loaf, at Northampton, on the 20th of March, was 5 pounds, 7 ounces, 13 drachms.

The Board of Agriculture is preparing to ſtrike a medal, in honour to the memory of the late Duke of Bedford.

Manufactures and Useful Arts.

MR. Joſeph Condit, junior, of Broomfield, in New Jerſey, has lately invented a method of manufacturing *paper*, of thoſe which are named *currier's ſhavings*, of tanned leather. He has obtained from the Anglo-American government, an excluſive right to the benefits of this invention, for a certain term of years.

By the advantages of the canal which joins the Forth with the Clyde, the merchants and land-holders in the ſouth of Scotland have been made ſo deeply ſenſible of the importance of opening a country as much as poſſible, by ſuch artificial channels for navigation, that they are preparing to cut a canal between Glaſgow and Edinburgh, to paſs ſtraight acroſs the country, in a direction nearly parallel to the preſent great road between theſe two towns. The ſcheme was conceived, eight or ten years ſince, at a time when the dearth of coals in Edinburgh made its inhabitants deſirous to obtain an eaſy ſupply of this fuel, from the great ſtrata of pit-coal in the vicinity of Glaſgow. Its immediate execution was hindered by the circumſtance of the war. The deſign is now earneſtly revived. A *ſubſcription* has been opened to carry it into *effect*. The neceſſary ſums are likely to be very ſpeedily ſubſcribed. Even in the courſe of the enſuing ſummer, the neceſſary act of Parliament will probably be obtained, and the work begun.

It is calculated, that if, by the inſtitution of ſchools of induſtry throughout England and Wales, ſo many as ten perſons, who were before idle, ſhould be ſet to work; ſhould labour only 300 days in the year; and ſhould earn each only one halfpenny a day;—the total profit to the community would be not leſs than 62,500l. ſterling, a year.

Mr. John Walker and Mr. Peter Alphey, of Weſtminſter, obtained, in November laſt, a patent right to an invention of theirs, for the manufacture of *water-proof caps and hats*; and for making leather, ſilk, linen, cotton, and ſtuffs, paſteboard, and other materials of apparel—alſo, water-proof. The ſecret of their invention conſiſts in painting thoſe matters which are to be rendered water-proof, with oil-paint; and, over this, japanning or varniſhing them. The caps and hats are of paſteboard, covered with linen, and then painted and japanned. Leather, to be thus water-proof, muſt not have been previouſly dreſſed with oil or any greaſy ſubſtance.

Mr. James Boaz, of Glaſgow, made public, ſome months ſince, under the protection of a patent, an ingenious invention of a new telegraph. Its telegraphic effects are produced by lights, diſpoſed in order before an uniformly dark ſurface; or elſe, in dark lamps before a luminous ſurface. The lamps, when not in actual telegraphic employment, are covered with moveable blinds, which, by means of pullies, can be, at pleaſure, withdrawn or replaced. By theſe lamps is ſucceſſively exhibited the figure of every different letter in the words conveying the telegraphic intelligence. The whole apparatus is ſuſceptible of being put in a box, and thus made conveniently portable from place to place.

Mr. Henry Browne, of Derby, obtained, early in the year 1799, a patent for the preparation of what he called *extract of zinc*, which we ſhould call

oxyd of zinc. It is prepared by bringing ſebacic or acetic acid of zinc, from which either of thoſe acids is capable of abſtracting the metallic part.

In conſequence of the greater attention which has lately been paid in England, to the manufacture of the finer ſorts of bather, we loſe every day, more and more, the more valuable becauſe more neceſſary and more univerſally uſeful manufacture of ſtrong and coarſe bathers. It is an object to which the attention even of Government cannot be too earneſtly invited. Superiority in the manufacture of the articles of neceſſary and continual uſe, coarſe bathers, coarſe woollens, coarſe linens, coarſe cottons, &c. is the ſureſt baſis, of manufacturing proſperity to ſuch a country as this.

The *ſtraw-hat* manufacture, now, flouriſhes exceedingly in Hertfordſhire; and contributes much to increaſe the comforts of the poor. It gives, at this moment, profitable employment to many women and children in London. The wages are from 6s. to 16s. a week.

Fine Arts, Science, and Literature.

IT is a curious and pleaſing fact, that, at Venice, under its old government, prizes were given among the people, to the perſon who could, upon trial, repeat the greateſt number of the verſes of ARIOSTO or TASSO; juſt as prizes have been given, in England, for grinning, running, rowing, &c. As this practice depended on the manners and humour of the people, not upon any inſtitution of the government, there is no reaſon why we ſhould ſuppoſe it to be now diſcontinued. There are, in conſequence of this practice, watermen at Venice, who, though they can neither read nor write, have in memory the whole GIERUSALEMME LIBERATA of Taſſo.

Dr. Jamieſon, of Edinburgh, is now employed in the compilation of an etymological dictionary of the words of the Scottiſh dialect.

The late Empreſs Catherine of Ruſſia, was, on a progreſs through a part of her dominions, deceived in regard to the population of the diſtrict through which they travelled, by a contrivance of Prince Potemkin, which deſerves to be generally known. He made ſlight temporary edifices with fronts painted ſo as that they had to tranſient obſervation, the appearance of handſome dwellings newly built, to be erected in aſſemblages here and there, on the roads by which the Empreſs travelled. The peaſants for twenty leagues round, were aſſembled to people the temporary villages. Their flocks and herds grazed on the ſurrounding plains and uplands. The Empreſs was delighted to ſurvey a country ſo rich and flouriſhing; and conſidered the proſperity which ſhe beheld, as a noble proof of the beneficence of her adminiſtration. But ſhe had no ſooner paſſed, than the fairy villages diſappeared, the peaſants diſperſed with their flocks and herds, to their wonted dwellings, and the ſcene remained deſolate, and almoſt without inhabitants, as before.

It has been aſcertained by the obſervations of the late Mr. Beauchant, a French Naturaliſt; that the South coaſt of the Black Sea advances, in ſome parts about 1° farther toward the North, than as it is laid down in the maps; that Capes Kereuè and Jndjè are nearly in 42° North Latitude; that the gulph of Samſon is much deeper, and Trebizond 5 or 6 leagues farther Weſt, than the maps repreſent.

Phidias, the moſt famous ſtatuary of Ancient Greece executed, at the expence of Pericles, a coloſſal ſtatue of Ceres at Eleuſis. It ſurvived the inquries of time and barbarians; and was, in the ſeventeenth century, diſcovered by Sir George Wheeler, in its ancient ſituation. It has been lately purchaſed or otherwiſe obtained by two gentlemen of Jeſus College Cambridge, on their travels in Greece, It is now in conveyance to England; and is intended by thoſe gentlemen, as a preſent to the Univerſity of Cambridge.

LONDON PRICES OF GRAIN for *March*, 1802.

MARK-LANE, *Monday, March* 1.

We have had but a middling ſupply of Wheat in for this day's market, which has cauſed that article to go off with rather more life, at laſt week's prices.—Barle yand Malt are rather briſker ſale, but no alteration in prices.——Oats are very dull, and looking down.——In Peaſe and Beans no alteration.

Price of Grain, on board Ship, as under:

Wheat	56s to 65s	Fine	40s to 45s	White Peas	34s to 42s
Fine	72 to 78s	Malt	40s to 45s	Grey Peas	32s to 36s
Superfine	to 81s	Fine	50s to 53s	Sm. Beans, new,	28s to 30s
Rye	30s to 35s	Oats	18 to 21s	Fine	to 34s
Fine	to 40s	Fine Oats	to 22s	Ticks, new,	25s to 30s
Barley	36s to 38s	Polands	to 23s	Fine	to 32s

Monday, March 8.—We have had a very ſhort ſupply of Wheat in for this day's market, and a good many buyers, which has cauſed fine Wheat to advance full 5s. per quarter ſince this day ſe'nnight.——Barley, owing to a very large arrival, is full 1s. 6d. per quarter lower; but in Malt no material alteration.——Oats are full 1s. per quarter dearer, having but a middling ſupply.——White Peas are full 2s. per quarter dearer, but, in Grey ones, little or no alteration.——Small and Tick Beans went off rather dull ſale.——Flour is 3s. yer ſack dearer.

Wheat	56s to 65s	Malt	42s to 50s	Grey Peas	34s to 36s
Fine	72s to 78s	Fine	to 53s	Sm. Beans	28s to 30s
Superfine	to 86s	Oats	20s to 23s	Fine	to 35s
Rye	36s to 40s	Polands	to 25s	Ticks	25s to 28s
Barley	32s to 38s	White Peas	38s to 40s	Fine	30s to 31s
Fine	42s to 43s 6d	Fine ditto	42s to 44s		

Monday, March 15.—We have had but a ſmall ſupply of Wheat in for this day's market, which cauſed that article to go off full 3s. per quarter advance ſince this day ſe'nnight.—There was a pretty good ſupply of Barley at market, which cauſed that of fine quality to be full 1s. lower; but inferior ſorts are nearly the ſame.——Owing to our having a great many Oats on hand, thoſe of a low quality are very dull, and full 1s. cheaper.—Peas, Beans, and other articles, remain unaltered.—Flour 5s. per ſack dearer than laſt week.

Wheat	56s to 65s	Malt	42s to 50s	Grey Peas	32s to 36s
Fine	72s to 80s	Fine	to 53s	Small Beans	28s to 30s
Superfine	86s to 90s	Oats	17s to 20s	Fine	to 34s
Rye	40s to 42s	Fine	to 23s	Ticks	25s to 30s
Barley	32s to 38s	Polands	to 24s	Fine	31s
Fine	43s	White Peas	40s to 44s		

Monday, March 22.—We have had the largeſt arrival of Wheat in for this day's market than for ſome time paſt, which has cauſed that article to go off, at a declenſion in price of full 8s. per quarter ſince this day week.—Owing to a large ſtock of Barley left laſt week, and a further arrival in to-day, cauſed prime Malting ſamples to be very dull, and full 2s. per quarter cheaper; as alſo are inferior Oats, but fine ſorts are full as dear.—Both Hog Peas and Tick Beans are lower; but in Small Beans little or no alteration.—Flour 5s. per ſack cheaper than laſt Monday.

Wheat	56s to 65s	Fine	to 40s	White Peas	34s to 44s
Fine do.	70s to 72s	Malt	40s to 45s	Grey ditto	32s to 34s
Superfine	78s to 80s	Fine	50s to 52s	Sm. Beans new	28s to 30s
Rye	30s to 35s	Oats	16s to 21s	Fine	to 34s 6d
Fine	40s to 42s	Fine	to 23s	Ticks, new,	25s to 30s
Barley	32s to 38s	Polands	to 24s		

Monday, March 29.—We had a great deal of Corn left unſold laſt week, and a further arrival in for this day's market, which has cauſed Wheat to decline in price full 14s. per quarter ſince this day ſe'nnight.—Barley, owing to a great ſhow at market, moſt of laſt week's ſtock, is full 4s. per quarter cheaper.—Malt is very dull, and little or no alteration in price.—Oats rather lower than laſt week; but in Peas and Beans not much alteration.——Flour 5s. per ſack cheaper, and dull of ſale.

Wheat	56s to 65s	Malt	40s to 45s	Grey Peas	32s to 33s
Fine do.	70s to 72s	Fine	50s	Small Beans new	28s to 30s
Rye	30s to 35s	Oats	14s to 20s	Fine	to 34s
Fine	to 40s	Polands	21s to 22s	Ticks, new,	25s to 30s
Barley	28s to 33s	White Peas	34s to 42s	Fine	to 31s
Fine	to 36				

Prices of Hops, Meat, Seeds, Leather, Tallow, &c. for March 1802.

Price of Hops.	First Week	2d Week	3d Week	4th Week	5th Week
Bags.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Kent — —	7 to 100	78 to 98	78 to 98	78 to 98	90 to 105
Suſſex — —	70 to 84	74 to 90	74 to 90	74 to 90	84 to 98
Eſſex — —	80 to 84	74 to 86	74 to 86	74 to 86	80 to 90
Pockets.					
Kent — —	84 to 112	90 to 112	90 to 412	90 to 112	90 to 116
Suſſex — —	80 to 98	90 to 105	60 to 105	90 to 105	90 to 110
Farnham — —	88 to 105	100 to 140	100 to 140	100 to 140	100 to 140
Seeds.					
Red Clover (per cwt.)	3 to 96	30 to 100	40 to 100	40 to 100	46 to 84
White Clover, ditto —	40 to 168	40 to 168	60 to 168	70 to 168	80 to 105
Trefoil, ditto —	10 to 70	10 to 70	16 to 68	20 to 8[illegible]	36 to 56
Turnip, (per buſhel) —	15 to 22	18 to 28	18 to 21	16 to 2[illegible]	16 to 24
Rye Graſs, (per quarter)	20 to 38	16 to 34	20 to 38	20 to 3[illegible]	20 to 36
Cinque Foil, ditto —	50 to 60	56 to 63	50 to 60	56 to 60	56 to 60
White Muſtard Seed (p. b.)	11 to 14	— to 14	14 to —	14 to —	— to 14
Brown do. do. —	11 to 4[illegible]	14 to 16	14 to 16	14 to 16	14 to 16
Canary Seed do. do. —	11 to 12	10 to —	10 to —	10 to —	10 to —
Rape Seed, (per laſt) —	341 to 381	— to 361	— to 361	— to 361	—l to 361
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.*	*s.d.* *s.d.*
Beef — —	4 8 to 6 4	4 8 to 6 4	5 0 to 5 4	4 8 to 5 8	5 0 to 6 0
Mutton — —	5 6 to 7 0	5 6 to 7 0	6 0 to 7 0	6 0 to 7 0	6 0 to 7 0
Veal — —	5 6 to 7 6	6 0 to 7 4	6 0 to 7 6	5 6 to 7 0	6 0 to 7 0
Pork — —	5 8 to 7 4	6 0 to 7 4	5 8 to 7 0	5 4 to 6 8	5 4 to 6 8
Lamb — —					
Head of Cattle—Beaſts about	1,900	2,000	2,000	2,100	2,000
——— Sheep and Lambs	8,000	6,000	8,000	8,000	6,000
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	18 to 21	18 to 21	19 to 21	18 to 22	18 to 20
Ditto, 60lb. to 66lb. each	20 to 28	22 to 24	22 to 24	22 to 24	22 to 23
Merchants Backs —	18 to 19½	17½ to 19	17½ to 19	18 to 19	18 to 19
Dreſſing Hides —	14 to 17	14 to 16	14 to 16	14 to 16½	14 to 16
Fine Coach Hides —	16 to 18	16 to 18	16 to 18	17 to 18	16½ to 18
Crop Hides for cutting	18 to 20	18 to 21	17 to 19	17 to 19	17 to 19
Flat Ordinary —	15 to 18	14½ to 17	14 to 16½	14 to 17	14 to 16
Calf Skins, 30 to 40lb. *p.* doz.	20 to 26	21 to 27	21 to 27	21 to 27	21 to 28
Ditto, 50lb. to 70lb. do.	24 to 28	25 to 29	16 to 29	26 to 29	25 to 30
Ditto, 70lb. to 80lb. do.	2[illegible] to 26	25 to 27	25 to 27	25 to 27	25 to 27
Sm. Seals (Greenland)	30 to 33	30 to 33	30 to 33	30 to 38	30 to 33
Large do.	51 to 71	51 to 71	100 to 140s	51 to 71	51 to 71
Tanned Horſe Hides	18s to 30s	18s to 30s	18s to 30s	13s to 30s	18s to 30s
Goat Skins —	20s to 64s	— to —	—s to —s	—s to —s	—s to —s
Price of Tallow.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s* *d.*
St. James's Market —	4 3	4 2	4 2	4 4	4 3
Clare Market — —	4 3	4 2	4 2	4 2½	4 2
Whitechapel Market —	4 2	4 1	4 1	4 1	4 1½
Per ſtone of 8lb. Average	4 2½	4 2½	4 1½	4 2½	4 2
Town Tallow — —	72 0	71 0	70 6	71 6	71 0
Ruſſia ditto (Candles) —	66 0	66 0	66 0	67 0	67 0
Ruſſia ditto (Soap) —	64 0	64 0	64 0	65 0	65 0
Melting Stuff — —	56 0	54 to 56s	56 0	57 0	58 0
Ditto rough — —	40 0	40 0	40 0	42 0	42 0
Graves — — —	19 0	19 0	19 0	19 0	19 0
Good Dregs — —	11 0	11 0	11 0	11 0	11 0
Yellow Soap — —	70 0	72 0	72 0	74 0	74 0
Mottled ditto — —	80 0	80 0	80 0	82 0	82 0
Curd ditto — —	84 0	86 0	84 0	86 0	86 0
Candles, per dozen, —	11 0	11 0	11 0	11 0	11 0
Moulds — — —	12 0	12 0	12 0	12 0	12 0

	First Week	2d Week	3d Week	4th Week	5th Week
Raw Hides.	*s. d. s. d.*	*s. d. s. d.*	*s. d. s. d.*	*s. d. s. d.*	*s. d. s. d.*
Beft Heifers & Steers, pr ft.	3 4 to 3 8	3 4 to 3 8	3 4 to 3 6	3 4 to 3 6	3 4 to 3 6
Middling — —	3 0 to 3 2	3 0 to 3 2	2 10 to 3 2	3 0 to 3 2	2 8 to 2 10
Ordinary — —	2 0 to 2 8	2 4 to 2 8	2 2 to 2 6	2 4 to 2 8	2 4 to 2 6
Market Calf — —	9 0	9 0	9 0	9 0	9 0
Eng. Horfe — —	13s to 15s	12s to 16s	12s to 16s	12s to 16s	12s to 16s
Lamb Skins — —	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0	0 0 to 0 0
Sheep Skins — —	4 0 to 8 6	4 0 to 8 6	4 0 to 8 6	4 0 to 9 0	4 0 to 10 0
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*
St. James's—Hay —	3 19 3	4 4 6	4 5 0	4 3 6	4 5 0
Straw —	1 13 9	2 0 6	2 5 9	2 6	2 3 6
Whitech.—Hay —	4 12 6	4 14 6	4 17 0	4 17 0	4 12 6
Clover —	6 0 0	6 0 0	6 1 0	6 1 0	6 1 6
Straw —	1 15 6	1 19 0	2 3 0	2 3 0	2 4 0
Uxbridge.					
Wheat per load — —	17l to 22l	18l to 22l	19l-23l 15s	17l to 22l	17l to 22l
Barley — — —	38s to 43s	39s to 44s	40s to 44s	40s to 44s	38s to 42s
Oats — — —	21s to 28s	21s to 28s	22s to 28s	22s to 28s	22s to 28s
Old Beans — — —	46s to 54s	46s to 54s	44s to 50s	44s to 50s	34s to 38s
New ditto — — —	32s to 38s	32s to 38s	36s to 40s	36s to 40s	00s to 00s
Peas — — — —	40s to 44s	0s to 44s	40s to 44s	40s to 44s	40s to 42s
Newbury.					
Wheat — — —	57s to 74s	56s to 79s	60s to 82s	60s to 82s	58s to 78s
Barley — — —	34s to 43s	35s to 39s	33s to 40s	32s to 38s	30s to 38s
Beans — — —	35s to 42s	34s to 40s	36s to 42s	35s to 40s	35s to 38s
Oats — — — —	30s to 35s	18s to 30s	20s to 26s	22s to 27s	21s to 26s
Peas — — — —	38s to 42s	38s to 43s	37s to 41s	38s to 41s	40s to 44s

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of Feb. *and the 20th of* March, 1802.

BANKRUPTCIES.

(The Solicitors' Names are between Parentheſes)

ARBUTHNOT, Alex. and Richard Brachen, Philpot lane, London, and Birmingham, merchants. (Swain and Stevens, Old Jewry)

Allen, Peter, Nantwich, innholder. (Royle, Cheſter)

Anderſon, John, Church ſtreet, Southwark, twine-ſpinner. (Lowton, Gray's inn)

Bakewell, Rob. Brydges ſtreet, Covent garden, coffee-houſe keeper. (Jennings, Great Shire lane)

Bleaſe, Ralph, Liverpool, grocer. (Williamſon, Liverpool)

Butler, Wm. Weldon, linen-draper. (Field, Friday ſtreet)

Bower, Edward, New Mills, Derbyſhire, cotton-ſpinner. (Duckworth and Chippendall, Manchester)

Bottle, Robert, formerly of Woolwich, exciſe-officer, afterwards of Warren ſtreet, Fitzroy ſquare, late of Great Warner ſtreet, Clerkenwell green, diſtiller, &c. (Barnes, Clifford's inn)

Bickerton, Sarah, Great Yarmouth, hoſier. (Swain and Stevens, Old Jewry)

Bates, Thomas, Wellbeck ſtreet, auctioneer, &c. (Walthew, Lower Seymour ſtreet)

Comber, Richard, Lewes, watchmaker. (Palmer and Pugh, Bartlett's buildings)

Collier, William Leigh, within Penſington, corn-dealer. Windle, Bartlett's buildings)

Clegg, Samuel, Joſeph, and John Whitby, Liverpool, merchants. (Greaves, Liverpool)

Cobb, John, Wisbeach, St. Peters, in the Iſle of Ely, millwright. (Wortham and Stephenſon, Caſtle ſtreet, Holborn)

Coombs, Ebenezer, St. James's ſtreet, ſtationer. (Harman, Wine Office court, Fleet ſtreet)

Clegg, John, and John Prince, Watling ſtreet, Warehouſemen. (Hurſt, Furnival's inn)

Collings, Henry, and Richard Ireland Gifford, St. Philip and Jacob, Glouceſterſhire, ſkinners and glue makers. (Blandford and Sweet, Temple)

Dike, George, Abingdon ſtreet, ſhoemaker. (Brown, Little Friday ſtreet)

Donaldſon, Robert, Liverpool, haberdaſher. (Batten and Anſtie, Temple)

Dyer, Jonah, Wotton-under-edge, ſpinning machine-maker. Price and Williams, Lincoln's inn)

Du Bois, John Frederick, and James (firm, William, John Frederick, and James Du Bois) Alderman's Walk, merchants. (Harman, Wine Office court)

Every, Samuel, Liverpool, ſhip-chandler. (Windle, Bartlett's buildings)

Emet, John, Stoneyhurſt, cotton-ſpinner. (Edge, Manchester)

Foggan, Robert, Salford, cotton-manufacturer. (Edge, Manchester)

Fraſer, Henry, Nightingale lane, grocer and [illegible]ſon, London ſtreet)

Guyer, Richard, Gracechurch ſtreet, hatter. (Meſſrs. Weſton, Fenchurch ſtreet)

Gill, George, Warrington, merchant. (Blackſtock, Temple)

Graham, Launcelot, William and Thomas, Liverpool, merchants. (Cooper and Lowe, Southampton buildings)

Green, John, Cumberland ſtreet, Curtain road, butcher. Wild, Warwick ſquare)

Hearris, Henry, Waller row, Lambeth, umbrella-maker. (Willett and Anneſley, Finsbury ſquare)

Horſley, Matthew Coates, formerly of Calcutta, now of Bread ſtreet, London, partner with George Gowar and Thomas Gowar, merchants. (Newell, Eſſex ſtreet)

Hope, Henry, Liverpool, woollen-draper. (Palmer and Tomlinſon, Warnford court)

Hatfield, John Weſtby, Falmouth, warehouſeman. (Carpenter and Guy, New inn)

Hobart, John, Warwick ſtreet, Golden ſquare, muſical inſtrument-maker. (Fraſer, Gray's inn)

Hunter, Peter, Durham, ſcrivener. (Raine and Wrangham, Seathing lane)

Harris, Joſeph, Holywell ſtreet, Strand, ſaleſman. (Bexwell, George ſtreet, Minories, and Keys, James court, Bury ſtreet, St. Mary Axe)

Howett, John, St. Martin's lane, carpenter and builder. (Richardſon, New inn)

Johnſon, Thomas, Ouze-Fleet, near Howden, Yorkſhire. (Huxley, Temple)

Johnſon, Joſeph, Manchester, merchant. (Cheſhyre and Walker, Manchester)

Keeves, John, Chandos ſtreet, Covent garden. (Johnſon, Southampton court, Queen's ſquare)

Kingſton, James, Duke ſtreet, Manchester ſquare, ſurgeon, &c. (Walthew, Lower, Seymour ſtreet)

Kindon, John, Briſtol, cabinet-maker. (Blandford and Sweet, London)

Lyon, James, Savage gardens, merchant. (Atcheſon, Ely place)

Like, Thomas, Old Brompton, Middleſex, builder. (Harvey, Curſitor ſtreet)

Lewes, John, Lower Burgh, Cherley, cotton-ſpinner. (Wilſon, Caſtle court, Holborn)

Mc Garry, Michael, Bell Wharf, Shadwell, victualler and ſlop-ſeller. (Beetham, Bouvrie ſtreet, Fleet ſtreet)

Milne, Richard Rochdale, ſcrivener. (Sykes, New inn)

Maſkery, William, Lane-end, Stafford, mercer. (Mathews and Good, Gough ſquare)

Morris, William, Liverpool, grocer. (Blackſtock, Temple)

Mc Kennan, Gilbert, Liverpool, ironmonger. (Windle, Bartlett's buildings)

Maunder, Robert, Exeter, wine-merchant. (Sykes, New inn)

Mills, John, Macleſfield, hat-manufacturer. (Sudlow and Richardſon, Monument yard)

Maſh, John, Aylſham, Norfolk, merchant. (Townſend, Staples inn)

Newton, Samuel, Manchester, cornfactor. (Duckworth and Chippendal, Manchester)

Newlan,

Nowlan, James. (partner with John Fish, junior) Newcaſtle-upon-Tyne, ſoap-maker. (Shelton, Seſſions Houſe, London)
Parquet, Emanuel, Somer's Town, diſtiller. (Seymour, Margaret ſtreet, Cavendiſh ſquare)
Pedlar, Henry, Bath, woollen-draper. (Richardſon, New inn)
Platt, George, Weaky in Saddleworth, clothier. (Battye, Chancery lane)
Palmer, Worral, Holbeach, draper, &c. (Maſon, Curſitor ſtreet)
Pierſon, George, Cockermouth, woollen-manufacturer. (Wordſworth, Staples inn)
Rothwell, John, Nottingham, hoſier. (Rider, 123. Fetter lane)
Reppon, Robert, Liverpool, merchant. (Swain and Stevens, Old Jewry)
Ruſſell, Edward, Maidſtone, hop-merchant. (Atkinſon, Chancery lane)
Starey, Thomas, Newgate ſtreet, linen-draper. (Brown, Little Friday ſtreet)
Simpſon, Joſeph, Colcheſter, brazier. (Sanderſon, Palſgrave place)
Stewart, Adam, Liverpool, merchant. (Ellames, Liverpool)
Stockwell, Charles, Shelf, Halifax, ſcribbling-miller; Chas. Hemingway, Leeds, roper; James Haigh, Shelf, farmer; Samuel Stockwell, Halifax, yeoman; John Baker, Leeds, dyer; and John Rogerſon, Leeds, dyer, (trading under the firm of Stockwell and Co.) (Gleadhill, Lothbury)
Swainſon, Richard, and John Gardner, Liverpool, grocers. (Blackſtock, Temple)
Strickland, Thomas, and Swinton, C. Holland, Liverpool, merchants. (Keightley, Liverpool)
Scott, Charles Elliot, Upper Berkeley ſtreet, bookſeller. (Smith and Henderſon, Great Preſcott ſtreet)
Twamley, Edw. Swanſea, baker. (Kenderley, Long, and Ince, Symond's inn)
Taylor, John, and John Hudſon, Bordeſley, near Birmingham, factors and lockſmiths. (Swain and Stevens, Old Jewry)
Underwood, John, Great Marlbro' ſtreet. (Hannum, Piazza Chambers, Covent garden)
Wallis, John Eglenton, Colcheſter, merchant. (Sanderſon, Palſgrave place)
Winton, Philip, Jamaica Houſe, Bermondſey, victualler (Baſſett, Webber row, Blackfriars)
Wainwright, John, Liverpool, gun-maker. (Blackſtock, Temple)
Williams, William, Cowbridge, ſhopkeeper. (Lewes and James, Gray's inn)
Wallis, James, junior, Briſtol, biſcuit-baker. (Kinderley, Long, and Ince, Symond's inn)
Williams, Henry, Crickhowell, Brecon, ſcrivener. (Jones and Page, Nag's Head court, Gracs Church ſtreet)
Wrigg, William, Mancheſter, liquor-merchant. (Ellis, Curſitor ſtreet)
Webb, Charles, Bromſgrove, ſcrivener. (Neeld and Fladgate, Norfolk ſtreet)
Williamſon, Thomas, Holbeach, grocer. (Baxters and Martin, Furnival's inn)
Webſter, Arthur, Belper, Derbyſhire, baker. (Lowton, Temple)
Woodall, Picket Row, Cumberland, hatter. (Pearſon, Staple's inn)
Woodbridge, Stephen, New Brentford, ſtationer. (Mills, Ely place)
Williams, Griffith, Tooley ſtreet, cheeſemonger. (Parker, Palmer, and Cuppage, Eſſex ſtreet)
Wordon, Robert, Pincock-mill, miller. (Blackſtock, Temple)
Yeadole, John, Weſt Monckton, Somerſetſhire, mealman. (Reeks, Wellcloſe ſquare)
Young, Thomas, Ripon, grocer. (Lodington, Secondaries Office, Temple)

DIVIDENDS ANNOUNCED.

Aſhdale, Samuel, Bloſſom ſtreet, Spital fields, cooper, March 30
Aſhton, Thos. Nelſon, Liverpool, merchant, &c. March 22
Aſhcroft, Wm. Knowſley, earthenware-manufacturer, April 5
Armitage, Rich. New Bond ſtreet, ironmonger, April 3
Airis, Joſ. and Wm. Taylor, Oxford, corn-dealers, April 8
Buddle, Wm. junior, Chimes ſtreet, St. Giles's, carpenter, May 10
Boubyer, Wm. Briſtol, malſter, March 29
Bullivant, Abraham, Holyhall, victualler, April 19
Beaumont, Rich and Stephen Vickerman, Healy Butts, South Croſsland, clothiers, March 24
Beaumont, Wm. Healy Butts, South Croſsland, clothier, March 24
Bolus, Tho. Temple, and John Robſon, Crutched-friars, cornfactors, May 10
Bowneſs, Tho. and George Padmore, Wimbledon, callicoprinters, May 10
Baker, Tho. and John Sherland, Exeter, woollen-drapers, April 17
Barker, Jonathan, Cannon ſtreet, ſugar-factor, May, 1
Bower, Charles, Carey ſtreet, ſcrivener, April 30
Bowers, Edward, and Arthur Reid, Bedford ſtreet, Covent garden, taylors, April 23
Brade, Wm. and Wm. Storey, Preſton, Joiners, &c. jointly and ſeparately, April 6
Bayley, Wm. Briſtol, linen-draper, April 15
Bewick, John, junior, Monkwearmouth-ſhore, butcher, April 7
Clapp, Charles, Exeter, ironmonger, March 15
Chowles, Charles, North Audley ſtreet, upholder, May 15
Chambers, Rich. Salford, brewer, March 20
Cunningham, Wm. Great Preſcott ſtreet, wine-merchant, &c. March 23
Cooke, Samuel, junior, Marlbro', clothier, March 25
Chamley, Tho. Liverpool, earthenware-dealer, ſurviving partner of Jonathan Dixon, deceaſed, April 5
Clark, Andrew, Liverpool, merchant, April 5
Court, Charlotte, and Alex. Webſter Court, Red Lion ſtreet, Clerkenwell, merchants, May 4
Churley, Matthew, Tokenhouſe yard, factor, April 30
Eccles, Tho. and Barnard Tho. Holbrook, Watling ſtreet, warehoutemen, March 6
Eglin, Septimus, and Sarah Pepys, Chiſwell ſtreet, bookſeller, April 24
Emet, John, Hedder within Aighton, cotton-ſpinner, April 5
Friend, John, Bermondſey ſtreet, feli-monger, March 23
Flower, Francis, St. Paul's Church yard, haberdaſher, May 1
Fezard, James, ſenior, Letitia, and James the younger, Park lane, ſtable-keeper, April 6
Farmer, Thomas, Coventry, ſadler, April 7
Franco, Abram, Haim, America ſquare, merchant, April 13
Green, Wm. Crooked lane, warehouſeman, April 3
Golding, Joſeph, Bricport, twine-maker, March 17
Goodrich, Lemuel, Leiceſter, hoſier, March 19
Gates, Rich. Saffron hill, baker, May 8
Galliers, Jane, St. John ſtreet, Weſt Smithfield, baker, May 11
Gadd, Emanuel, Taunton, druggiſt, April 19
Hale, Wm. Monmouth, timber-merchant, March 22
Hughes, Tho. Liverpool, taylor, April 7
Hoade, Tho. Chertſey, dealer, March 23
Hilſtead, Rich. Horſham, victualler, May 4
Hartſink, John Caſper, Julius Hutchinſon, and Wm. Playfair, Cornhill, bankers, April 30
Hopwood, Daniel, Union ſtreet, St. Mary le bone, grocer, April 3
Hall, Edward, Rocheſter, Taylor, &c. April 30
Hawke, Francis, Sheffield, fileſmith. April, 14
Hoade, Thomas, Chertſey, dealer. March 1
Hoyte, Henry, Ilminſter, grocer, &c. April 16
Ireland, Wm. (Ireland, Calvert, and Co.) Lancaſter, merchants, ſeparate eſtate, March 18
Ireland, Wm. Nath. Calvert, James Overend, and Corney Tomlinſon, Lancaſter, merchants, April 12
Ireland, Calvert, Overend, and Tomlinſon, Lancaſter, merchants, ſeparate eſtate of Nathaniel Calvert, April 12
Ireland, Calvert, Overend, and Tomlinſon, Lancaſter, merchants, ſeparate eſtate of Corney Tomlinſon, May 17
Johnſton, James, pariſh of St. James, Weſtminſter, brewer, May 1
Jones, Hannah, Dolgoch, malſter, April 9
Jacob, Harry and Joſeph, Milford, ſhip-builders, April 13
Kemble, Samuel, and Wallerſpens, Norfolk ſtreet, merchants, ſeparate eſtate of Wallerſpens, March 4
Kohne, Nicholas, And. Boyſon, and John C. Shalch, Bishopſgate ſtreet, merchants, March 16
Knowles, James Greenhead, Huddersfield merchant, April 14
Leever, Armand, Finch lane, merchant, March 13
Le Legg, Shields, Portſea, ſhoemaker, March 27
Levy, Iſrael, Lambeth road, merchant, April 3
Lamb, Wm. Mancheſter, druggiſt, April 12
Moryille, George, Lancaſter, merchant, March 15
Meredith, James, Hereford, linen-draper March 23
Malcolm, Samuel, Old Broad ſtreet, broker, April 3
Newall, Tho. Duckenfield, cotton-manufacturer, March 17
Nalder, Francis, Snaresbrook, victualler, March 23
Newman, Thomas, Exeter 'Change, optician, April 3
Obbins, Silveſter, junior, Boſton, carpenter, March 23
Ollenranſhaw, Wm. Stafford, ſhoemaker, April 5
Perry, Robert, and T. Andrews, George Brewhouſe, Hackney, brewers, March 13
Pereirei, Ab. Mendes, and Hermenegild Caſtellan, Old Bethlem, merchants, March 23
Partington, James, Fen court, Fenchurch ſtreet, merchant, April 3
Philip, Hambly Robert, Fluſhing, Cornwall, warehouſeman, March 24
Parſonage, Samuel, Mancheſter, Plumber, &c. April 20
Randall, Chadd, Liverſtock green, coal-merchant, March 30
Roberts, Henry, Standen, John Roberts, Newport, and Mark Gregory, King's Arms yard, bankers, March 22
Rackſtraw, Joſeph, Henley on Thames, grocer, April 3
Rawſon, John, Leiceſter, hatter and hoſier, March 30
Routhledge, John and William, Mancheſter, cotton-ſpinners, April 14
Richardſon, Jaſper, Carliſle, grocer, April 21
Royle, Jeremiah, and Thomas Peach, Mancheſter, cotton-manufacturers, April 15
Shepherd, Tho. Osborne, Dorſet, miller, &c. March 16
Stanton, Tho. Ironmonger lane, factor, May 1
Stewart, Wm. Doncaſter, hawker, April 3
Shivers, Tho. Nicholas lane, merchant, June 12
Shaw, James, Tungewitte Haulgh, whitſter, April 3
Smith, Robert, the younger, late of London, merchant, April 3
Troughton, Edw. and Wm. Carſhalton, taylors, March 27
Weller, Wm. Waterley, Deptford, miller, [illegible] 15
White, James, and Jonas Fiſh, junior, Devizes, clothiers, March 25
Williams, John, Abingdon, carrier, May 1
Waller, Robert, Plymouth dock, hatter, April 7
Williams, Griffith, Pentre Gwaianey, ſcrivener, April 3
Wood, John, Hayhead, Stafford, maltſter, April 19
Walker, James, Mancheſter, cotton-manufacturer, April 20
Wells, Tho. junior, Robertsbridge, ironworker, April 12
Wood, Abraham, Scotland yard, victualler, April 10
Wienbolt, John Birket, Old Swan, merchant, ſurviving partner of Sarah Wienbolt, April 24
Yates, Tho. Stockport, partner with Tho. Lewes, late of Mancheſter, muſlin-manufacturers, April 10

PRICE OF COALS IN LONDON, *for March*, 1802.

Coal Exchange for the laſt week in February.

	s.	d.		s.	d.
Monday.			Montague	36	0
Willington	39	6	Windſor's Pontop	36	9
Walker	39	6	*Friday.*		
Tanfield	37	3	Eighton Moor	36	0
Pontop	36	6	Hebburn	39	6
Wedneſday.			Holywell	35	9
Adair's Main	35	9	Hartley	37	6
Benton	37	3	Murton	35	3
Hebburn Main	39	6	Wylam	34	3
Holywell	35	9	Wallſend	41	0

Coal Exchange for the firſt Week in March.

	s.	d.		s.	d.
Monday.			Walker	40	3
Wallſend	41	0	Wallſend	41	6
Biggs's Main	40	6	Willington	40	0
Heaton	40	0	*Friday.*		
South Moor	34	6	Benton	39	0
Wentworth	34	0	Cowpin	38	6
Wedneſday.			Brandling	37	6
Kenton	39	6	Biggs's Main	40	6
Tyne Main	37	3	Kenton	40	6

Coal Exchange for the ſecond Week in March.

	s.	d.		s.	d.
Monday.			Biggs's Main	41	0
Adair's	37	3	Eighton	35	9
Cowpin	38	6	Walker	41	0
Hartley	38	6	Kenton	40	6
Brandling	37	9	*Friday.*		
Hollywell	35	9	Cowpin	37	3
Windſors	35	9	Biggs's Main	41	0
Walker	40	9	South Moor	33	9
Kenton	41	0	Wallſend	42	3
Wedneſday.			Wylam Moor	34	3
Hartley	38	0	Bedford	32	2

Coal Exchange for the third Week in March.

	s.	d.		s.	d.
Monday.			Bourn Moor	35	9
Beſt Coals	42	0	*Friday.*		
Wedneſday.			Adair's	36	9
Brandling	38	3	Cowpin	38	6
Hartler	37	9	Tyne	28	6
Hollywell	35	0	Wallſend	41	6
Biggs's Main	41	6	Bourn Moor	35	9
Tyne	28	0	Bedford	32	6

Coal Exchange for the fourth Week in March.

	s.	d.		s.	d.
Monday.			Walbottle	36	3
Biggs	41	6	Hebburn	42	0
Hollywel	33	7	Benton	36	3
Benton	37	6	*Friday.*		
Wedneſday.			Benton	37	9
Benton	38	0	Brandling	38	3
Biggs	42	0	Cowpin	37	3

Delivered in Town at 9s. advance on the above price.

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

From the Returns received in the Week, ended MARCH 13, 1802.

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	78	11	43	0	41	8	25	1	38	2	40	4		
Surrey	79	8	41	0	41	10	24	8	37	6	38	6		
Hertford	72	6	46	6	40	2	23	4	39	9	39	4		
Bedford	74	3	54	0	42	1	20	3	36	8	38	5		
Huntingdon	72	10			38	8	17	6	30	0	36	9		
Northampton	74	10			38	0	18	0	38	6				
Rutland	77	0			39	0	17	0	37	0			59	1
Leicester	76	8			39	1	18	4	37	10	57	0	45	3
Nottingham	81	4	53	6	46	0	20	8	42	0				
Derby	82	0			46	8	21	2	45	8	38	0	31	9
Stafford	77	2			44	6	22	6	49	7			33	5
Salop	74	8	56	0	42	8	22	5	44	5	43	9	69	2
Hereford	64	9	44	10	37	3	22	4	41	6	37	10	70	4
Worcester	74	3			40	11	27	8	39	8	44	4		
Warwick	80	2			43	9	25	6	45	1	51	6	45	4
Wilts	61	8			34	0	22	8	45	8	38	0		
Berks	75	5			37	10	25	0	46	11	40	6		
Oxford	69	7			37	10	21	1	36	10	37	3		
Bucks	78	0			40	6	22	2	39	4	40	9		
Brecon	67	2	48	0	40	6	18	4			32	0	42	5
Montgomery	67	3			48	0	16	2			36	10	38	2
Radnor	67	4			35	9	20	9			35	4	53	8

Maritime Counties.

Essex	79	7	38	6	40	10	23	6	31	9	32	6		
Kent	75	0			40	6	25	2	35	4	36	0		
Sussex	79	4			37	0	24	2			41	8		
Suffolk	74	2			40	7	19	8	29	5	33	1	44	6
Cambridge	71	1	41	4	30	3	15	4	27	10				
Norfolk	72	8	41	0	37	11	19	6	31	0	36	0		
Lincoln	72	4	47	6	36	0	15	8	30	7	40	10		
York	68	8	44	6	37	2	17	2	33	2	56	0	36	10
Durham	70	2					18	2						
Northumberland	63	10	44	8	30	11	17	5			35	4	13	8
Cumberland	80	8	50	1	37	4	20	11					18	2
Westmorland	84	6	57	6	41	8	22	8					19	5
Lancaster	80	3			48	6	23	10	43	9			20	0
Chester	73	3					20	2					20	8
Flint	80	11												
Denbigh	79	11			49	10	19	8	44	10	38	10	38	2
Anglesea					40	0								
Carnarvon	77	8	50	0	43	4	19	0					41	4
Merioneth	73	4			42	0	21	0			58	0	35	9
Cardigan	69	3			31	11	14	0						
Pembroke	61	7			31	5	13	7						
Carmarthen	66	0			34	9	15	4						
Glamorgan	70	3			36	0	18	6						
Gloucester	72	6			39	9	21	2	30	10	49	6		
Somerset	66	1			41	6	17	8	34	0	32	0		
Monmouth	71	0			38	7	20	10						
Devon	65	6			31	7	16	1	45	4			40	8
Cornwall	65	10			30	8	15	4						
Dorset	68	0			35	2	28	7	40	0	36	0		
Hants	67	4			36	9	23	11	48	4	36	0		

A TABLE of the Prices of STOCKS in *March*, 1802.

Days	Bank Stock.	3 per Ct. Red.	3 per Ct. Consols.	4 per Ct. Consol.	5 per Ct. Navy.	5 per Ct. Loyalty	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imperial Ann.	Irish 5 per Ct.	Ind. Stock	Exchequ. Bill.	Eng. Tick	Consols for acct.
March 1		69½	69⅞ 68¾	89¼	100⅛ 99⅞	101⅜	20 3-16	5 3-16	68½	12 7-16	100¾		4 5	16 19	69⅞
2		69⅛	68⅝	86⅝	99⅝	101¾ 100¾			67⅞	12 5-16	99⅞			16 19	69⅛
4	188½ 188		68½	85⅞	99⅞	100¾ 101			68¼	12⅜ 7-16	100½	213¼ 213		17 1	69⅛
5			67¾		99¾	100¾			67⅝	12¼ 5-16	100			17 5	68¼
6			67⅞		99⅞			5⅜	67¼	12¼ 5-16	100⅛			17 5	68¼
8			67⅞ 68		99⅞				67⅜	12¼ 5-16			2 4 prem.	17 7	68¼
9			67⅞		99⅞				67¼	12⅜ 5-16		214		17 9	68⅛
10			67⅝		99⅞				67⅜	12¼ 5-16				17 12	68⅛
11			67⅝		99⅞				67¼	12¼ 5-16				17 14	68⅛
12			67⅝		99⅞ 100				67¼	12¼ 5-16				17 15	68⅛
13			67¾ 68⅛		100¼					12¼ 5-16				17 17	68¼
15			68½ ⅞		100⅞				68¼	12 7-16			1 2 prem.	18 0	68⅜
16			68⅞ 69		100⅞ 101				68¼	12 7-16			1 2 prem.	18 15	69⅛
17			69⅛		100¼				67¼	12 7-16				18 15	69⅛
18			69⅛		101⅜					12 7-16			2 3 prem.	18 15	69⅛
19			69⅛		101⅞				68½	12 7-16½			par. 1 par.	19 0	69⅛
20			69⅛ 69		101⅞				68½	12 7-16½				19 5	69¼
22			69		101¾ 102				68½				par. 1 par.	19 15	69¼
23			69		102⅛				68¼	12 7-16½			2 1 prem.	20 5	69¼
24			69⅛		102⅜					12½ 9-16				21 0	69⅜
26			69⅜		102⅞				68¾	12½ 9-16				21 5	99⅝
27															
28															

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