THE KOHLRABI.

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DESCRIPTION OF THE KOHLRABI.

WITH A PLATE.

To the Editor of the Agricultural Magazine.

Sir,

THIS invaluable Turnip, of which I herewith send you a representation, and of which, I hope, your Artist will give an accurate Engraving, is, I believe, very little known in this country; but I am convinced the more it is cultivated the more its advantages will be felt by all graziers. It withstands frosts the most intense, as was proved this last winter in Mr. Curtis's Botannical Garden, in Chelsea, where some of these plants weighed seven or eight pounds, and though many of them were notched and hacked on purpose for the experiment, yet the turnip remained perfectly sound and undamaged in any way by very severe weather, while a bed of Swedish turnips, its neighbours, lay quite rotten. Its saccharine qualities are equally remarkable, and both its leaves and its root, which have a flavour of artichoke bottoms, are a very delicious vegetable for the table.

In a small German pamphlet upon Rural Economy, dated Leipsig, 1797, I find the plant mentioned as follows:

"XV. Linnæan Class.—Kohlrabi, above the ground, Brassica gongylodes, with eatable root upon the stalk, of which there are two sorts, (Knollen) green and blue. Kohlrabi under the ground, Brassica Obracea, Napo Brassica, both are equally good as well for man as beast. In transplanting them, their root should be cut off about one-third, and care taken that they are planted sufficiently deep; by this curtailment of the tap root they grow to a much larger size, and avoid becoming tough—the soil for them should not be too wet."

The seed of this plant has been distributed to most of the principal gentlemen of this country, who so laudably turn their attention to rural concerns, and there is reason to believe, that this year, there will be many acres of this very profitable vegetable raised in different parts of the kingdom, which is now to be sown, as cabbage seed, in beds, and transplanted out in rows towards the 10th of June.

I return you my thanks for the many useful hints I pick up monthly from you valuable Miscellany.

I remain, yours,

A GENTLEMAN FARMER.

P. S. I hope shortly to be able to communicate to you an account of the properties attending a species of grass much cultivated in Hungary, and which promises a very remarkable and beneficial effect upon horses.

ON THE SWEDISH TURNIP.

To the Editor of the Agricultural Magazine.

SIR,

AS I have, for more than a dozen years past, been a cultivator of the Swedish Turnip, having sown the seed from the first parcel that was introduced through Scotland by the late Sir William Fordice, you may naturally suppose that I perused with some attention, a letter in your February Magazine, for 1802, (which but very recently fell into my hands;) and the author's remarks upon this truly valuable root are, in general, extremely just; but, I hope, he will forgive me in differing from him in two very essential points, namely, as to its *nutritiousness* and *quantity* of feed, when put in competition with the other sorts of turnips, an acre of which is, I believe, commonly accounted a good one, that will keep, in a fattening state, an hundred sheep a week; but, were it necessary, I could mention some respectable Farmers in this quarter, who could prove they have done a great deal more with the Swedish Turnip; and I have myself fattened a score of wethers upon *an acre and a half* of them, which fully satisfied those sheep (averaging twelve stone) for *fourteen weeks;* whilst their fellows consumed more than double the quantity of the white-round turnip. Their superiority in point of hardness, and in resisting the severest frosts of this climate, also greatly enhances their value: and the advantages they gave in the last, and in the present spring, are again rendering to their possessors, who are, *at length,* fast encreasing around me, are really incalculable. What a sheet-anchor (if I may be allowed to use a nautical term) is a crop of Swedes to the Farmer who has no watered meadows to resort to in the months of April and May, to which time these turnips may be made to hold out for his stock? At the same time enabling him to lay up his artificial grasses as early as he pleases.

I must further remark, in answer to the objections advanced in the abovementioned letter, that this neighbourhood is pestered with as many depredators, on this sweet and most nourishing root—such as hares, rabbits, rooks, wood-pidgeons, partridges, &c. as can possibly be met with in any part of the kingdom; but we are by no means deterred from this species of cultivation; and, when once we have escaped those hitherto unconquerable enemies—the fly and slug, we are in little

doubt of being amply rewarded for all our pains and expence in obtaining a crop of the Ruta Baga.

High-down, near Midhurst, Sussex, April 9, 1803.

I am, Sir, your humble servant,
WILLIAM COCKS.

ON THE ROTATION OF CROPS.

To the Editor of the Agricultural Magazine.

SIR,

I HAVE given the rotation of crops much consideration, and the result is a settled conviction, that on every description of soil the most valuable rule would be, *grow two green or root crops for one of corn.*

Agreeably to this system, suppose it was required to break up any old pasture and lay it down again improved, after it had yielded three crops of corn.

FIRST FOR A BARLEY SOIL.

First year.—Pare and burn the turf, plough the land, and sow turnips for sheep food.

Second year.—Sow wheat, as the land may happen to be got into good tilth during the month of February and till the middle of March, and on such parts of it as cannot be got ready so early, sow barley. As soon as possible after these crops are reaped, plough the land and sow it with winter tares.

Third year.—Mow the tares, and give them three or four times daily in racks, cribs, or cradles to sheep, on the land where they were grown, and as they are consumed, prepare the soil with all possible dispatch, and sow turnips for sheep food the following winter.

Fourth year.—Spring wheat, to be succeeded by autumn sown tares, the same as in the second year.

Fifth year.—Tares, to be succeeded by turnips, as in the third year.

Sixth year.—Barley, with much white clover, and a proper portion of Peacey's rye grass, and other grass seeds to continue.

SECONDLY, ON MEDIUM AND STRONG LOAM.

First year.—Pare and burn the turf, plough in the ashes, and sow turnips in rows made across the ridges; during the following winter, feed the whole, if the season favour the soil, or feed as many of them as the season and dryness of the soil will permit, then split and rot the residue of them on the land for manure, or cole may be cultivated in lieu of either the whole or a part of the turnips; and in the same manner for sheep food.

Second year.—Spring wheat, to be succeeded by winter tares, in the same manner as I have described for the second year on a barley soil.

Third year.—Fatten your flocks with the tares as before described, and as they are consumed prepare the soil, and sow either turnips or cole in rows across the ridges, to be served as mentioned the first year.

Fourth year.—Spring sown wheat, to be succeeded by winter tares, the same as in the second year.

Fifth year.—Tares, to be succeeded by turnips or cole, as in the third year.

Sixth year.—Barley, on so much of the land as may happen to be in fine tilth, and oats on the residue, with a large portion of white clover, some of Peacey's rye grass and other grasses to continue.

THIRDLY, THE UNIVERSAL ROTATION.

First year.—If the land be already in aration, fallow and manure it for turnips or cole; if it be in grass pare and burn the turf, plough in the ashes, and sow turnips or cole; in every case for being eaten on the land, when the season will permit, and by splitting, aided by frost, rot the remainder for manure.

Second year.—Spring sown wheat, to be succeeded by winter tares, in the manner described for the second year on a barley soil.

Third year.—Mow and serve the tares to sheep, and then prepare the soil according to its nature, in point of being dry or wet, either on the flat or in rows, and sow turnips or cole, to be eaten or rotted as aforesaid.

Fourth year.—Spring sown wheat, to be succeeded by winter tares, as in the second year.

Fifth year.—Cultivate the two green crops, and consume them on the land by sheep, as in the third year.

Sixth year.—Wheat sown in the spring, to be succeeded by tares in the autumn, as in the second and fourth years.

Seventh year.—The same as the fifth.

This succession of two green crops and one corn crop, may be continued for any length of time; the whole rotation consisting of three crops may be obtained every two years. On this system the land will always be clean and full of animal manure, capable of being laid down to grass at a moment's notice, or of being continued in aration for ever. One moiety of every farm, may, in this manner, annually bear corn for the sustenance of man, and the other moiety may bring to perfection two green crops, which will support herds of neat cattle and large flocks of sheep.

This system admits of being universally applied. It is capable of doubling the present agricultural produce, and that circumstance would certainly encrease the number of inhabitants in the same degree.

This rotation is the more valuable, as it admits of several variations without materially deranging the system. Thus for instance, potatoes might be planted occasionally in lieu of the turnips; and various plants of the cole or cabbage tribe might, at times be introduced, instead of either the winter tares or the turnips. Also variation might be created by occasionally adding clover after the corn, in which case the rotation would stand thus, the first year tares and turnips, the second year corn, and the third clover. The last is vastly superior to any rotation now in use, but it is very greatly inferior to the foregoing course of tares, turnips, or cole, and corn in two years.

I am, yours, truly,
JOHN MIDDLETON.

Lambeth, 11th May, 1803.

ON FINE WOOLLED SHEEP,

To the Editor of the Agricultural Magazine.

SIR,

FOR some time after the introduction of fine woolled sheep, it was predicted by those who were unfriendly to the measuse, that the quality of the wool would progressively decline, by reason of the change of climate, of pasture, and other circumstances. Experience however hath sufficiently demonstrated, that this ground is no longer tenable, as may more generally be known by inspecting the produce of his Majesty's and other flocks in this country, as well as by adverting to the several concurring reports on the subject from Denmark, Sweden, Saxony, France, &c.

Another objection succeeds to this, namely, that by extending the growth of clothing wool, coarse combing wools would be so considerably diminished as to injure, if not to endanger, the manufactures in which these are employed.

In reply, I understand it is pretty generally admitted, that should we be fortunate enough to produce a surplus of clothing wool, such surplus might be employed in the coarser articles of manufacture, and even with superior advantage.

Carrying the objection then to the utmost sketch of imagination, namely, that all the sheep in the united kingdom were displaced by substituting entirely a fine woolled race, it must follow, that we should have the produce of these alone to furnish the fabrics of the fine as well as of the coarse manufactures; and the consequence of this would seem to be that the prices would be brought nearly to an uniform standard of equality, and that eventually those prices might probably be, somewhat about the present general average of the kingdom; circumstances I should conceive by no means detrimental to the coarser kinds of manufacture, but certainly, in a high de-

gree tending to promote the extension of the finer manufactures, more especially in foreign trade.

But all this may be considered merely as an assumption scarcely possible to be verified in fact, supposing it practicable in its nature, for there is and ever will be a diversity of sentiment on the subject, sufficient to prevent any thing like a sudden, or very extensive alteration of system, nor is such an alteration by any means necessary.

I imagine the principle object of the advocates for the introduction of clothing wool sheep, is, that we might be enabled to produce within ourselves, a quantity of wool, answerable to that which we have hitherto been under the necessity of purchasing at foreign markets, whereby a million to a million and a half sterling annually might be saved to the country in the balance of trade; a consideration of some importance; but this is not all, our manufacturers would be more regularly and certainly supplied at all times, and more moderate and equitable prices, to say nothing of a variety of contingencies, now more than ever to be apprehended from the jealousy, the rivalship, and the ambition of foreigners, particularly of the French, who, sanctioned by the immediate patronage and encouragment of government, are actually extending the breed of Spanish sheep with all imaginable energy.

But introduce a number of fine woolled sheep equal to answer the present annual import of wool from foreigners would not probably require to displace more than one twentieth of the aggregate flocks of the united kingdom. Some Authors of acknowledged reputation in œconomical arethmetic, estimate the flocks in Great Britain alone to consist of 20 million.*

Now the wool of one million at 4 lb. per fleece, amounts to 4 million pounds weight, which may be taken to be somewhat about the average annual import from Spain; 4 lb. per fleece however is a moderate estimate, and intended so to be, for allowance of waste in scouring, &c. nor does the subject require fractional minutiæ. To notice another objection however that hath *sometimes* been started, namely, *admitting the quality to improve without degeneracy, yet that the quantity of wool would be greatly diminished,* I would beg leave just to remark, for the information of those who have not had the opportunity of experience, that the reverse is precisely the fact.

Spanish sheep carry a heavier weight of fleece in proportion to the weight of the carcase than any other, and by 3 or 4 repeated crossings with other sheep, the offsprings are brought to much about the same standard. For a general idea, the weight of the unwashed fleece might be reckoned at about 1-10th† of the

* See Communication to the Board of Agriculture, Vol. 1.

† I have now a wether sheep in my poſſeſſion, the unwaſhed fleece of which in the year 1801, weighed upwards of 9 lb. the living carcaſe, after clipping 62 lb.

weight of the carcase, but to what other breed may we look even for 1-14th?

I believe no instance can be adduced wherein by crossing with the Spanish, this increase hath not been observeable. I have known it to hold in the Ryeland, the Southdown, the Mendip, the Dorset, and the Wiltshire, and have now some lambs of the first cross from Welsh ewes, about which I can at present say nothing, but that I anticipate a similar result.

And remain Sir, your obedient servant,

Bath, May 13, 1803. NEHEMIAH BARTLEY.

ON THE IMPROVEMENT OF DOWN-LANDS.

To the Editor of the Agricultural Magazine.

SIR,

I BEG leave to offer my testimony in confirmation of the practice of your Correspondent whose signature is a Hill Farmer, in improving Down and other poor grass Land by giving it two successive turnip fallows, and then laying it down with seeds, without taking even one crop of corn from it. I can bear witness to the excellence of this practice, but it is not a singular or uncommon piece of husbandry, it is frequently adopted in my neighbourhood, which circumstance, I think, is a strong argument in its favor. And it is a method, too, used even by what are called downright plodding farmers, which is likewise, in my opinion, a powerful recommendation.

Lord Sherborne, who resides in the vicinity of Burford, and who is probably as good a judge, of what is beneficial or otherwise to land, as any in the island, seldom refuses permission to his tenants to adopt this species of husbandry, even on land, concerning which it is stipulated by lease, "that it shall never be broken up." In the year 1800, his Lordship advanced one step farther than the indulgence here specified, under the severe pressure which then prevailed from the great scarcity of grain, he was induced to comply with the request of at least one of his tenants at Aldsworth, who offered a pound per acre in addition to the usual rent of his land, to be permitted to take one crop of barley after two crops of turnips, and then to lay the land down with seeds.

The result of this permission was an excellent crop of barley, or four quarters to an acre, on land which was not capable of supporting two sheep upon an acre before it was brought under the present mode of culture. The crop of seeds, namely, rye grass and broad-clover, which succeeded the crop of barley, was very early, (which is a consideration in a barren and hilly country of the first importance,) and was very luxuriant, and it still retains these qualities in an astonishing

degree, particularly with respect to the rye grass, and the land promises never to revert to its former state of poverty.

Mr. Peacey, late of Northleach, to whom this country is very much indebted, was the first, I believe, who pursued this method of "making poor land rich," in this part of the kingdom, and which appears to me far more likely to prove of general utility than the system recommended by your earnest Correspondent Wheat ⋊ Sheaf.

Hints respecting the above mode of improving barren land cannot be too widely circulated, for we have thousands of acres which might thus be made productive which are now almost useless; and if you can make yourself instrumental in the diffusion of the knowledge of this, you will lay an additional obligation on the public at large, and on an individual

OXFORDSHIRE FARMER.

ON CHEESE MAKING, &c.

To the Editor of the Agricultural Magazine.

Sir,

I AGREE with your Correspondent Verax, in his general principle, as expressed in your Number for January last, page 26, that the quality of cheese is more dependent on the skill of the manufacturer than on the species of food on which the cattle subsist which produces that cheese. And in corroboration of his opinion, I can say, that I knew, a few years ago, an excellent dairy-woman who had constantly resided in, and had learnt the art of cheese making solely from what she saw in Warwickshire, in which county perhaps as little skill in cheese making and as bad cheese is to be met with as in any part of England, who, when she had changed her situation, and was become a resident in the county of Gloucester, where this art professedly exists in high perfection, immediately excelled in the manufactory of Gloucester cheese as much as she had done in that of the former county. And the same care and patient attention which enabled her to excel in one district, would probably have had a similar effect in every other part of the kingdom.

I allow that every species of cheese which we eat may be made from one and the same kind of milk, or from the same land, and in full perfection when a complete knowledge of the different processes is not wanting: but I cannot allow, however, that the quality of cheese is not affected by the quality of the land. There are in every dairy district, with which I am aquainted, certain tracts of land which require a much greater degree of skill and care than other portions of pasture want to make cheese of a good quality from them. Nay, I know certain pastures, in different counties, from

which it has hitherto been found impracticable to make palatable cheese or butter, even by the most skilful dairy women. And this land, although excellent for every other purpose of the husbandman, no change of culture, no change of grasses, has been effectual to render safe and serviceable as dairy land.

I have known certain inclosures, in three different dairy counties, from which various experienced dairy women have attempted in vain to make palatable cheese and butter. The peculiar rancid flavour with which the cheese was tainted, which had been made whilst these particular grounds were under pasture, was discoverable even in the succeeding year. This unpropitious property of certain land I suppose it was that Mr. Knight meant when he used the seemingly contradictory expressions recited by Verax, namely, "I do not know any article more affected by the pasture than cheese, both in quantity and quality:" and again, "I have no reason to suppose the quality of the cheese, or its quantity, depended on the kind of plants." That is, I imagine, he meant to say that more depended upon the nature of the land in cheese making, either with respect to quality or quantity than on the kind of grasses with which it was planted. Or that it was the property of certain land to be productive in quantity of cheese with whatever it was planted, and that other certain portions of land would never produce this article of a good quality whatever might be its herbage.

But I would much rather see an explanation of his own words from Mr. Knight himself, for I am persuaded, from the conversation which I had with him at the late public, liberal, and truly patriotic entertainment, given by Lord Somerville, that he is peculiarly well calculated to unravel any knotty point that can fall within the range of agricultural science. I fear Mr. Knight has not yet seen your Magazine.

Your Correspondent, afterwards, makes, what appears to me a very extraordinary remark respecting oxen. "Mr. Knight," says he, "only notices the Sussex or Devon Cattle, as entering into competition with the Herefordshire. There is another breed that I suppose he is ignorant of, I mean the Pembrokeshire blacks, which, if butchers, or those who work cattle, may be credited, is at least equal to those he has mentioned."

I beg leave here to observe, that there is another class of men to be consulted in this matter besides "butchers and those who work oxen;" the fancy or judgment of the grazier should be at least equally consulted by the breeder of oxen, with the above named persons. And if the grazier will invariably give five pounds more per head for oxen of the Herefordshire, Sussex, and Devonshire breeds than for the Pembrokeshire blacks,

surely the breeder ought and will pay due attention to this decided preference of the grazier. But besides this, in general both the butcher, and the person who works oxen, entertain the same predilection, and no doubt their opinion is formed on the ground of absolute merit.

Had your Correspondent Verax, or any Pembrokeshire Gentleman, risen to accept the challenge of Mr. Knight, when he offered at Lord Somerville's Meeting, to shew ten Herefordshire oxen against ten of any other breed in the kingdom, a certain smile of astonishment would immediately have occupied every countenance in the room.

We shall be told, in the next place probably, that the Glamorganshire breed (and I have heard this once positively asserted) "is at least equal in merit to any of the above-mentioned breeds:" and that the yoke of Glamorgans lately exhibited in Langhorn's yard, by Mr. Waters, were more valuable than any yoke of Herefords or Devons there shewn, because they so much exceeded any of their competitors in length of leg and enormity of bone.

Yours, T. WESTON.

ON FATTENING OF SWINE.

To the Editor of the Agricultural Magazine.

SIR,

I CANNOT subscribe to the doctrine of your Correspondent, the Oxonian, which appears in your last Magazine, page 276, that cleanliness is no necessary part of the process in fattoning of swine.

From what I have seen of the habits of this animal, I am strongly inclined to agree implicitly with the opinion and assertion of Mr. Saunders on this point, as stated in a former Number of your Publication. For I have almost invariably observed swine carefully reserving a certain part of their habitation as a place of rest, which they have studiously kept free from every species of defilement. And I am convinced that they will never fatten well when they have it not in their power to make such a reservation. The hog is frequently seen carrying straw and other dry materials, in order to form his bed, with a degree of sagacity and method scarcely ever to be discovered in other brute animals.

The hog, which has plenty of food allotted him, will never search for it in mire and dirt: it is merely the want of a sufficiency to satisfy his voracious appetite, and a strong desire which he feels to obtain the roots of certain vegetables, which induce him to explore, and turn up moist and wet soil. Place before him, when in a fattening state, clear spring water, and likewise that which is muddy, and you will never see him quench his thirst with the muddy water.

But I shall confront the authority, which your Correspondent has given us with authority, certainly more weighty than that of Varro. I shall introduce to you Columella, a Roman, manifestly wiser, in the science of agriculture, than the "wise Roman" whom the Oxonian has brought forward as his advocate. Columella wrote later than Varro, and, of course, had his knowledge to improve upon, and it appears that he had read him attentively, and has evidently shewn himself, at least, a more practical agricultural writer than Varro.

Columella, in his book De Re Rustica, in treating on the management of swine, says, "but let a diligent swineherd sweep frequently that part of the stye in which the swine are fed, and oftner that part in which they sleep. For although the aforesaid animal is a foul feeder, yet he delights in a very clean bed."

But after the example of your Correspondent, and for the same reason, I shall send you the original latin, as follows:

"Diligens autem porculator frequenter suile converrat, et sæpius haras. Nam quamvis prædictum animal in pabulationem spurce versetur, mundissimum tamen cubile desiderat."

I beg leave to introduce other authority, of a more modern date, of similar import with the above, which may be found in Mr. Cruttwell's Dictionary of Husbandry, (under the word Hog,) published 1779, which is thus expressed: "When hogs are to be fatted in the stye, cleanliness is a very great article. Their food must be fresh and good, they must have as much fresh and sweet water as they chuse to drink."

I am your humble servant,

A CANTAB.

ON CLOVER.

To the Editor of the Agricultural Magazine.

SIR,

AS Clover is a very good and perhaps the best artificial grass we have in the whole island, on account of its affording two good crops; and particularly on account of its being the best of all preparations for wheat, I should esteem it as a favour if any of your Correspondents, by means of your useful Miscellany, can inform me the cause of its dying away in the spring or winter season. After being a full plant at Michaelmas, it is frequently all gone or nearly so by May. If any one can give the reason of its so failing, and above all, a method to prevent it, they will well deserve the thanks of all ranks of Farmers, as well as the public in general, for we should certainly be able to grow more hay and wheat, for if clover does well we are certain our wheats after them do as well, and where our clover fails our wheat never does well.

Therefore it would be a national benefit, could we obtain such information as requested above. According to our method of farming, clover comes in course to be sown once every four years, or by some five years, but if we were to sow it so often as that, we should never have any, we therefore substitute trefoil every other time, and sow clover only once in eight or ten years, and then a great part of it frequently fails.

I can but admire the curious account your Correspondent, Mr. Peter Hall, gives of his sheep feeding off his turnips, I supposed he was the first person that ever attempted to feed turnips off upon strong wet land, as the stock are certain to do more harm to the land than the turnips were worth, such kind of land every farmer knows ought never to be trod upon if possible in the winter, but on the other hand, if he has any light dry land, he cannot pursue a better system, nor perhaps one so good.

In your Number for March, you have a new Correspondent who has used my signature (A Norfolk Farmer,) he resides near Holkham, he says, I live in the opposite part of the county, not far from Suffolk, and shall still subscribe myself,

Your humble servant,

May 19, 1803. A NORFOLK FARMER.

ON AGRICULTURAL LECTURES.

To the Editor of the Agricultural Magazine.

SIR,

I Live at a considerable distance from London, occupied chiefly in *practical* husbandry, but I am likewise desirous of learning what is agitated in the theoretical departments of agriculture, and wish, by means of theory, to improve, and, as far as may be, perfect our practice. The Metropolis is the quarter from whence we have reason to expect speculative information in its greatest purity: for your great city abounds in Agricultural Boards, Societies, and Exhibitions: and almost every institution, invention, and speculation, which promises utility to individuals or the community, meets ample encouragement.

I wish to ask you, or your readers, whether the very handsome, and very promising proposals which I heard made by a very intelligent gentleman, at Lord Somerville's Public Dinner, Mr. Nicholls, of Castleman House, near Maidenhead, have been favourably received and carried into execution? I hope I shall receive an answer in the affirmative, for surely it was a very liberal offer in Mr. Nicholls to undertake to give a course of Lectures on Agriculture, and to give practical instructions in the use of various implements of husbandry, and this entirely gratuitously. I am, yours,

RUSTICUS.

A TABLE FOR SHEWING ALL THE DIFFERENT MEASURES, BY WHICH QUANTITIES OF LAND ARE CALCULATED.

Explanation of the Table.

BY referring to the table, all the different measures, by which quantities of land are calculated may be seen; and how often one is contained in another, either in long or square measure; and this by the plainest, easiest, and most intelligible method.

Having found the two titles, the eye is to be directed in a straight line till the two lines meet in one centre: in one way it discovers the number of the less measure in the greater, in long measure; in the other way, in square measure: thus for example: In a mile long, there are 1760 yards. In a mile square, there are 3,097,600 square yards.

Nothing can be more simple than this method, as must be very apparent from the slightest attention to the plate; and it cannot fail being very useful in the admeasurement of land, as it will serve by way of artificial memory, and greatly abridge the calculations.

Square.

Inch.	792	12	36	60	198	792	7,920	7,92	3,360
62,726	Link.	1,515	456	7,575	25	100	1,000	1,000	8,000
144	2,295	Foot.	3	5	165	66	660	66	5,280
1,296	20,755	9	Yard.	166	55	22	220	22	1,760
3,600	57,381	25	2,778	Pace.	33	132	232	132	1,056
39,204	625	27,225	3,025	1,089	Pole.	4	40	40	320
627,264	10,000	4,356	484	17,424	16	Chain.	10	10	80
1,568,160	25,000	10,890	1,210	4,356	40	25	Rood.	1	8
6,272,640	100,000	43,560	4,840	17,424	160	10	4	Acre.	8
4015,489,600	64,000,000	27,878,400	3,097,600	1,115,136	102,400	6,400	2,560	640	Mile.

ACCUSATION OF PLAGIARISM ON PRESERVING TURNIPS FROM THE FLY.

To the Editor of the Agricultural Magazine.

SIR,

AS Purchaser of your Magazine from its commencement, I embrace with pleasure every opportunity of testifying the satisfaction I have in general received from its perusal. It was a work much wanted; made its appearance under favourable auspices, and has been carried on with a degree of spirit and attention, which will render it a valuable addition to our catalogue of agricultural writings. That it may long maintain its reputation is my sincere wish both upon public grounds, as well as the more selfish one of private individual satisfaction.

With a view to promote this great object, as far as is in my power, I shall assume the painful office of a censor, and venture to notice a very gross attempt at imposition on yourself and the public, in your 43d Number; an attempt, which, if not duly animadverted on, and properly exposed, by weakening our faith with respect to the authenticity of those papers which are communicated to us as original, must ultimately tend to depreciate the credit of your work.

In page 107 of the Number above alluded to, is inserted a letter signed R. Weston, Secretary to the Leicester Agricultural Society, containing an account of a method of preserving turnips from the fly; and stated as having been communicated to him from Norfolk. If that letter be, by the public to be considered, the production of him whose signature it bears, either Mr. Weston has become the dupe of imposture, or, daw-like, has endeavoured to deck himself in borrowed feathers. If the latter, justice to the public and justice to yourself, if you duly consider the degree of responsibility for which you stand pledged, require that such an attempt be not allowed to pass unnoticed; if the former (which I most sincerely wish may be the case,) I shall have no doubt but that I shall be entitled to his very sincere thanks for having afforded him the opportunity of resuming his fair fame from the disgraceful ignominy of having been "The retailer of old rags."

In order, as much as possible to facilitate this end; and that I may not be accused of bringing forward a frivolous, unsubstantiated charge, I shall beg leave to refer Mr. Weston and the public, to page 235 of the Second Volume of a work of some celebrity, entitled "The Bath Society's Papers, published in the year 1783. In them will be found almost verbatim the whole of Mr. Weston's Letter. I say *almost* the whole, because some little modifications, some necessary adap-

tations to the present publication, and to the present period, have most undoubtedly taken place. It may not be amiss to touch upon these *slight deviations*. The above-mentioned in Mr. Weston's communication when the three acres of land were tilled in the usual way for turnips, but without manure, is, the year 1797. The collection of the Bath Papers state it in the year 1776. The two subsequent years of the repetition of the experiment are not specified in Mr. Weston's Letter, but from the context can be no other than the years 1798 and 1799. The Bath Papers plainly and unequivocally record the same in the years 1778 and 1779. I shall not dwell upon the other parts of the letter, but only beg leave to remark, that such is the similarity, *totidem verbis*, and *totidem sententiis*, as to leave no doubt but the one was a mere translation of the other.

What degree of reprobation the public may think proper to attach to such attempt, I must leave them to apportion; this letter will speak my sentiments; and I trust your ready insertion of it will unequivocally evince the little share you have had in the deceptive part of the transaction.

I have the honor to be,

Sir,

Your obedient servant,

May 22, 1803. PHILALETHES.

METHOD OF DESTROYING CATERPILLARS ON APPLE-TREES.

To the Editor of the Agricultural Magazine.

Sir,

In the months of May and June, apple-trees are frequently attacked with caterpillars, which cause much damage in eating the leaves; and, for want of the nourishment imbibed by them from dews and rains, cause the fruit to drop off, if not stopped in time.

Examine the trees frequently, and as soon as the caterpillars appear, attack them while in their infantine state, before they have done much mischief, for then they are easily destroyed.

Make a fire with weeds, damp straw, or any thing of that nature, which will cause a slow smoke to ascend through the trees; and you must be governed in the making it, according to the wind. If a tree be very large, more than one fire will be necessary; and if there be plenty of fern in your neighbourhood, the ashes will prove a profit.

In a short time you will see the caterpillars suspended by a thread, and they will soon fall to the ground, where they may be readily killed by trampling on them, or having a few ducks to eat them.

If the leaves be very much eaten, before you discover them, it will be proper to water the tree very well with an engine, for no fruit-garden ought to be without one, and the ground also, to cause a fresh vegetation; and if with the draining from a dunghill, the better.

These caterpillars are produced from butterflies laying their eggs in autumn, hatching in September, and forming a web for their protection during the winter; about May and June, when the apple-trees have produced leaves for their food, they come forth.

Whenever you see any of these webs, they should be cut off and burnt. In some seasons great numbers will be found on hawthorn-hedges, especially if clipped.

R. WESTON.

AN ENQUIRY WHETHER BULLFINCHES EAT THE BUDS OF CHERRY AND PLUMB TREES.

To the Editor of the Agricultural Magazine.

SIR,

THERE is a question not yet ascertained, in regard to the buds of cherry and plumb trees frequently dropping, and may be gathered up from under the trees in large quantities, what is the true cause?

By many it is attributed to bull-finches, and various other small birds, who are seen in the trees at that season, and the birds are endeavoured to be destroyed. I would wish this to be cleared up, for I think the birds are friends instead of enemies.

On examining the buds, you will find them perforated with a small hole, and the inside eaten out: this I attribute to an insect, and that the birds come there to feed on them.

To investigate this properly, shoot some of the birds, or catch them with bird-lime; examine the craws: if sound whole buds be found in them, the birds are guilty; but if there be insects, or buds with insects in them, it is a proof that the birds are your friends, and you should protect, instead of destroying them; and I hope some of your correspondents will endeavour to prove which are the aggressors.

R. WESTON.

ON DRAINING AND WATERING.

(Continued from page 250.)

1. IN respect to draining those plains or morasses where no fall can be had, the water may in many situations be caught by cutting a long horizontal ditch into the adjoining mountain perpendicular to the inclined plane, which constitutes the side of the mountain, above the level of the morass, so as to intercept all the wall-springs; and may then be conveyed away in wooden troughs or hollow bricks, above the surface; and if some water still finds its way into the morass, this less quantity may be conducted to one extremity of the ground in open drains or covered soughs, and raised by an horizontal windmill and centrifugal pump, and thus the morass may be converted into soil of the most productive kind.

2. There may be other situations, as in the Peak of Derbyshire, where pools of water, or morasses, are collected on the hollow summits of hills; which have been the craters of volcanoes in the primeval ages of the world, as Elden-hole near Castleton, which seems to have been the shaft of such a volcano. In many of these basons on the summits of hills there still exist what are called "Swallows," or cavities; where the water sinks into the earth, as it collects, to pass to some distant valley, as Elden-hole above mentioned, and as in the channels of the rivers Hamps and Manifold, between Ashbourn and Leek. In others, as at the summit of a steep promontory called Axedge, near Buxton, and about Broke-house, are unfathomed morasses, which are said in some places not to bear a sheep to pass over them; and that on the more tenacious parts of them it is necessary for the adventurer to step from tassock to tassock, or to carry a long pole horizontally in his hand, like those who skaite upon suspected ice, to prevent his sinking over head, if he should chance to sink at all.

It is probable, that by sinking a well, or boring a hole, where such morasses or lakes now exist, into the obstructed shaft of the ancient Volcano, the water might be let off from those eminent morasses, at less expence than by excavating a passage for it some miles in a country of marble.

3. It is possible there may be situations in high countries of marble, or granite, or quartz, where the difficulty and expence of excavating the ground may be too great, as above; in which a syphon might be contrived for the purpose of raising the water from a morass or lake, and conveying it away. Such an instrument might be constructed of bored Riga deals; but as air is liable to collect in the summit of a syphon from the water, which passes through it, it would be necessary to fix at the summit an air-vessel with an air-pump at the top of it;

which might be moved by a very small horizontal windmill sail, or occasionally by the hand of a labourer for a few minutes perhaps once or twice a day.

4. The draining of those large plains, which lie beneath the level of the sea, is a subject, which belongs to the public, rather than to the individual farmer; and is practised near Linn on the river Cam by locks to keep out the tide, and by windmills to lift or forward the otherwise stagnate water in the fen-dikes. These windmills have vertical sails of the common kind, which move a vertical water-wheel, by which the water is raised a foot or two; but it is probable even this might be done better by the horizontal sail and centrifugal pump, as being a simpler machine, and requiring no attention to turn it to the wind.

It might be a noble work, worthy the attention of a government, that wished to increase the quantity of nutriment, and consequent population and happiness of the country, to employ proper engineers with a number of labourers to environ with ditches every morassy district of whatever extent, which lies beneath the level of the tides, as the fens of Lincolnshire and Cambridgeshire. These ditches should be cut at the feet of the adjacent rising grounds, or of eminences surrounded with fens, like islands in a lake, so as to intercept the wall-springs and land floods, and convey the water thus collected above the level of the morass into the ocean.

But this, it is feared, is an effort not to be expected in the present times, when the enclosure of forests and large commons is prevented by the interest of individuals, or by the difficulty of procuring expensive acts of parliament for every minute district, instead of including them in a general act, so meritoriously contended for by Sir John Sinclair, then President of the Board of Agriculture.

5. Where finally the draining of marshy grounds can not be effected at a responsible expence, some plants may perhaps be cultivated with profit to the cultivator; as in some situations the festuca fluitans, floating fesque, callitriche, star-grass; or in others the orchis for the purpose of making saloop, by drying the peeled roots in an oven. This might be better worth notice, if the seed could be ripened in this climate for its easier propagation, which probably may be accomplished either by cutting away the new root, as is affirmed in the Amœnitates Academicæ; or by planting them in a garden-pot so as to confine the roots in respect to space, which is said in the same work to ripen the seeds of convallaria, lily of the valley; and lastly, by cultivating a few on a hot-bed, or in a green-house.

In other situations the menyanthes, bog-bean, would flourish abundantly, and might become a substitute for hops in the

brewery, and be equally wholesome and palatable. It is indeed much to be lamented, that we have no grain similar to rice, that will grow in watery grounds in this cold climate, nor any esculent roots or foliage except the water-cress. There is reason to believe nevertheless, that the roots of nymphæa, water-lily, or of butomus, flowering-rush, may be esculent by simple boiling; or that a wholesome starch might be obtained from them; or lastly, that they might be fermentable into ardent spirit, like the roots of potatoes, or into vinegar.

The nymphæa nelumbo is much cultivated in China in their swampy grounds, and in their lakes. The seed is like an acorn, and of a taste more delicate than that of almonds. The roots are sliced and served with ice in summer at their tables; and are preserved in salt and vinegar for the winter. Embassy to China by Sir G. Staunton, Vol. III. p. 214, 8vo. edit. The nymphæa alba of our country produces a root of three or four inches in diameter; and though the seed is very small, and perhaps does not perfectly ripen, it has been observed to be agreeable to the palate both in its recent state, and when dry.

If these should not succeed, other quick-growing plants might be cultivated for manures, as typha, cat's-tail, caltha, and others; which should be mowed twice a year, while they are young, and in consequence abound with saccharine and mucilaginous matter ready to pass into fermentation.

The advantages resulting from occasionally covering lands with water have long been experienced in warmer countries, as in Egypt, Italy, and many parts of China; and have of late years been introduced into our own more northern climates. And in the warm climates above mentioned, it is particularly useful in the cultivation of rice for the purpose perhaps of simply moistening the ground.

But the advantages of flooding meadow-lands in this country may be divided principally into three kinds, one of which consists in simply moistening them, which seems to be the principal use of watering lands in warm countries, where the water is derived to them almost every evening from reservoirs above them, or from water-wheels worked by asses, and which is sometimes done in the gardens of this country by watering pans and human labour.

The second and greater advantage of flooding lands in this climate consists in deriving much water over them from rivers or from strong springs, and thus by supplying them with the muddy sediment brought down by rivers, after sudden rains, or with the calcareous earth dissolved in many springs. All those springs, which pass through marl, or chalk, or other lime-stone, are replete with calcareous earth; which they hold in solution, as those about Derby and about Matlock, which earth they deposit on standing on the soil, or in slowly

trickling over it. And river water in rainy seasons is loaded with diffused as well as with dissolved materials from the neighbouring country.

Both these therefore are of great service in flooding meadow-lands, and perhaps almost all other lands. But those springs, which pass only through siliceous sandstone, as those at Litchfield in Staffordshire, have no calcareous earth dissolved in them, as it has been found by experiment; and the water of most rivers, when they are not swelled by rain, are also too pure for this purpose; as they have deposited already in their course the calcareous earth, which might abound in the springs, which feed them; as it has been observed by experiments on the water of the Derwent at Derby, which though it runs for many miles about Matlock through a bed of limestone, yet when clear of mud from rains, it contains no calcareous earth, as it passes by Derby, though the springs in the vicinity are replete with it. Neither of these sources of water can therefore do much service for this second design of depositing limestone, or mud.

The third advantage of flooding lands in this climate is for the purpose of defending them from the cold of the winter or vernal months. For this advantage the water from strong springs, which are always at 48 degrees of Farenheit in this country, is preferable to river water, where it can be had in sufficient quantity; since the water of rivers is of the same degree of cold as the atmosphere, till the thermometer sinks to 32. But both of them, when they form a sheet of thin ice, as they cover a meadow, defend the roots of the grass from severer degrees of cold; which are thus preserved, and those of some grasses are believed even to vegetate beneath the ice, as the rein-deer moss in Siberia vegetates beneath the snow in a degree of heat about 40, which is the medium between that of the under surface of the thawing snow, which is 32; and that of the common heat of the interior parts of the earth, which is 48; and thus the crops of grass in this cold climate may be wonderfully forwarded; so as almost to double the product of the year, if well managed and carefully attended to.

The method of forming the channels to convey the water consists in carrying the first or principal aqueduct along the highest part of the meadow, and deriving others on the summits of the lands; if the meadow has formerly been ploughed into ridges and furrows, these again are to be divaricated so to pass into the furrows; all these branches of the stream are again to be collected from the furrows, and discharged at the lowest part of the surface.

Something similar to this must be managed on more level grounds, so as to conduct the water over the whole meadow, and also to carry it off, that it may not stagnate; but that a moving sheet of water about an inch in depth may continually

flow over the whole for the purpose of depositing the materials dissolved or diffused in it. The construction and width of these channels, with many useful observations, are shewn in a pamphlet of Mr. T. Wright, on "the Art of Floating Land in Gloucestershire."

Mr. Wright in the treatise above mentioned advises, that the aftermath of grass-land should be eaten off bare by the beginning of November, and that the channels for conducting the water to and from the meadows should be then cleansed and repaired; and that the water should be suffered to flow over the meadow for three weeks; and that then the land ought to be exposed to the air for a few days; since some of the grasses, and those of the most nutritive kinds, he believes will not much longer exist under water. By this early preparation, he adds, that advantage is taken of the autumnal floods, which bring along with them a greater quantity of putrescent matter than those of winter.

In the months of December and January Mr. Wright adds, that the chief care of the floater consists in keeping the land sheltered by the water from the severity of frosty nights; but advises through the whole of these months every ten or fourteen days to expose the land to the air by laying it as dry as possible for a few days; and always to discontinue the flooding, when the land is covered with a sheet of ice.

In the month of February greater attention is required; if the water be suffered to flow over the meadow for the space of many days without intermission, a white scum is generated, and the grass is much injured. And he justly observes that, if you now take off the water, and expose the land in its wet state to a severe frosty night, a great part of the grass will be cut off.

Mr. Wright adds, that in Gloucestershire two methods of avoiding these injuries are practised: one is to take off the water by day to prevent the production of the scum, and to turn it over again at night to guard against the frost. The other is to take off the water early in the morning; and, if the day be dry, to suffer it to remain off a few days and nights; for if the land experiences only one drying day, the frost at night will do little injury. But the former of these practices, where it can be easily done, he thinks preferable to the latter.

In the beginning of March the grass on well-flooded meadows will generally be so forward, as to afford abundant pasturage, and the water should be taken off for about a week, that the land may become dry and firm; and the cattle should for the first week be allowed a little hay in the evening, if the weather be cold and rainy.

In the month of April the grass may be eaten off quite short and close, but not later; since if you trespass but one

week in the month of May, the crop of hay, which is to succeed, will be much impaired; and the grass will become soft and woolly, and the hay have the appearance of lattermath hay, and be less valuable.

At the beginning of the month of May the water is again thrown over the meadows for a few days; which simply by moistening the land will in most seasons, Mr. Wright observes, ensure a crop of hay of one ton and a half on an acre in the course of six or seven weeks.

The water is sometimes again used, when the hay is carried off, but may render the latternath, he thinks, unwholesome to sheep. But this is particularly serviceable, when the water is rendered turbid by sudden rains. Some have taken off two hay-crops in one year, but this Mr. Wright thinks is imprudent in this climate; which, however, I suppose might be accomplished, where the first growth is not eaten in April, and where much turbid river water or calcareous spring water can be used between them.

Mr. Wright further observes, that the hay on these flooded meadows is little inferior to upland hay, if it be cut at its proper age; but that some avaricious farmers have permitted it to remain uncut till it produces three tons on an acre, and that then it will become long and coarse, and little better than straw. But that when it is cut in June, and has been flooded well with muddy water in the winter, that it becomes little inferior to the best upland hay.

The hay, I should suppose, which is cut before the grass is in full flower, while the saccharine juice still remains in part at the joints of the flower-stems, must contain the most nutritious matter; which is afterwards absorbed as the flower expands, and as the seed ripens, and forms the meal or starch of the seed-lobe, and is shed upon the ground, or consumed by birds, and the grass-stems and their leaves become simply like the straw of ripened corn.

This will appear of more importance to any one, who attends to the difference of the pods or husks of peas, or of kidney beans, during the early state of the enclosed seeds, and again after the seeds become ripe. The pod or capsule is at first sweet and mucilaginous, so as to supply an agreeable and nutritive food, the latter of which, and sometimes the former, are eaten at our tables, afterwards as the seeds, which are attached alternately to each side of the capsule, drink up by their vegetable life after impregnation the saccharine and mucilaginous matters there purposely deposited for them; the capsule itself becomes a mere fibrous membrane not better than the straw of ripe grains above mentioned.

It may be here repeated, that one great use in this country of flooding grass-grounds, in winter, and in early spring, so

as to let a thin sheet of water perpetually flow slowly over them, is, that it will in frosty nights, when the cold is not much below the freezing point, produce a thin sheet of ice, and thus prevent the cold from affecting the roots of the grass beneath it; which may thus be two or three weeks forwarder than on other lands; for ice is so bad a conductor of heat, that water is not readily frozen beneath it; and especially if it stands hollow, so as to enclose a stratum of air between itself and the water beneath.

This seems to have been attended to by the philosophers in the French army, when they passed over ice to subdue Holland; fearing least the ice should be too weak for the passage of their troops and artillery, they bored many holes through it every night; and then by pressure on its surface the water was made to rise through these holes, so as to stand an inch above the surface; which being thus exposed to the cold air of the night, become frozen before morning; and thus in a few nights thickened and strengthened the ice ten times more than would have been done naturally by the slower freezing beneath it.

To recapitulate the advantages of flooding, first, not only the common meadow grounds are enriched, but morassy ones are consolidated, by the mud brought over them from river water; or the calcareous sediment, and azotic or nitrogen air, from most spring waters, during those seasons when grass does not naturally make much progress in its growth. 2. They are defended from frost by the flowing water, or by the ice, when it is frozen; and thus a much forwarder crop of grass is produced, as may frequently be seen over pieces of ground naturally moist; which look green in the spring, some weeks before that on drier land in their vicinity. 3. The ground is rendered more easily penetrable by the roots of grass, both by its being kept softer, and also from its being seldomer frozen below the surface in the vernal months. 4. This early crop may be eaten off by cattle or sheep, and a new flooding for a short time will forward the growth of it so as to produce a good crop of hay. 5. After the hay is removed another flooding for a short time ensures a luxuriant growth of autumnal grass, or aftermath.

The difficulty of getting moist lands free from rushes is said to be readily overcome by flooding them, and that especially after previously mowing them, as their spongy pith will then absorb so much water, as to cause them to putrify by its stagnation; or if this be done in autumn or spring, and a frost supervenes, the water in their pith by expanding, as it becomes ice, bursts and destroys their organic structure.

The following conclusion is copied from Parkinson's Experienced Farmer. "Upon the whole, artificial watering of

meadows is a most profitable improvement; it robs no dung-hill, but raises one for the benefit of other lands; for if a farmer can water ten acres of land, cut the grass and use it either in the stall or fold-feeding, he might keep perhaps forty beasts; and by working the manure made by them into a compost, and applying that compost to other lands, he might either have a great deal more hay for the winter, or feed more cattle in the summer."

Two or three observations of importance should be here inserted. 1. That in flooding lands for a considerable time, the water should only trickle over them from the canal, which leads it along the more elevated parts, and not stand on it like a fish-pond; as in the latter case the grass root will perish in a few weeks in the early spring, to the great injury of the farmer, an example of which on several acres I once witnessed.

As soon as any materials thus begin to putrefy beneath the water, a scum of white froth arises owing to the air set at liberty by putrefaction; which is supposed by some to injure the grass, whereas it is a consequence rather than a cause of injury, and shews, that the water has stagnated too long; and should either be immediately drawn off, or supplied by a running stream; but the former should probably be preferred: if the stems of grass are so tall as to rise above the running water, it is probable, that their death and putrefaction do not so soon occur.

Secondly. It is observed by gardeners, that in dry seasons, if you begin to water any kinds of plants, you must continue to repeat it; otherwise that they are sooner injured by dry weather, than those which have not been watered. This fact also I think I have observed, and it may depend on the circumstance of the roots of annual vegetables shooting themselves lower down in dry seasons in search of moisture; but if this be given them in the commencement of their growth, they then shoot their roots more horizontally, and are afterwards in consequence sooner destroyed by the subsequent dry weather.

Thirdly. Much cold water given suddenly to plants, which were nearly perishing with heat and dryness, will I believe sometimes injure or destroy them, as I saw occur this year, 1798, in June to some rows of garden beans; which after being flooded for one night withered, and in part died, on the following day, which was probably caused, not by the excess of water, as plants of this genus would seem to bear much moisture from an experiment of Lord Kaimes, who says in the Gentleman Farmer, that he planted a pea on some cotton-wool spread on water in a phial, and that it sprung up, and shot roots through the cotton-wool into the water, and produced large pods full of ripe seeds. The death of these

beans was more probably occasioned by the torpor of the system induced by cold, as occurs to those who have injudiciously drank much cold water, or plunged into a cold bath, when they have been previously much weakened by the unnecessary activity of the system occasioned by continued heat, or great exercise.

Nor is there reason to suppose that to whatever extent this mode of cultivation of grass could be carried in this country, that any injurious effects in respect to the health of the inhabitants could be produced; as this mode of flooding is not by stagnant water, as in rice grounds, which D. A. J. Cavenilles, who has lately published a work on the cultivation of rice in the kingdom of Valencia, believes to be injurious to the health of the inhabitants. Magaz. Enclyclop. T. 3.

In these cold climates, the vicinity of running streams may perhaps be rather salubrious than the contrary; as the air is cooled in hot weather, and warmed in cold weather, by its contact with their ever-changing surfaces, till they become frozen. I at this moment recollect many, who lived to an healthy old age in the valley of the Trent, near the very edge of the water, whose names I could repeat. But stagnant waters, from which putrid exhalations arise, produce agues in cold countries, as in the fens of Lincolnshire; and putrid fevers in hot ones; from which our armies suffered so much at St. Lucia, both in the present and the last war.

This practice of flooding is capable of being extended to a wonderful degree in this country, not only by using the natural falls of brooks and springs, and by occasionally damming them up to supply higher situations; and by effectually spreading the land-floods from accidental showers over the inferior lands to a great extent. The water, which is dammed up to supply the numerous mills, might be diffused in rills over a thousand meadows, or part of it be raised up by pumps to higher grounds; and thus fertilize and enrich the country; while the grinding of corn, spinning of cotton, rolling iron bars, and other mechanic purposes, might be effected by wind-mills, or steam-engines, in almost every part of the island.

For this purpose likewise the new method of raising water by the *vis inertiæ* or acquired *momentum* of moving streams might be well applied, which was formerly used by Mr. Whitehurst, of Derby, on a small scale, at Oulton, in Cheshire, as described with a plate of the machine, to which an air-vessel is ingeniously added, in the Philosophical Transactions for the year 1775, Vol. LXV. p. 277, and which is now adapted to variety of ingenious machinery by M. Boulton, Esq. of Soho, near Birmingham.

For the Agricultural Magazine.

We have just received the very able speech delivered by Lord Carrington at the Board of Agriculture on Tuesday, March 15, 1803, on his Lordship's resignation of the high and important office of President of the Board. As this Speech is replete with matter of general interest, as it gives a clearer illustration of the design, the scope, and utility of the institution, than has hitherto appeared before the public, and as at the same time, it contains a full explanation and vindication of certain parts of the conduct of the Board which have of late fallen under a degree of censure, we shall not content ourselves with giving a partial detail of its substance, but we feel it a duty which we owe to the Board, to our readers, and to the community, to lay it bef re them, literatim and entire. Editors.

THE SPEECH OF THE RIGHT HON. LORD CARRINGTON, DELIVERED AT THE BOARD OF AGRICULTURE ON TUESDAY, MARCH 15, 1803.

ALTHOUGH it was usual for our two last Presidents to lay before the Board, every year, a detailed account of all that had been done, and all that was proposed to be done, towards accomplishing the objects of our Institution, and afterwards to give the same to the Public as a printed speech, I have not hitherto thought it necessary to adhere to this custom: But at the present moment, when I am about to quit the Chair, I have reason to believe that some account may be expected from me, of the conduct of the Board, during the period of three years, in which I have had the Honor to preside. I will therefore endeavour to recal to mind some of the leading particulars of our Transactions, which, either from their own importance, or the peculiar circumstances attending them, have most attracted my attention.

Indeed, it cannot be thought necessary to arrange and class, under distinct heads, all the occurrences of our weekly meetings. They comprehend whatever relates to the improvement of the Agriculture of the Kingdom, in its various branches, and are well known to most of those who hear me. To excite Emulation and promote Inquiry; to encourage and diffuse improvements in the construction and use of Instruments for abridging labour; in adapting a proper rotation of Crops, and a judicious selection of Manures, to different soils; and to endeavour, for all these purposes, to combine the results of Science with the practical knowledge of Agriculture: to discuss and consider new projects; to recommend such as are useful; to discountenance such as are visionary and impracticable; and, above all, to infuse into the minds of those honorary members that come among us, a just sense of the importance of the study of Agriculture as a Science, and of the practice as an Art;—these have been our constant occupations: and if it should appear that, in some instances, our just expectations of success have been disappointed, still I think it must be admitted, on a review of our proceedings, that we have been usefully and honourably employed—honourably to

ourselves, because usefully for the Public. Passing by, therefore, the large field to which I have pointed, I shall content myself with noticing a few of the most prominent features of our proceedings.

The first, and indeed the most important object of our attention, arose out of the Scarcity in the year 1800. Early in the spring of that year, the Board, with a wise and prudent foresight, took into consideration the state of the country, respecting wheat-corn: they had reason to apprehend that the stock was nearly exhausted, and were anxious to ascertain, as far as it could be then ascertained, what was the general expectation of the ensuing crop. For this purpose, I was directed to write letters of inquiry to all parts of the kingdom. The result was, with few exceptions, a full confirmation of the fears of the Board; little being left of the last year's crop, and the expectation of the growing one being rather under the usual average on the dry and warm soils, and very deficient on the clays and cold lands. After much consideration on the subject, no remedy occured to the Board, so certain, safe, and economical, for supplying the expected deficiency, as the importation of a sufficient quantity of Rice from India.

I had previously consulted with some of his Majesty's Ministers, who, in consequence, made such Communications to the India Company, as led to an agreement on their part, to allow the importation of Rice from India, duty-free: but with specific directions to their Servants, "that (whether individuals "should engage or decline embarking in these speculations) "they were by no means to send any on the Company's account."

This permission, so restricted, appeared to the Board a precarious and inefficient remedy. In the month of June, I was therefore requested to communicate to the same quarter, the apprehensions of the Board, together with the letters which I had received in confirmation of them. Notwithstanding I met with every mark of attention from Government, yet from some cause, to me unknown, though doubtless unavoidable on the part of the Directors, no alteration seems to have been made in the orders sent out to India; nor did the letters, conveying those orders, bear date till the 28th of August. The Parliamentary Bounty on the importation of rice (which guaranteed a selling price of 35s. per cwt.) was, on the 2d October following, unfortunately suffered to expire. What followed we all remember. The scarcity grew more urgent, and His Majesty was advised to call Parliament together early in the winter, to consider the best means of relief. The Bill granting a bounty on the importation of Rice, &c. was renewed, and continued to a long period. Great encouragement was held out to send ships to India; and nineteen thousand tons of

Rice were imported from thence; but unfortunately it did not arrive till after the abundant harvest of 1801. The article, in consequence, became a mere drug, and the Government was called upon to pay no less a sum than three hundred and fifty thousand pounds, to perform the Parliamentary guarantee to the importers. It is evident, that had it been possible for the exertions, which took place afterwards, to have been used with the same promptitude and success on the first application of the Board, besides the great relief which would have been afforded, this whole sum would have been saved; as the Rice would then have arrived at the most critical period of the scarcity, and have borne a high price. Nor is this all—to the pecuniary loss must be added, whatever was the difference in price at that time, and large it must have been, between a proportionate quantity of foreign corn imported (not less perhaps than four hundred thousand quarters) and the cost and charges of the Rice in question. Not wishing to dwell longer upon this subject, I shall only express my regret, that the Board was deprived of the satisfaction which they would have felt, had the information which their diligence had procured, and the timely suggestions founded upon it, been the means of averting any of the sufferings of the Public at that important Crisis.

The next to pick for your notice was one which has been made the pretence for calumny, misrepresentation, and invective, greater than, I think, have been often before thrown upon a Public Body. Upon a cool and deliberate review of our conduct upon that occasion, I feel nevertheless, that the Board is not only undeserving of censure, but, in my judgment entitled to commendation. I allude to Letters sent by order of the Board to the Sheriffs of the different Counties, to be laid before the Grand Juries at the Summer Assizes in the year 1800. The origin of that transaction you well remember. After the Board had suggested the measure above-mentioned for relieving the existing scarcity, they naturally turned their attention to the best means of preventing its recurrence; and nothing appeared so likely to prove effectual for that purpose, as the enclosure of the Waste Lands. In the midst of their inquiries, they received from the very respectable Baronet who acted as Foreman of the Grand Jury of the County of York at the preceding Assizes, certain Resolutions upon this very subject, which had, unknown to the Board, been entered into by that body. These resolutions contained very forcible statements of the great fluctuations of the price of corn in late years; of the insufficiency of the produce of the country for its consumption; and of the consequent necessity of converting to productive husbandry the immense tracts of uncultivated wastes. The various proofs of these propositions were enu-

merated, and a recommendation was addressed to their Representatives, to endeavour to obtain Parliamentary authority for such enclosure.

This Communication exactly coinciding with the Ideas of the Board, it occurred to them, that a concurrence of other Grand Juries to the same point might be the means of forwarding the object; and I was therefore directed to transmit the Resolutions of the county of York to be laid before the Grand Juries of the different counties at the Summer Assizes. The answers from most parts of the country were highly favourable to the proceeding, and I was little aware of the attack that was in contemplation.

It so happened, that amongst the Resolutions of the county of York, which run to great length, there had been introduced, towards the close of them, an observation, that the practice of taking tithes in kind, was an obstacle to the improvement of Agriculture; and an opinion was given in favour of a fair and just commutation. This suggestion, however, was only collateral to the principal object, and had therefore not attracted at that time the attention of the Board, which had wholly and exclusively been bestowed on the waste lands; and I do not believe that a single member recollected that the subject of tithes, in general, had been touched upon. But in the spring following, when, as Chairman of a Committee appointed by the House of Lords on account of the dearth of provisions, it became my duty to bring in a bill for enclosing the waste lands (which had the misfortune to displease the great legal authorities in that House), a formidable attack was made, not so much upon the bill directly, as upon the Board of Agriculture. Its views and its conduct were represented as inimical to the Church-Establishment: the application to the Grand Juries was severely reprobated; the only object of which was supposed to be an attack upon the institution of tithes, under the pretence of enclosing the waste lands. The language of those surveyors, who, at the commencement of the Board, had animadverted on this subject, were alluded to, as proofs to the same effect. In vain I stated, that though it was impossible to deny that the collection of tithe in kind operated unfavourably to Agriculture, yet that it never had been the intention of the Board to call in question the general propriety of tithes as a provision for the Clergy; this being a subject which on no occasion they had ever discussed, conceiving it not to be immediately within their province; that the observations upon tithes, which had been complained of, were printed many years ago; and that the Board had in the title-page of those very books, expressly disclaimed all responsibility for the particular opinions contained in them; each of those publications being intended merely as a general sketch (to be corrected by

future inquiry) of the Agriculture of the particular county to which it related. In vain I urged this, and more. The opinions thus disclaimed were nevertheless made the grounds of attack upon the Board of Agriculture, by those Law Lords who disliked the bill, which, whatever might be its defects, was certainly as little liable to endanger the Church-Establishment, as it was, in the opinion of those who framed it, well calculated to promote the Agricultural interests of the kingdom. The sentiments, which these great authorities uttered in debate, have been since frequently revived and enlarged upon in some of the most violent periodical publications, as undeniable proofs of a conspiracy of the Board of Agriculture against the Church of England.

I shall not trouble you to hear again the Resolutions of the county of York, as they have been frequently before us; but in recalling your attention to the proceedings of the Board upon them, allow me to ask, whether any fair man can be induced to believe, that the gentlemen who were present, whose names you will hear read, and who for talents, integrity and estimation in the country, may bear a comparison even with the Noble Lords alluded to, could so demean themselves, as to make a proposal, in itself avowedly unobjectionable, a cover for introducing another of a totally different nature? The Board will recollect that, at that time, not one syllable on the general subject of tithes was mentioned: the waste lands, and the waste lands alone, were the object of our contemplation. The Secretary will now be pleased to read the Resolutions of the Board, of the 20th of May, and my Letter to the Sheriffs, of the 26th of June, which are irrefragable proofs of this fact.

EXTRACT FROM THE MINUTES.

"*Tuesday, May* 27, 1800.

"PRESENT:

"THE RIGHT HON. LORD CARRINGTON, PRESIDENT,

The Right Hon. Sir Joseph Banks, Bart. K. B.	Lord Romney,
	Sir Christ. Willoughby, Bart.
The Surveyor-General of Crown-Lands, M. P.	Sir Will. Geary, Bart. M. P.
	Sir Henry Fletcher, Bart. M. P.
Duke of Bedford*,	Sir John Call, Bart. M. P.
Earl of Winchelsea,	John Conyers, Esq.
Earl of Egremont,	Langford Millington, Esq.
Earl of Hardwicke,	Henry Vavasour, Esq.
Lord Viscount Wentworth,	

"The Resolutions of the Grand Jury of the county of York being read,

"RESOLVED,

"That a Circular Letter be written by the President to the High Sheriffs of the respective counties of the kingdom, enclosing the Resolutions of the Grand Jury of the county of York, and requesting that they may be laid before the Grand Juries for their consideration, at the ensuing Summer Assizes.

* The Duke of Bedford was not present when the Resolutions passed, but his Grace's name was inserted in the Minutes by his particular desire.

" RESOLVED,

" That this Board will, immediately on its meeting after the receſs, take into conſideration the propriety and utility of a general encloſure bill, and particularly the beſt method of encloſing ſmall commons and waſtes:

" RESOLVED,

" That, in the mean time, any information that can be communicated on the above ſubject, will be thankfully received by this Board, by letter addreſſed to the Preſident:

" RESOLVED,

" That the Board earneſtly recommends the conſideration of this intereſting ſubject in all its branches, to the Official, Ordinary, and Honorary Members; and that they will be pleaſed to communicate the reſult of their inquiries to the Board, by letter to the Preſident."

(CIRCULAR.)

Copy of the Letter from the President of the Board of Agriculture to the High Sheriffs, dated June 26, 1800.

" The Board of Agriculture, deeply impreſſed with the diſtreſs occaſioned by the great ſcarcity of the neceſſaries of life, have turned their ſerious attention to the beſt means of preventing a ſimilar calamity in future. The reſult of their inquiry is an opinion, that the encloſure of waſte lands and commons is one of the moſt likely means to effectuate this end. It gave me therefore much ſatisfaction to receive from the Grand Jury of the county of York, a copy of certain reſolutions which they had unanimouſly entered into, at the laſt Aſſizes, on this intereſting ſubject. The ſcarcity has ſince ſo much increaſed, as to render their obſervations every day more forcible and juſt.

" I am deſired by the Board to tranſmit to you theſe Reſolutions, and to requeſt that you would be pleaſed to lay them before the Grand Jury of the county of , at the enſuing Summer Aſſizes, together with the Reſolutions of this Board, which I have alſo the honour of ſending encloſed. It is impoſſible to call the attention of the public to a ſubject of greater national importance; and ſhould the reſpectable bodies to which I have addreſſed myſelf, expreſs their opinion in favour of the meaſure, by adopting theſe Reſolutions, or by framing others more congenial to their own ſentiments, I cannot but entertain the moſt ſanguine hopes, that the attention of the Legiſlature may be ſpeedily directed to carry theſe deſires into effect, as the Board has already received from ſeveral Members of both Houſes of Parliament, aſſurances, that they will ſupport any practicable plan of a General encloſure which may be brought forward.

" I have the honour to be, &c. &c. &c.

(Signed) " CARRINGTON, Preſident."

But it was also urged by the opponents to the bill, that an application to the Grand Juries, or any subjects but those for the cognizance of which they are assembled, must necessarily be improper. I am free to admit, that Grand Juries ought never to be made parties to political discussions, though I believe that some of those who most vehemently objected to the conduct of the Board, have in times of great party heat, not always felt themselves restrained by this consideration. But I must contend, that to help forward a plan for cultivating the waste lands, it would be difficult to find any Gentlemen more exactly fitted to act, than that description of which Grand Juries are composed; or any, whose opinions would have a greater effect on their Representatives in Parliament. They

are always men of liberal education; many of them Acting Magistrates; and coming from different parts of the country, must, from personal observation, be able to judge of the relief to be expected from this measure, in their particular district.

With regard to the bill, which, as Chairman of the Committee of the House of Lords, I have the honour of proposing in Parliament, and which failed of success, it would lead into too much detail, to enter fully into the consideration of it; and I am the less induced to do so, because, as I have already hinted, the objections made to the bill rested chiefly on the general imputations cast on the Board of Agriculture, and not so much on any examination into the nature of its provisions. I will only say, that it was framed after mature deliberation, and seemed to be most peculiarly applicable to two descriptions of waste lands, namely, those where the commons are so large, and the rights so mixed between different parishes, that it is almost impracticable, in the ordinary way, to obtain consents? and next, to those wastes, of which the number in this country is immense, where the quantity of land is too small to bear the expence of a separate bill. But it was hardly to be expected, that a measure which innovated on the common practice respecting enclosures, and which, though without foundation, was considered as annihilating or abridging the profits of large descriptions of individuals, should pass without opposition. I should, however, have pressed the bill forward, regardless of the formidable battery which had been raised against it, but unfortunately the Committee of Lords, who framed it, suffered, in an evil hour, one of its leading provisions to be altered in a manner that, in my opinion, would have made the bill in a great degree nugatory and ineffectual: I was therefore as anxious to have it withdrawn as any of those Noble Lords who opposed it.

Since that time the bill has not been renewed, nor has the Board taken any subsequent measures on the subject. Their conduct, in this respect, has my full approbation. The crisis in which the bill was produced, was particularly favourable to it. A scarcity, almost approaching to a famine, existed, and this measure was loudly called for by the public. If, under such circumstances of pressure, those who had it in their power to administer the remedy, could suffer the passions, prejudices, or interests of others, so to mislead their judgment, what have we at this time to expect from the attempt? If, after the fatal experience of more than twenty millions sterling having been sent to foreign countries for the purchase of grain, within the short period of a very few years, they can shut their eyes upon the past, and consider the present abundance as perpetual; if they can still condemn millions of acres, which

are capable of every kind of produce, to remain dreary wastes, I can impute it to little less than to a species of infatuation. The case seems to me desperate; and I may almost say of them, in the forcible language of scripture, "Neither will they be persuaded, though one rose from the dead."

The next important object that engaged the attention of the Board, was occasioned by a requisition from the House of Lords, who, in their inquiries into the means of removing the dearth of provisions, conceiving that many of the lands now under grass might be advantgeously converted into tillage, applied to the Board for advice, under what regulations this change might be safely made. The Board, fully aware of the importance of the subject, and desirous of calling the public attention to it, proposed, by advertisement, to give premiums for Essays on "the best method of converting grass-land into tillage, and, after a certain time, of restoring them to grass again, with improvement, or at least without injury." This application from the Board had a great effect; no fewer than between three and four hundred essays, from all parts of the country, were transmitted. Much time and labour were spent in examining their respective merits; and to no Member of the Board were we so much indebted on that occasion, as to the Noble Duke, who is now unhappily no more.

To prevent even the possible suspicion of any improper bias, the essays were directed to be sent with marks, or mottos, and were adjudged by the Board without any knowledge of the names of the respective authors; and I have the satisfaction to say, that the principal rewards fell to those who, in the opinion of the country, stood the highest for agricultural skill and talents. The Board, in this very delicate business, rendered more difficult by the great mass of matter, and the number of claimants, had the full reward of their pains and labour: and though I am not so presumptuous as to assert, that the judgment of the Board was in every case precisely according to the merit of the author, yet I think I may affirm, that there are very few instances to the contrary; and that no measure in which the Board was ever engaged, gave greater satisfaction to the public, or produced more useful information. A part has already been published, and I flatter myself that another volume on the same subject will soon be ready.

While the Board was employed in these domestic objects of attention, it felt itself happy in becoming the medium of sending to the West Indies some of the most valuable productions of the East Indian islands, within the same climates. From Dr. Campbell, an ingenious botanist in Sumatra, they have obtained several parcels of seeds (with accounts of their nature and properties,) which, if they should succeed, may prove

most valuable acquisitions to the West India islands. They are at present on trial; but the House of Assembly in the island of Jamaica have already been so sensible of their importance, that, by an unanimous vote they have returned their thanks to your President. A gold medal, the highest honorary reward bestowed by the Board, has been sent to Dr. Campbell, and I have no doubt that further supplies and greater varieties of seeds may soon be expected.

Before I conclude, I must beg leave to notice a few circumstances of our domestic concerns: And first, with regard to our publications.

I can truly say, that much the most painful and difficult part of my duty, has arisen from prejudices excited by some of the early publications under the authority of the Board. I have already stated, that these were published merely as hints and conjectures, and that the Board expressly disclaimed all responsibility as to the particular opinions advanced. It must, however, be admitted, that some of them were suffered to be printed without due examination, and that it will be our duty to expunge every exceptionable passage from the future editions. Indeed the Board has very strictly watched over their publications for the last three years; and though they are fewer in number than formerly, yet I may venture to flatter myself, that they are more correct, at least, that they contain nothing liable to the same sort of objections.

It is much to be wished that the amended reports of the Agriculture of the different counties could be completed; but a sufficient degree of agricultural knowledge is so rarely united to the power of explaining it with perspicuity and method, that notwithstanding all my endeavours, I have seldom succeeded in finding persons with sufficient ability and inclination to undertake this work. But as it is one of the greatest importance, I hope that the Members of the Board, in their respective counties, will search out for the most proper persons, and that they will also direct, encourage, and assist them in the execution.

With regard to our Finances, I must do the Noble Lord who preceded me the justice of declaring, that he left them relieved from the embarrassments to which they had formerly been subject. At present I have the satisfaction to say, that their situation is considerably improved; and yet I believe that no proper expence has been spared, but that, in all our proceedings, we have acted with a just liberality, which, with means as limited as ours, can rest only on the basis of economy. Our outgoings must necessarily be large. The two Secretaries deserve and receive considerable allowances; the other Gentlemen in the office have also just claims to the remuneration bestowed on them. We are obliged to incur a

considerable expence for rent, taxes, stationary, and office incidents. A large piece of ground at Brompton is kept in hand for experiments, with suitable persons to superintend them. Add to this, honorary rewards (which in the single case of the essays on grass-lands, amounted to upwards of four hundred pounds, in addition to the grant for that purpose from Government), the sums paid for surveying counties, for forming a collection of books in Agriculture, for purchasing models and implements; and when it appears that all this is done from a Parliamentary grant of only three thousand pounds a-year, subject to the payment of fees, and that we have now a considerable balance in hand, after having discharged all demands upon us, I think the Board cannot be denied the merit of an attentive and judicious administration of their affairs, and that their conduct may be brought as an example to others, how much may be done, with means comparatively small, when under the direction of a prudent management.

I cannot conclude without adverting to a subject which I shall always consider as matter of peculiar pride and satisfaction to every Member of this Society. I mean the uninterrupted harmony and cordiality which has on all occasions prevailed in our intercourse with each other. A Society of this nature could never be extensive enough for its purpose, nor embrace all the talents most likely to render it useful, without comprehending persons who are in other respects divided by those political distinctions of party which are found always to prevail in this free country. Under the influence of these political distinctions, we have every day reason to see how difficult it is for those to act together kindly, even in the ordinary affairs of common life, who differ thus widely in their public sentiments. But, happily, in this Board, although every Gentleman that belongs to it must, from his situation and rank in the country, take a part more or less active in political discussions, yet, as if by common consent, the influence of every discordant opinion has been extinguished the moment he entered these walls. It is impossible to refer to any more striking instance of this liberal conduct, than in the person of the Noble Duke whose bust is now in our view, and whose untimely loss we all equally regret. To the happy prevalence of this general dispositon I must attribute the perfect unanimity which has prevailed amongst us during the whole period to which I have alluded. No sharp, angry, or vehement debates have taken place; and I am not aware that even a single expression has ever fallen from the lips of any Member, that could wound the feelings of another.

For myself, it is impossible not to acknowledge the partiality and indulgence which first placed me in this chair, and have

since uniformly supported me in it. That persons, who by their rank, and estimation in the country, as well as by their knowledge of Agriculture, are confessed by all to be fittest for the first place (and any of whom it was my sincere wish and desire to have induced to undertake it, in preference to myself) should yet have condescended to accept from me the office of Vice-Presidents, must ever be highly gratifying to my feelings. With respect to the other Members of the Board, where I am so much indebted to all, it may not perhaps be strictly proper to mention any; but I cannot help saying, that to two of the official Members, namely, the President of the Royal Society, and the Surveyor-General of the crown lands, I am under the most particular obligations: The various and extensive abilities of these Gentlemen, have been assiduously and uniformly exerted in assisting my endeavours. It would be ungrateful to deny, that their knowledge has instructed my ignorance; their information and experience have on every occasion aided or corrected my judgment; and their vigour and activity of mind have materially diminished the difficulties which I should otherwise have had to encounter, even in my imperfect attempt, to discharge the duties of my situation.

To them, to the Vice-Presidents, and to the other Members of the Board, I once more beg leave to return my thanks. It is my most ardent wish that their labours may long be continued with equal zeal and judgment, and with increasing credit to themselves and advantage to the publick. The same kind and liberal protection which I have been fortuna e enough to experience, will, I am sure, be extended to the person, whoever he may be, whom their choice may destine to be my successor. It is that, which can alone enable him to discharge with confidence and success his duty to the Board, and effectually to promote the wise ends of its Institution.

BOARD OF AGRICULTURE.

London, Tuesday, March 15, 1803.

Present:

The Right Hon. Lord Carrington, President,

The President of the Royal Society, k. b.	Sir Geo. O. Paul, Bart.
The Earl of Egremont,	Sir Cecil Wray, Bart.
The Earl of Galloway, k. t.	John Conyers, Esq.
Lord Viscount Wentworth,	Wm. Wilberforce, Esq.
Lord Viscount Newark,	Lang. Millington, Esq.
Lord Sheffield,	Thos. Estcourt, Esq.
Sir Christ. Willoughby, Bart.	John Fane, Esq.
Sir Henry Vavasour, Bart.	The Rev. Henry Bate Dudley.

On the motion of the Earl of Egremont, seconded by Lord Viscount Newark, it was resolved unanimously, that the thanks of the Board be given to Lord Carrington the President, for

the eloquent Speech which he has just delivered from the Chair; and that he be requested to furnish the minutes of the same, to be entered amongst the procedings of the Board, as it contains, in their opinion, a just and satisfactory illustration and defence of the views and conduct of the Board during his Lordship's Presidency

At a meeting of the Board of Agriculture,

Tuesday, April 5, 1803.

Read the minutes of the Speech of the late President.

Resolved, That this Speech be printed for the use of the Members, and that it be also inserted in the next volume of Communications.

Resolved, That the Letter now read from Lord Carrington to the President, Lord Sheffield, acknowledging the receipt of his Lordship's Letter inclosing the thanks of the Board, be inserted together with the President's Letter, in the minutes, and printed with Lord Carrington's Speech.

Board of Agriculture, March 30, 1803.

MY LORD,

It is peculiarly gratifying to me, as President of the Board of Agriculture, to have been requested to transmit to your Lordship the unanimous expression of the high sense they feel of the ability with which you presided in the chair of the Board. To use any other language than their own, would be doing an injustice to the Resolution; I have therefore the pleasure of copying it.

"Resolved unanimously, on the Motion of the President "of the Royal Society, seconded by the Earl of Romney, "That the thanks of this Board be given to the Right Ho- "nourable Lord Carrington, for his regular attendance on the "meetings and other business of the Board; for his able con- "duct in the Chair; and for his judicious management of "their affairs, particularly of the funds of the Board."

Permit me only to add, that this Resolution has my entire concurrence, and that it will be my wish to conduct myself on the same principles as those, which have enabled your Lordship to give such general satisfaction to the Board.

I have the Honour to be, with great regard,

My Lord,

Your Lordship's faithful humble Servant,

SHEFFIELD.

The Lord Carrington.

&c. &c. &c.

St. James's-place, April 4, 1803.

MY LORD,

I beg that your Lordship will present my most respectful thanks to the Board of Agriculture, for the great Honour which they have conferred upon me by their unanimous Vote.

I cannot flatter myself that I deserve this distinction; but I am nevertheless proud to have received it, as a proof of their esteem and kindness. Be pleased, My Lord, to accept my best acknowledgments for the obliging expressions, in which you mark your own concurrence with the sentiments of the Board.

I have the Honour to be,
My Lord,
Your Lordship's most obedient and faithful Servant,
CARRINGTON.

The Lord Sheffield,
President of the Board of Agriculture,
&c. &c. &c.

ON THE FAILURE OF THE APPLE CROPS, IN 1802.

To the Editor of the Agricultural Magazine.

SIR,

AFTER so many gentlemen of distinguished abilities for their knowledge in the article of orcharding, have given their opinions relative to the cause of the general failure of the Crops of Apples last year, (though in some places they have been very productive,) it may appear presumptuous in me to offer my thoughts upon it, when I attribute it to a cause quite different from any of them; but at the same time I know, that cold rains, and sharp frosts, are generally the reason of the failure of crops of fruit, to which these gentlemen attribute it.

In July last, I went to Thornton, a village nine miles west-and-by-north distant from Leicester, situate on an eminence, without the least shelter on any side from trees, and adjoining to a range of very high hills.—On account of its bleak situation, vegetation in that neighbourhood is, at least, a fortnight later at spring, than at Leicester.—There, to my great surprise, was a plentiful crop of apples, when scarcely one could be discovered in the well-sheltered gardens and orchards situate in the centre of the town of Leicester.

I instantly told my friend, to whom I was paying a visit, Mr. Fewkes, a very intelligent gentleman-farmer, to what I attributed it, that on account of the backwardness of the blossoms opening, they had escaped the general destruction which happened in those gardens and orchards, which were more forward when those fatal frosts happened. He entirely coincided with me, that that was the real cause.

From this circumstance, I should recommend to those persons who have choice of ground, to have a small orchard in a northern-situation; they then would have two chances every

year for a crop of fruit, for frosts are what it is impossible to guard against.

I always have been particularly attached to planting fruit-trees, and in one year planted above three hundred, to form a regular fruit-garden; consisting of apricots in standards, peaches, nectarines, almonds, cherries, plumbs, apples and pears; and, as my method of planting and managing them was different from the usual ones, and attended with success, I shall, before the season of planting arrives, describe it.—My garden was at Hampton-wick, consisting of ten acres, walled in, adjoining to Bushy-park; and my plan was to form both a profitable and ornamental garden: this was in the year 1761; but it is now above twenty years since I saw it, I cannot give any account of its present state. It is only a mile from Hampton-court, Mr. Bucknall's residence; and if he was inclined to go and see it, I apprehend he would find the apricot-trees in a profitable state to the owner. I planted eighty Breda and Brussels, as standards, but with stems only one foot high.

R. WESTON.

ON A NEW SPECIES OF GRAIN, CALLED SIBERIAN OR HALIDAY BARLEY.

THE Surface of the earth is clothed with a variety of grasses. Such as are intended for the use of cattle are spontaneous in the growth. Such as are intended for man require culture and attention. The grasses of the field yield a never-fading verdure. They shoot early in the spring, and continue to send forth radical leaves, which are daily cropped without injuring the plants. Animals seldom destroy the flowering stems. A variety of grass-seeds are consequently sown upon our meadows and pastures by the hand of Providence. This dislike in animals to brouze upon the straw that bears the seed, is particularly favorable to the animal grasses, and gives an useful hint to the intelligent husbandman, not to keep his grass-lands too long under the scythe.

Wheat, oats, barley, and rye are grasses* for the use of man. These vegetables are found in almost every climate. Man is a citizen of the world, and indulgent Heaven supplies him with food wherever he goes. The earth produces variety of grains. Different countries support some kinds more luxu-

* Grasses are one of the seven natural families, into which all vegetables are distributed by Linnæus. They are defined to be plants which have very simple leaves, a joined stem, a husky Calix, termed Gluma, and a single seed. This description includes the several sorts of corn as well as grasses. In Tournefort they constitute a part of the fifteenth class, termed Apetali; and in the Sexual System of Linnæus they are mostly contained in the second order of the third class, termed Triandria Digynia.

riantly than others. In the northern climates we find plenty of oats and barley. The more southern latitudes are particularly favorable to wheat. Could we look back into the remote annals of time, we should discover that few countries were originally blessed with the variety of grains and fruits which they at present enjoy. Crabs, slows, and brambleberries are the natural fruits of this island; and there was a time when wheat was hardly known. Oats, barley, and rye, fed the vassal and his lord.

In consequence of a liberal communication with foreigners, we have daily increased the number of vegetable productions, and have, as it were, naturalized them to our climate. I shall in this essay give an account of a new species of barley lately brought into this kingdom. As it has been made known to us by the care and attention of Mr. Haliday, I have called it by his name, as an honour due to him. Mr. Haliday, in the most correct and circumstantial manner, communicated his sentiments upon this new species, in a letter to my ingenious friend T. B. Bailey, Esq. of Hope, near Manchester, by whom I am favoured with the following extract.

——"On the 25th of May, 1767, I received about a moderate wine-glassful of this grain, from a Member of the Society of Arts, &c. at London, with this information, that a foreign nobleman had presented that Society with about a pint of it, and that it came from Siberia. Not having seen Pontoppidan's account of the Thor-barley, or Heaven's corn, I was doubtful whether it was the product of a cold or warm climate. The amazing extent of Siberia, and the low latitude of its southern bounds, created this uncertainty. I was from hence induced to divide my small quantity with a neighbouring gentleman, who had in his garden the advantage of glasses and fire. But the result of his trials shewed that it was a native of a cold rather than a warm climate. In the morning of the 26th, I sowed the other half, in drills, in a south border of my garden, each grain from four to five inches asunder. The rows were carefully weeded, hoed, and sometimes watered; but proving rank, I was obliged to support them with stakes and lines. By the latter end of August some few ears were ripened, which I snipped off. I continued this practice, morning and evening, until the first week in October, and laid the ears by in linen bags.

"In April, 1768, I rubbed out, by hand, the last year's crop, and was happy in finding the quantity was near a quart, equal, if not superior, in quality to the original seed. Having prepared all the south-borders in the garden, and part of a last year's potatoe-butt in a field adjoining, I sowed the whole in drills, as before, in the first week in May. The crops were kept clean and hoed. What grew in the garden

was snipped off as it ripened, and the butt was reaped in the common way on the 28th of August. The whole was hung up in sacks until the beginning of April, 1769, when it was thrashed out, and produced near a bushel. On the 19th and 20th, having prepared about an acre, of seven yards, pretty fine, I drew drills with a plough about ten inches apart, then a space of three feet, and so on. The grain was sown by hand, and the drills were smoothed with garden rakes. To keep the corn from falling, though, as it happened, there was no need, large beans, were dibbled in the middle of the three-feet spaces. In June, the whole was carefully hand-hoed, and on the 14th and 15th of August was reaped. The calculation I made of the produce from the traves, proved just about 36 bushels of clean corn.

"Having now got a stock, on which I could afford to make experiments of its utility in the grand points of bread and beer, I had two bushels of 35 quarts, weighing 132 lb. sent to a country mill. When ground, it yielded 80 lb. of fine flour, equal to London seconds, 40 lb. of a coarser sort, and about 12 lb. of bran, superior to wheat bran. The best flour made excellent bread, sufficiently light, and so retentive of moisture, as to be as good at twelve or fourteen days after baking, as wheaten bread on the 4th day. But, to give it the fairest trial, I had 12 lb. of the barley, and 12 lb. of wheat flour, equally fine, kneaded with some yeast, and baked in the same oven. The wheaten loaf weighed 15 lb. and the barley 18 lb.

"These trials sufficiently established its excellence as a bread-corn. The foregoing year had proved its fecundity. To find out its quality for ale, I readily accepted the offer made me by a Gentleman of Liverpool, of equal skill and attention and sent him two bushels to be malted. He obligingly took the trouble of this small quantity, and made me happy in the account he gave me of its working.

"In the latter end of January, it was brewed into a half-barrel of ale, and another of small beer. The latter was used at a month old, and proved good. The ale was tapt on the 27th of May, and proved of a fine colour, flavour, and body.*

"You have now all the particulars of my three years experience of this excellent grain. If you think the information can be of service to your farming acquaintance, you are at liberty to use it as you please, hoping, however, that my success will apoligize for my enthusiasm in its favour. The idea I entertain of its superior utility to any other spring-corn,

* Dr. Lochſter, in his Diſſertation de Medicamentis Norwegiæ, extols the liquor made of it both as palatable and wholeſome. Palmam, (ſays he,) quoque reliquis præripit decoctum hordei cœleſtis, vulgo Himmelbyg, grato tam ſapore quam effectu ſe commendans."

has induced me to make it as universally known as the narrow circle of my acquaintance would permit. I thank you for assisting my views, and am in hopes that Mr. Young will find occasion to celebrate its virtues from a more skilful, though not a more attentive cultivation.

"On the 30th of April, I laid down, in the broad-cast way, two large acres, of eight yards, with six bushels and a half of this barley, white clover, and hay-seeds, and have sown four other bushels in a field of poor natural soil. Both fields look well. I am also happy in knowing that about 20 bushels of my last year's crop are now under skilful culture in the several counties of Kent, Surry, Essex, Middlesex, Hereford, Stafford, Chester, Derby, York, Durham, and many parts of this county; in two or three counties in Wales, six or seven in Ireland, and some in Scotland; from all which I am filled with the hopes of its soon becoming as universally esteemed as known."

A. HUNTER.

ON TOP DRESSINGS.

SOOT, malt-dust, pigeon dung, and rape-dust, are considered as top-dressings. They are never worked into the land by the plough. In that, they essentially differ from other manures. The theory of top-dressings is not generally known; the practice, consequently, is but imperfectly understood.

When any kind of manure is worked in by the plough, we mean to lighten the soil, and at the same time to fill it with nourishing particles. But, when we apply top-dressings, we only consider the nourishment of the plants, having no regard to loosening the earth. Light, sandy, and lime-stone lands are best managed by top-dressings. Stiff loams and clays require lime and rotten dung to break the cohesion of their parts. The one remains in the ground for the benefit of succeeding crops; the other is only the food of the year. The tillage-farmer, whose soil is thin, should pay a careful attention to top-dressings. They are the soul of his husbandry. On the lime-stone lands in Yorkshire, rape-dust is chiefly used; but the price is so much advanced, that the farmer can hardly afford to purchase it. An acre of wheat land cannot be well dressed with less than four quarters of rape-dust: three quarters are sufficient for an acre of barley. The price is about eighteen shillings per quarter. To obviate this great expence, I shall recommend a compost made of shambles-blood and saw-dust, which I have found experimentally to equal, if not excel, most hand dressings. This compost has the peculiar property of being no way offensive to the smell. It comes cheap, and may be procured in every large town. I cannot

give any directions relative to the quantity necessary for dressing an acre of land. My experience upon it has been confined to a small scale.—It is speedy in its effects, but not lasting.

In Flanders, where manures are well understood, they dry and powder human ordure, which they use as a top-dressing, and find it of a rich quality. In large manufactories, and in places where a number of people live together, it may be a judicious practice to receive all excrementitious matters upon saw-dust; which, by frequently turning over, may be converted into one of the richest dressings.

In order to have a distinct idea of top-dressings, we must reflect that wheat, oats, barley, and rye, have two kinds of roots. The one is called the *seminal*, the other the *coronal* root. The first lies deep in the ground, and proceeds immediately from the grain: The other is formed just within the surface. In proportion to the vigour of this last, the crown becomes stronger or weaker; or, in other words, the plant tillers more or less. In winter corn, the plant is nourished, during the severe months, by the *seminal* root only. It should therefore be placed pretty deep, to secure it against the effects of the frost. On this account drill-wheat stands the winter better than the broad-cast. The *coronal* root seldom appears before the beginning of March. This is therefore the season for the application of top-dressings. The first shower of rain washes them just within the surface, where they become the immediate nourishment of the *coronal* root.

In most places, rape-dust is harrowed in with the winter corn; but soot is always laid on in the spring. By the application of this last, the plants soon recover the injuries of the winter, and a large crown is formed, from which a number of stalks are produced in proportion of the size of the crown.

In spring corn, the *coronal* roots form themselves within a few weeks after sowing; for which reason the top-dressings should be harrowed in with the grain.

It will be necessary to remark that, as top-dressings can only operate but a little way within the surface, they are therefore only proper for horizontal feeders; as wheat, oats, barley, and rye. Beans, and tap-rooted plants require such manures as are worked into the land by the action of the plough.

It may be objected that turnips, though tap-rooted, yet receive benefit from top-dressings; but it must be considered that they operate upon the plant by pushing it hastily into rough leaf, and thereby securing it against the fly. After this, the turnip flourishes or declines in proportion to the richness or poverty of the soil.

So much depends upon the right use of manures, that we cannot employ too much time in investigating their natures,

Notwithstandtng what Mr. Tull and other ingenious gentlemen have advanced, I am clearly of opinion that manures are the life and soul of husbandry. Till the farmer can scientifically explain the manner that manures operate, he will find it impossible to reduce his profession to the standard of reason. I therefore flatter myself, that, from these essays, he will be able to collect some hints that will be of use to him in forming a just notion of one of the most important branches of agriculture.

A. HUNTER.

ON EXPERIMENTS.

EXPERIMENTS correctly made, and fairly related, form the data on which agriculture should be founded. To plan an experiment well, to trace it minutely through its progress, and to draw a just conclusion, is expected from the philosopher. And yet experiments that spring from chance more than reason, should not be neglected. The following experiments, with some short pieces of practical information, have been transmitted to me. Their authenticity and correctness sufficiently recommend them.

EXPERIMENT I. ON THE OIL-COMPOST.

By A. Hunter, M. D.

In the month of June I selected four lands, of equal goodness, in a field intended for turnips. The soil was a light sand, with a small portion of vegetable earth amongst it. It was ploughed out of sward in November, and had not borne a crop for many years. I shall distinguish my experimental lands by N° 1. 2. 3. 4.

N° 1. was manured with rotten dung.
2. with oil-compost.
3. with lime.
4. was left without any dressing.

On the 20th of June they were all sown with turnip-seed, broad-cast, and during the course of the season were twice hoed.

In November I viewed the field, and made the following remarks:

N° 1.—the best.
2.—the next.
3.—the worst.
4.—better than N° 3.

Here the oil-compost appears in a favourable light; but other trials, made with equal accuracy, seems rather to prove that it is not proper for turnips, barley, or quick-growing vegetables. It requires being meliorated by the action of the atmosphere, and therefore is better adapted to winter crops,

By repeated experiments made since the publication of the first edition of this essay, I am convinced that the addition of an alkaline salt is not sufficient to alter the nature of oil, so as to make it fully capable of entering into the roots of plants in its native form: but when decomposed by the mixture of fresh dung, I am convinced that it then becomes the true pabulum of plants. The farmer considers carbone as given to "airy nothing a local habitation and a name."

When the land happens to be stiffer than is required for turnips, it may be good husbandry to lay upon it a large quantity of lime to open its body for the free admission of the tap-root of the turnip. The lands will also be rendered more dry, without which the turnips will never arrive at any size. Farmers, in general, take great pains to pulverize their light soils intended for turnips; but they seldom plough deep enough. A turnip is found to root deep, and in all operations of husbandry we should be careful to follow the bias of nature. It is for that reason we ought to make ourselves acquainted with the size and shape of the roots of such plants as are objects of field-husbandry. When once we have obtained that necessary knowledge, it will be an easy matter to suit the preparation of the soil to the nature of the grain. It will also enable us to direct the variations of our crops upon just and rational principles.

It is abundantly evidently that all plants live upon the same food. Some require more, some less. Some take it near the surface, others take it deeper. Upon these principles we may account for the necessity of varying the crops in the old husbandry. The old drill husbandry makes all change of species unnecessary. In it all kinds of grain may be suited to the lands most proper for them. The success of that sort of husbandry, when properly conducted, proves to a demonstration that all plants are nourished by the same food. That food, I apprehend, consists chiefly of oily and mucilaginous particles.

It is of great moment to fix upon what is really the nutriment of vegetables, as it will enable us to conduct our compost dunghills upon just and rational principles. The doctrine of manures is but little understood. The farmer should at all times retain in his memory a general idea of them. He may divide manures into four kinds.

1. Such as give nourishment only; as rape-dust, soot, malt-dust, oil-compost, blood-compost, pigeon dung, and all hand-dressings.

2. Such as give nourishment, and add to the soil; as horse dung, cows dung, human ordure, rotten animal and vegetable substances.

3. Such as open the soil, and do not nourish in their own nature; as lime, light marls, sand, and vegetable ashes.

4. Such as stiffen the soil, and at the same time nourish a little; as clay, clay marls, and earth.

An attention to the general remarks, and a few observations upon the openness, stiffness, and depth of the different soils will enable the farmer to lay down a rational system of cultivation.

The theory of Agriculture being but little understood, it is no wonder that the practice has remained for ages, so vague and uncertain; but I flatter myself that the time is advancing when the husbandman will vie with the gardener in the rationality of his employment.

II. ON MANURING MEADOW LANDS.

By Mr. T. Bond, of Hexworth, near York.

It is a general practice for the farmers in the southern counties to manure their meadow lands at Christmas. We, on the contrary, put it on as soon as possible after the sithe. I have made a number of trials with a view to determine the merit of each respective way, and dare venture to say that it is better to manure when there is some life in the grass, than at a time when all vegetation is stopt.

The southern farmers alledge, that the volatile parts of the dung may, during that hot season, be exhaled by the sun. I grant that this objection may have some weight; but it must be considered that rain frequently falls at that season of the year, a small quantity of which will be sufficient to wash the dung amongst the old roots of the grass, which, by shading it from the rays of the sun, enables it to preserve its vigour. This effect is the more readily accomplished, as we constantly employ a heavy bush-harrow to spread the dung equally upon the ground. By following this method, our aftermath generally becomes luxuriant. Besides, it more effectually encourages the shooting of the young grass in spring. The roots of all perennial grasses renew themselves by off-sets, and die after they have perfected their seed. The manure, when laid to the old roots, invigorates the off-sets, by keeping them warm during the winter. Lands manured after the sithe, are not so easily frozen as those which have not been dressed in that manner. This is an undoubted fact, and proves greatly in favour of the northern husbandry. After very severe winters, the young grass that should have branched out from the old roots is frequently killed. The seeds also which were shed in July being young and tender, are often destoyed. Our manner of dressing affords them a certain protection in the severest seasons. It may be objected, that dung, laid on after the sithe, may render the aftermath disagreeable to the cattle. But our farmers do not practically find that inconvenience. Could we always be sure of a shower of rain within a few days after laying on the manure, our method

would then, incontestibly, be the best; but, even without that certainly, I find it better than the other.

III. ON A NEW KIND OF MANURE.

By A. Hunter, M. D.

All kinds of animal substances go into spontaneous putrefaction. Vegetables do the same; but to effect their entire dissolution, a greater degree of heat is required. I do not mean in this place to treat of the various manures made use of by the farmer. It would be carrying me into a field too extensive for limited design. The first experiment contains some general remarks upon this head, which the intelligent husbandman may easily improve into a system.

The bounty granted by Parliament for the encouragement of the whale fishery, has been the means of saving an immense sum to this nation. The Dutch used formerly to monopolize the trade; but by the wisdom of the legislature, we now enjoy a considerable share of it. In a former essay, I have endeavoured to show that train-oil made into a compost with pot-ash, makes a good succedaneum for dung. A number of experiments, made by very accurate observers, seem to establish the opinion.

When the oil has been taken from the blubber, by the action of boiling water, the remaining part is thrown into the sea. I have long lamented that no person has ever considered this fatty substance in the light of a manure. It is an animal body, and beyond all doubt, capable of being reduced, by putrefaction, into a rich food for vegetables. The only thing that remains, is to direct the farmer in the manner of its application.

In September, 1770, I collected about a ton of it, which I mixed into a heap with four loads of fresh horse dung. This spring I propose to mix it up with a proportionable quantity of such materials as are usually collected for forming a compost dunghill, and I flatter myself that it will prove a rich and cheap compost. I do not take upon me to say that this is the best method of using the whale flesh. It will give me pleasure to hear that others have applied it differently, being well assured that perfection can only be attained by the concurring assistance of many. I boast of no other merit beyond giving the original hint. There was a time when the richest manures, produced in cities and large towns, were either conveyed into the sea, or thrown into rivers. We have now the satisfaction to see that method universally condemned.

In order to encourage the farmer to seek after the refuse of train oil, I might observe that no manure has hitherto been found of a richer quality than the putrid offal of fish. In some parts of Cornwall they manure their lands with pilchards

in a plentiful season, and find that no manure equals them in richness.

It is allowed on all hands, that putrid vegetables make good manure; but it should be remembered, that animal bodies, when reduced into the same state, act more powerfully, and preserve the land much longer in strength and vigour.

We cannot pay too much attention to every thing that relates to manures; without their assistance the richest soils would soon be reduced, by frequent cropping, to a barren state. It is pleasing to observe how the dissolution of one body is necessary for the life and increase of another. All nature is in motion. In consequence of the putrid fermentation that is every where carried on, a quantity of vegetable nutriment ascends into the atmosphere. Summer showers return much of it again; but part falls into the sea, and is lost. To this we may add the animal and vegetable substances consumed on board of ships, all of which are buried in the ocean. The industry of man restores them again, but in a different form; and we may presume that the fish taken from the sea, leave a balance in favour of mankind. Thus Providence, with the most consummate wisdom, keeps up the necessary rotation of things.

IV. ON THE OIL-COMPOST.

By Mr. Roebuck, gardener, in York.

In the month of May I planted twelve alleys, that lay between my asparagus beds, with cauliflower plants. Each alley took up about thirty plants. One of the alleys I set apart for an experiment with the oil-compost, which was prepared according to the directions given in the first volume of the Georgical Essays.

About a handful of the compost was put to the root of each cauliflower plant. In all other respects the alley was managed like the rest. The plants in general flowered very well; but those to which I applied the compost, sprung up hastily with small stalks, and produced very poor flowers.

I imputed this unfavourable appearance to the freshness of the compost, which was only a few weeks old. In all future trials, I shall expose it to the action of the air, in order to abate the heat, and neutralize the acrimony of the salt.

In the September following this unsuccessful experiment, I planted the same alleys with early cabbages. The necessity of meliorating the compost, was in this trial fully confirmed. For the cabbages that grew upon the alley, which in May had received the compost, were larger, and in all respects finer, than the others.

The idea that I entertain of the compost is that, when meliorated in the earth, it is capable of giving a richness and

freshness to it. Upon this principle I would recommend it to gardeners as a subject worthy of further trials.

V. ON SIBERIAN SPRING WHEAT.

By M. Dodsworth, Esq. of Craike Hall.

On the 14th or April, 1770, I sowed three bushels and a half of the Siberian Spring-wheat on an acre, and reaped it with the first wheat in the neighbourhood. I had thirty stooks, which yielded above three pecks per stook. The wheat weighed four stone six pounds per bushel.

VI. ON THE HOWARD, OR LARGE BEDFORDSHIRE POTATOE.

By T. B. Bayley, Esq. of Hope

By all the experiments that have been made, the Howard Potatoe is found to produce the largest crop. On that account they are chiefly used in feeding of cattle. In two beds, four feet wide, and two hundred feet long, I planted in a common field a sufficient number of sets of this kind of potatoe, and managed them by the horse-hoe. The produce was sixty-four bushels, each bushel, up-heaped, weighing about 70 lb. My cattle eat them boiled, with as much eagerness as the best sorts, and came on as well with them. I have built a boiling house, &c. on Mr. Young's plan, and during this whole winter have boiled potatoes for my cattle. For the fattening ones, I mix ground oats with them; and for the milk cows, malt-dust; and dare venture to affirm that they are much more profitable than either turnips or cabbages. Once, when my potatoes grew low, I desisted giving them to the milking cows. Immediately, though fed with the best hay, they fell off amazingly in their milk. I therefore began again, and in a week's time they gave better than one-third more butter. I own this accidental discovery gave me much satisfaction, as it confirmed my opinion, that potatoes boiled are an excellent winter food for cattle. Their culture is not so difficult, at least not so precarious, as either turnips or cabbages. Their value is superior, and there is no risk of their giving a disagreeable taste either to butter or milk. Add to this the vast increase of the Howard potatoe, and its equality with the best sorts when used for cattle.

T. B. B.

ENUMERATION OF PATENTS LATELY ENROLLED.

1803. *March* 8. BARKER CHIFNEY, of London, gentleman; for improvements in the manufacturing and preparing roofing slates, and in laying the same.

—— 10. James Bennet, of Oldham-street, Manchester, Lancashire, manufacturer; for a method of felting woollen-cloth, and also of felting cloth manufactured of sheep's wool, and other combined materials.

March 16. Samuel Miller, of the parish of St. Pancras, Middlesex, Engineer; for his improved method of applying the repelling or repulsive force of nature, in order to give a stronger impulse to any substance or body in motion, as well as to destroy the bad effects of its baneful activity.

——— 21. Edward Shorter, of New Crane, Wapping, Middlesex, Mechanic; for an apparatus for working of pumps.

——— 23. Robert Clark, of Fitzroy-place, Middlesex, instrument Maker; for improvements in the construction of a truss, to be worn in the case of rupture.

——— 23. Deers Egg, of the parish of St. Martin's in the Fields, Middlesex, Gun-maker; for improvements upon fire-arms.

CRITICAL CATALOGUE.

I. *General View of the Agriculture of the County of Peebles, with various Suggeſtions as to the means both of the local and general Improvement of Agriculture. By the Rev. Mr. Charles Findlater, Miniſter of the Pariſh of Newlands, in the County of Peebles, with a Map of the County, and other Engravings,* 8vo. 483 *pages.*

IN the introduction prefixed to this work the author enumerates the cauſes which have retarded the advance towards a perfect theory of agriculture, and proceeds to ſtate what is the eſtabliſhed practice as to tillage, the alternation of crops, and recruiting the fertility of the ſoil.

He then commences his ſurvey, in which, for the ſake of uniformity and facility of reference, he has adopted the ſyſtem preſcribed by the Board of Agriculture.

We ſhall endeavour to follow him through it as cloſely as our limits will allow, and ſhall be careful to mark ſuch parts as appear to deſerve the notice and attention of the practical farmer.

Peebleſhire, or Tweed-dale, is about 30 miles in length, and 22 in its greateſt breadth, and contains nearly 230,000 Engliſh acres. Its medium elevation is 1150 feet above the level of the ſea, which, together with its northerly latitude (55° N.) renders the ſeaſons backward, and the climate ſevere. Natural graſs is not cut before the middle of Auguſt, and the harveſt is reckoned early when the whole is got into ſtack before the end of October.

From the ſame cauſes froſts deſtructive to vegetation are frequently experienced, and even in the month of July, the crops of bigg or beer have ſometimes been completely cut off by them.

By far the greater part of this county never was, and probably never will be ploughed. Of the lands under culture there is a great variety of ſoil, as moſs, clay, ſand, and the ſame mixed in every variety of proportion. The county is almoſt deſtitute of wood, but has quarries of free-ſtone, whin-ſtone, lime-ſtone, and coal in abundance. The Tweed whence this county receives its appellation is its principal river.

Notwithſtanding, the author aſſerts, that great improvements have been made, and that the ſituation of every rank is greatly

altered for the better, his deſcription of the Scottiſh cottages will give the Engliſh reader no very favourable ideas of the accommodations of the lower claſſes in the ſiſter kingdom.

"The general deſcription," he ſays, "of the cottage of a labourer or tradesman, who keeps a cow, is, a houſe of 18 or 20 feet by 15 or 16, within walls; the door is in front, cloſe by one of the gables; two cloſe beds form the croſs partition, dividing the ſpace occupied by the family from a ſpace of four feet from the gable at which you enter; where ſtands the cow behind one of the beds, with her tail to the door of the houſe. There is one window in front near the fire gable, oppoſite to which, at the oppoſite wall, ſtand the *ambry*, or ſhelved wooden preſs, in which the cow's milk, and other family daily proviſion are locked up; and, above it, lying againſt the ſlaunt of the roof, is the *ſkeif*, or frame, containing ſhelves, with croſs bars in front, to prevent the utenſils ſet upon its ſhelves from tumbling off from its overhanging poſition; the ſhow of the houſe depending much upon the quality and arrangement of the crockery and other utenſils placed thus, in open view, upon the ſkelf. A cheſt, containing the family wardrobe, ſtands in front of one of the cloſe beds, ſerving alſo for ſeats. The cloſe beds are alſo furniſhed with a ſhelf at head and foot, upon which part of the family apparel is depoſited, to preſerve it from the duſt. A wooden armed chair for the huſband, when he arrives fatigued from his labour, and a few ſtools for the reſt of the family, and a plunge churn, completes the inventory of houſehold furniture; to which only a ſmall barrel for ſalted fleſh, and another for meal, may be added, if the family can afford to lay in ſtores, and are not from hand to mouth."

Their cooking utenſils are confined to a ſmall iron-pot and a girdle or iron-plate for baking their oat-cakes. If to the above be added a barrel to hold ſalt, a pail, and two or three veſſels for milk, we have a complete inventory of the effects of a Scotch labourer.

The author enters at conſiderable length into the management of farms. Theſe are divided into ſheep paſture and arable farms. Beſides the ſale of the ſheep themſelves, wool is likewiſe an article of ſale from all the ſheep-farms. Some of it goes to Stirling, a greater quantity to Hawick, but the greateſt part to Yorkſhire for ſerges, ſhalloons, carpets and coarſe cloths. Sheep's milk cheeſe is alſo ſold from a few of these farms, and ſeveral young black cattle, and young horſes, but in none to any great extent. The ſame may be ſaid of the produce of the dairy and of corn.

The author ſuggeſts, that it would be a moſt effectual mode of improvement to encloſe the arable parts of the ſheep farms in this county with ſtone walls. They at preſent lie unincloſed, and hedges, he ſays, would be incapable of turning Tweed-dale ſheep.

Of the arable farms, although not depending on ſheep, but tillage, there are few that do not keep ſome ſheep of the fine wooled Engliſh breeds. Theſe farms are not near ſo extenſive as the ſheep farms. The principal ſtaple articles of their produce are butter and cheeſe, which, on account of the vicinity of Edinburgh, never fail to find a ready market.

The uſual duration of leaſes in this county is only nineteen years; ſome have lately been granted for a longer term, even 57 years, and

to the exertions that have enſued upon this ſecurity the author attributes the very important improvements that have recently been made in the agriculture of Tweed-dale.

From the author's account of the agricultural implements in uſe here, we ſhall take the liberty of making an extract or two.

"A *draining plough* of his own invention has been ſucceſsfully uſed by Mr. Sanderſon, upon his ſmall ſheep farm, which he rents near the village of Linton. It is drawn by ſix horſes; and by means of one coulter deſcending to the left from the beam, and another coulter (or wing like the cutting wing of a peat-ſpade,) riſing up to the right from the ſock, it cuts and clears out, at once, a drain of two feet by eighteen inches. It might be of great uſe in many ſheep farms, in draining ſoft boggy lands, where its operation would not be obſtructed by ſtones.

"*Fanners*, a winnowing machine, ſaid to be an invention of Papin, a Dutchman, are univerſally uſed through Scotland; it is believed to be but of late, if this machine is, as yet, ſo univerſal in England. No farmer in Tweed-dale, renting to the extent of 20l. or even leſs, is unprovided of fanners. The machine, even under the late dearth of wood, coſts not above 2l. 10s. Its principle is, the whirling round, with great velocity, four flat boards or vanes fixed to an axis within a wooden frame, by means of a handle and multiplying wheels. The current of air thus generated, is confined by the frame, which covers the vanes all round, with an exception of an opening for admitting air, and directs the current to the further end of the frame, which is open. Meanwhile, from a hopper fixed upon the top of the frame with a looſe bottom, (which is agitated by the motion of the machine,) the grain falls down through the frame, before the current of air; the chaff is blown out at the further end of the frame; the lighter grain goes over a partition into a receptacle; and the heavy grain, which the wind cannot force over the partition, falls nearly perpendicular into the bottom of the frame, whence it is diſcharged by an aperture for the purpoſe.

"The number of fanners in Tweed-dale is nearly 350; they are now an appendage of all the thraſhing-machines.

"*Thraſhing-Mills.*—The number of theſe, as already obſerved, has greatly increaſed, amounting at preſent to 18 going by water, and 24 driven by two horſes each. Though the arrangement of machinery can render the ſmalleſt power equal to the overcoming of the greateſt reſiſtance, by multiplying proportionally the velocity of the agent's motion, over that to be ultimately communicated to the patient; yet, where a given reſiſtance is to be overcome, and a given velocity is at the ſame time to be preſerved, no ſuch aid can be derived from mechanical contrivance; but a ſtrong acting force is indiſpenſably neceſſary. Such is the caſe in the thraſhing-mill; in regard to which, the moving power can probably admit of little aid from contrivance, excepting merely what may be given it by the diminution of friction.

"The ſpeedy diffuſion of ſuch an expenſive machine, in ſuch a poor county as Tweed-dale, to the difference of from thirteen to forty-four in the ſpace of three years, may be juſtly held as a deciſive proof of the great utility of the invention. The extent of yield of grain,

from this mode of thraſhing, above what is procured from thraſhing by flails, I have underſtood, from thoſe well acquainted with the ſubject, to amount to the odds of one in twenty; and that the wages of the labourers required to aſſiſt, when the machine is at work, amount to no more than what would have been neceſſary to merely winnow by the fanners the quantity of grain made entirely fit for market by this operation of the machine; and that, upon a farm of any conſiderable extent, the amount of this ſaving of hand-labour would readily repay the whole of the capital ſunk upon the machine, in the ſpace of three years.

The only effectual method of incloſure in this county is by ſtone dikes. A thorn hedge, the author ſtates, is abſolutely incapable of turning Tweed-dale ſheep, and "more money has been unprofitably thrown away in attempting to make fences of thorn hedge than upon any other abortive attempt at improvement."

In a country abounding with moſs like Scotland, the application of that ſubſtance to the purpoſe of manure cannot fail to be attended with conſiderable advantage. The author gives the following account of preparing it for that uſe:

"Let a row of cart loads of new made dung be laid out along the crown of a dry ridge, on which the midden is to be formed, cloſe to one another: let two rows of moſs be then depoſited, one on each ſide of the row of dung. The midden is then thus formed: the workman begins at one end of the rows; he throws forward ſo much from the rows of moſs as ſhall make a bottom of ſix inches thick; he then throws, upon this bottom, dung, from the dung row, to cover it ten inches thick; then, above this, ſix inches of moſs; then four or five of dung; then ſix more of moſs; then a thin layer of dung: he then covers the outward end, and the two ſides, with moſs, and lays on moſs a top till it is raiſed to the height of four feet, or four and a half. Having thus completed this part, he proceeds, as before, till the whole is formed. Aſhes of coal, peat, or wood, ſhould then be ſpread over the top of the midden, at the rate of about one cart load to twenty-eight carts of compoſt; or, if theſe are not to be had, about half the quantity of finely powdered ſlacked lime.

"The moſs uſed ſhould be thrown out of the moſs-pits weeks or months before being depoſited for the midden; that, by draining and drying, it may not check the fermentation intended to be produced, through its exceſs of preſſure, or of moiſture. Care muſt be taken, for the ſame reaſon, not to ſet a foot upon the compoſt when making up. And if the dung uſed has little litter in it, freſh weeds, potatoe ſhaws, &c. or even ſawings of timber, muſt be added in making the compoſt, to keep it open.

"In mild weather, ſeven carts of common farm dung is ſufficient for twenty-one of moſs. In proportion to the cold, more dung is neceſſary for proper fermentation. In Summer the fermentation may come on in ten days, or ſooner; it is apt to exceed, and to fireſang the materials; a ſtick ſhould be kept in it, to try the heat; and if it ariſes to near blood heat, it ſhould either be watered, or turned over, when freſh moſs may alſo be added. It ſhould thus remain untouched till three weeks before uſing; when it ſhould be all turned over, upſide down, and inſide out. This compoſt is equal, weight for

weight, to the beſt dung. When the moſs is uſed raw, it ſhould be laid upon the midden lumpy, to admit air.

The population of Peebles, according to the returns made in purſuance of the act of 1801, amounts to 8802 individuals, being at the rate of 24 to the ſquare mile.

Among the obſtacles to improvement in this county the author mentions the deficiency of capital, popular prejudices, poorneſs of the ſoil, but particularly the want of proper modes of ſtoring up grain ſo as to preſerve it from natural decay, and from the deſtruction of vermin. The prohibition of the exportation of wool, and bad roads, are likewiſe mentioned as tending to produce the same effect. To theſe may be added the total want of inſtitutions for diſſeminating agricultural knowledge.

A conſiderable portion towards the concluſion of this volume is occupied with notes on vorious particulars treated of in the preceding report. These relate principally to ſpeculative and theoretical ſubjects, and are therefore not calculated to afford much information to the practical farmer.

They are ſucceeded by an appendix conſiſting of two parts. The firſt is an account of Whim, the ſeat of Sir James Montgomery, Bart. of Stanhope, late Lord Chief Baron of his Majeſty's Court of Exchequer, with ſome obſervations upon the culture of ſlow-moſs and of ploughable moſs, from information communicated by him to the author.

The ſecond part is an eſſay on the diſeaſes of ſheep, drawn up from communications furniſhed by Dr. Gilleſpie of Edinburgh, together with hints by Dr. Coventry, Profeſſor of Agriculture at the Univerſity of that city. Each diſeaſe is here briefly and ſimply treated of, and a method of cure preſcribed, which we intend laying before our readers in our next number.

II. Allgemeine Geſchichte der Obſtcultur von den Zeiten der Urwelt an &c. General Hiſtory of the cultivation of Fruit-trees from the earlieſt ages to the present time, vol. I. containing the Hiſtory from the earlieſt ages to Conſtantine the Great: with 3 plates, by Dr. Fr. Karl Ludw. Sickler 8vo. 507 pages.

The worthy Author of this work had long conceived the deſign of giving a ſyſtematic description of the fruits known to the ancients, of the nations that had principally cultivated them, of the channels by which their culture was introduced into Germany, and of the perſons who have particularly diſtinguiſhed themſelves in this way. A moſt extenſive knowledge of Antiquity furnished the materials for this undertaking, of which this firſt volume affords inconteſtible evidence, it brings the Hiſtory down to the time of Constantine. It is divided into the following general heads:

1. The primitive ſtock of all fruit-trees originated in the countries ſurrounding the Caſpian Sea, in Aſia Minor, Syria, Phenicia and Paleſtine. The Phenicians and Phoceans, and more particularly the Greeks and Romans, introduced theſe kinds into the other cultivated countries. None of the fruit-trees was originally a native of Europe, and none as far as we can learn from Hiſtory, has been brought us from Africa or America.

2. Fruit-trees are natives of only thoſe countries of Aſia, situated between the 36th and 53d. degree of Latitude, and it is only the ſame

climate and the ſame Latitude that have been favorable to the culture of fruit-trees in Europe.

3. The primitive ſpecies have varied more and more with time. Only three kinds of pears were known at the time of Ariſtotle and Theophraſtes; at the time of Cato there were ſeven, and at the time of Pliny and Columella 56. The other fruit-trees present ſimilar phenomena to thoſe of the pear-tree. Their varieties are either multiplied by the culture of the ſpecies itself, or by engrafting. The different varieties of the ſame ſpecies were combined together and formed ſub-varieties.

We are aſtoniſhed to ſee in the curious and learned explanation, which the Author gives of the various methods of cultivating the earth in different ages, how very much they differ from the present practice. Almoſt all the methods of engrafting were known to the ancients, but unfortunately they give us but few details on the formation of varieties.

The Author in his work gives complete extracts of the ancient claſſics that treat of theſe ſubjects, and at the ſame time enumerates the ſpecies and varieties known at each period of Hiſtory. It is from theſe inveſtigations that he has attempted to form a chart, on which are expreſſed by ſigns the fruits and the different routes, by which fruit-trees were diffuſed over the earth till the time of Conſtantine. It is obvious that from our imperfect knowledge, this chart cannot always be compleat nor founded on perfectly accurate data, and that the learned Author has ſometimes been obliged to have recourse to probability and to comparative reasoning; but he has not made an improper uſe of conjectures. It is certain for example that the olive and fig-tree, according to Strabo, were brought by the Phoceans from Aſia Minor to the South of France, and that according to Pliny the cherry-tree was carried from Pontus to Italy, into Gaul, and from thence at the time of Lucullus into England. It is certain likewiſe that the vine, the fig, the pear and the apple-tree were brought by Helico to Switzerland; that the Roman armies carried the fig-tree from Carthage to Rome, that the quince came from Crete to Italy; that Papinius tranſported the plumb and peach-tree from Africa to Italy, &c. All theſe are hiſtoric facts; but the vicinity of the places where the different ſpecies had their origin, the rivers which run through thoſe parts, the character of the people which inhabit them furniſh leſs precise data for the Hiſtory of transplantation. Yet it is only from ſuch like that the Author ingeniouſly concludes, that the fig-tree was carried from Tyre and Sidon to Carthage, and thence paſſed into Italy; and that the peach-tree was introduced into the same country from Egypt ſo late as the time of Cato. The chart indicates, the probable ſituation of the garden of Eden, of Mount Ararat, where Noah planted the firſt vine, and traces Hercules route to the garden of the Hesperides. It likewiſe ſhews the origin of the different fruit-trees. The author, for example, places the apple, the pear, the cherry, the nut in Pontus; the plumb in Syria; the vine in Albania; the quince in Crete; the peach in Perſia and Egypt; the apricot in Armenia; the fig, the mulberry and pomegranate in Paleſtine and other places; the citron in Media; the olive and walnut near the Caſpian Sea; the raſpberry, cherry, the medlar in the vicinity of Mount Ida; the

ſervice tree in Aſia Minor; the almond in Idumea, and the cheſnut in the environs of Sardes. On the ſame chart we find the probable ſituation of the gardens of Alcinous, Cato, Columella, Lucullus, Laertes, Midas, Pliny, Palladius, Seneca, Semiramis and Varro. An explanatory table points out the paſſages in the work in which are contained the proofs which the author adduces in ſupport of theſe opinions.

Our limits will not allow us to enter into farther details on this work; but we believe we have ſaid ſufficient to prove with what ſucceſs the author has opened a freſh route in treating of a ſubject hitherto untouched. The author, M. Sickler, who is very young, poſſeſſes a very extenſive knowledge of languages, antiquities, natural hiſtory and the arts, and there is every reaſon to believe that his future productions will be equal in merit to that here announced.

HISTORY.

National Transactions.

GREAT BRITAIN.

AFTER a ſhort reſpite of two years, this country is again plunged into a ſtate of warfare. On Monday, May 16 his Majeſty's Miniſters brought down a Meſſage to the two houſes of Parliament, to the following effect:

"GEORGE R.

His Majeſty thinks it proper to acquaint the Houſe of Commons, that the diſcuſſions which he announced to them in his Meſſage of the 8th of March laſt, as then ſubſiſting between his Majeſty and the French Government, have been terminated; that the conduct of the French government has obliged his Majeſty to recall his Ambaſſador from Paris, and that the Ambaſſador from the French Republic has left London. His Majeſty has given directions for laying before the Houſe of Commons, with as little delay as poſſible, copies of ſuch papers as will afford the fulleſt information to his Parliament at this important conjuncture.

"It is a conſolation to his Majeſty, to reflect that no endeavours have been wanting on his part, to preſerve to his ſubjects the bleſſings of peace, but under the circumſtances which have occurred to diſappoint his juſt expectations, his Majeſty relies with confidence on the zeal and public ſpirit of his faithful Commons, and on the exertions of his brave and loyal ſubjects to ſupport him in his determination to employ the power and reſources of the nation in oppoſing the ſpirit of ambition and encroachment which at preſent actuates the Councils of France, in upholding the dignity of his Crown, and in aſſerting and maintaining the rights and intereſts of his people."

On the ſame day letters of Marque and Repriſal, againſt the ſhips, goods, and ſubjects of the French Republic were iſſued.

On Wedneſday the 18th, the papers relative to the negociation between this country and France, were laid before Parliament. They contain a great maſs of matter, the moſt intereſting, perhaps, that was ever ſubmitted to the people of this country, and the peruſal of them can excite but one ſentiment in the minds of every man attached to the honour and intereſts of his country; a ſentiment of regret, but at the ſame time of indignation, againſt the unjuſt proceedings of the government of France.

expectation, as each ſtalk produced from ten to fifteen, ſome of them uncommonly large. Should this method be generally adopted, it will prove highly beneficial, and the farmer's induſtry in cleaning his ground will thus be rewarded; the man of fortune will give theſe ſtems, hitherto conſidered uſeleſs to his cottagers, to plant in their gardens; while thoſe who have ſmall potatoes, that are uſually thrown to the hogs may now turn them to a better account, by planting them in beds, in November, and removing their ſtalks in the ſpring. This method of culture, particularly in wet ſoils, may probably ſucceed better than that commonly practiſed; as there would be no danger of their rotting, which the ſeed potatoes are apt to do: thus the markets might be ſupplied, not only with the root itſelf, but alſo with the ſtems, which could be ſold in the ſame market as cabbage plant.

A ſhow of rams lately took place at Ledbury, Herefordſhire, for a conſiderable wager, between three gentlemen of the county of Hereford, when the premium was adjudged to Mr. Dobbs, of Little Marcle. One of the unſucceſsful candidates had taken his ram thither from the weſt of Glouceſterſhire, in a carriage, at a conſiderable expence.

We inſert the following article as a remarkable inſtance of fecundity in a cow, the property of a farmer, in the pariſh of Branchley, which calved, before ſhe was eight years old, eleven calves, and what being ſtill more remarkable was three years old before ſhe had one. They are all now living. Another farmer in the ſame pariſh, having five calves, the produce of three cows this ſpring. One of the cows is a three yearling, the firſt time of calving, and brought twins.

The Archbiſhop of Canterbury has recently proved himſelf an exemplary encourager of incloſing waſte lands, within the county of Kent. Moſt of the waſtes for ſeveral miles on this ſide Canterbury, belonging to that See, his Grace has kindly allotted in different portions, from one to ten acres, to various deſerving and induſtrious men, on trifling fines, for the term of 30 years. More than 40 neat white cottages have already been erected upon them, to the great comfort of as many poor families, and the credit of an extenſive diſtrict, which a well directed benevolence has ſo highly ornamented, and eſſentially approved.

An experienced farmer recommends, that, when the young wheat ſuffers ſeverely from the wire-worm at the roots, and it becomes adviſeable to plough up the demoliſhed plants, neither barley nor oats ſhould be ſown, for they generally follow the fate of the wheat-crops. But that potatoes ſhould be immediately planted on ſuch ground, as the beſt *ſuccedaneum*, in a national point of view, for a wheat-crop. They have alſo theſe additional advantages to recommend them, viz. That from the bitter which prevails in their vegetation, they reſiſt the attack of the wire-worm, which becomes much leſſened in number for want of food; and from the mode of cultivation proper to the potatoe, the land is prepared in the beſt way for another wheat-crop, or for vetches.

An ewe (of the ſmall mountain-breed) the property of Mr. George Cartner, of Heſket New Market, lately yeaned four fine ewe lambs; and what was ſomething ſingular, the parent dam had four teats which gave a profuſion of milk, for the ſupport of her numerous progeny.

At the ſtock fair, at Stamford, the jobbers tried to keep up the prices of beaſts and ſheep, although the number of each was more than uſual at May fair. It waslate in the day before much buſineſs was done, at declining prices.

The great markets at Lincoln and Boſton were never better attended than they have been this ſeaſon; there were prodigiouſly large ſhews of ſheep, which we underſtand went off dearer at Lincoln, from 5s. to 10s. a head, than at Boſton.

Worceſter ſpring fair was well ſupplied with cattle and ſheep; the former were much cheaper than of late, and many were driven away unſold; the

latter likewiſe declined in price. Horſes were numerous, and good ones fetched high prices, but thoſe of an inferior deſcription were dull of ſale.

At Ledbury fair, beſt making cheeſe ſold from 60s. to 63s. per cwt. and ſeconds from 48s. to 56s. There was a good ſhew of cattle, which, however, went off very ſlowly, and many were driven to other fairs.

At a late market at Abingdon, there was a large ſupply of fat and ſtore pigs, about 700, which ſold about 4s. in 20s cheaper; notwithſtanding which upwards 500 remained unſold at a late hour.

At Glouceſter fair, cattle of almoſt every kind met a dull ſale, at reduced prices: this will be obſerved to have taken place at all the late neighbouring fairs. Fat cows ſold at 6½d. per lb. which is about 1d. cheaper than they were. Cows and calves, and barren cows, had a ſomewhat readier ſale, but likewiſe at reduced prices. Of ſheep, there was a good ſupply; few, however, was bought at inferior prices. Horſes were very dear: but there were not many good ones.

A fair for horſes and pedlary-ware was held at Cardigan; but very few horſes were ſold, and thoſe at reduced prices.

At Wotton under-Edge, fine pig meat ſold at 6d. per lb. in the laſt market; and even met a dull ſale.

The laſt year's hop-duty now appears to have been—old duty, 15,463l. 10s. 5¾.; additional duty, 18,152l. 16s. 7d.—Total 33,616l. 7s. 1½

It has been found that wet ſtraw and other green plants burnt in a ſlow mouldring manner before the wind, have the effect, by the diffuſion of their ſmoke, to prevent thoſe nipping froſts, which are at this ſeaſon, and earlier in the year, from being fatal to the buds and ſprouts of vegetables of all ſorts.

At Lewes Cliff Fair, the ſhow of horned cattle was unuſually large; and the attendance more numerous than had been witneſſed for many years. The ſale was extremely dull, and the greateſt part of the ſtock, we believe, was driven away unſold.

At Newick fair country ſtock was heavy of ſale, owing to the late cold weather, which has for theſe three weeks paſt put a ſtop to the growth of graſs, except in warm upland meadows.

Manufactures and Useful Arts.

SOCIETY FOR THE ENCOURAGEMENT OF ARTS, MANUFACTURES, AND COMMERCE.

We are informed that the Rewards conferred by the above-named Society will be preſented this day, May 31, to the reſpective Candidates, by his Grace the Duke of Norfolk, the Preſident, in the following order.

IN AGRICULTURE.—To the Right Hon. the Earl of Fife, for his extenſive plantations of Foreſt Trees, and other Agricultural Improvements in North Britain, the Gold Medal.

To Lord Viſcount Newark, for encouraging the growth of Oak Timber, by ſowing Acorns and planting Oaks, in Nottinghamſhire, the Gold Medal

To John Shirreff, Eſq. of Captain Head, North Briton, for his plantation of Oſiers, Claſs 9, the Gold Medal.

To the Rev. T. C. Munnings, of Eaſt Dereham, in Norfolk, for his experiments on the culture and preſervation of Turnips, the Gold Medal.

To Mr. John Knapping, of South Shoebury, in the county of Eſſex, for gaining 230 acres of Land from the Sea, the Gold Medal

To John Chriſtian Curwen, Eſq. M. P. of Workington Hall, in Cumberland, for his experiments on feeding Cattle with Potatoes, the Silver Medal.

To the Rev. Edmund Cartwright, of Woburn, in Bedfordſhire, for a three-furrow Plough, the Silver Medal.

To Dr. H. Ainſlie, of Dover-ſtreet, London, for his plantations of Timber Trees, near the Lakes of Windermare and Coniſton, the Silver Medal.

To Benjamin Waddington, Eſq. of Lanover Houſe, near Abergavenny, for improvements of Boggy Land, in South Wales, the Silver Medal.

To Mr. David Charles, of Weſtmead Langhorne, Carmarthenſhire, for a Machine for laying Land level, the Silver Medal.

To Mr. Robert Green, of Weſturrating, in Cambridgeſhire, for a Drill Machine for ſowing Peas, Beans,&c. the Silver Medal and Ten Guineas

In POLITE ARTS.—To Mr. Thomas Ryder, of Titchfield-ſtreet, Oxford Road, for a Line Engraving, Claſs 116. The meeting of Vortigern and Rowena, the Gold Medal.

To Mr. Richard Auſtin, of Paul's Alley, Barbican, for an Engraving on Wood. The ſubject England, Scotland, and Ireland, receiving the Offerings of Genius, alluding to the Rewards of this Society, extending to the united empire, the Silver Medal and Ten Guineas.

To Miſs Jackſon, of Hanover-ſtreet, Hanover-ſquare, for a Drawing in Chalks, of a Veſtal, Claſs 103, the Gold Medal.

To Miſs Emma Farhill, of Mortimer-ſtreet, Cavendiſh-ſquare, for an Original Drawing, Claſs, 104. The Death of Cleopatra, the Silver Medal.

To Miſs Blackburne, of Park-ſtreet Weſtminſter, for a Drawing of Jupiter Ammon, the Silver Medal.

To Miſs Paytherus, of Norfolk-ſtreet, for an Original Portrait of her Siſter, the Silver Medal.

To Mr. J. T. James, of the Charter Houſe School, for a Drawing of Worceſter Cathedral, Claſs 102, the Silver Medal.

To Miſs Mary Ann Gilbert, of Devonſhire-ſtreet, Portland Place, for a Painting, a View of St. Mark's Place, in Venice, the Silver Medal.

To Miſs Beauchamp, of Wimpole ſtreet, for a Painting, a Sea View, a copy from De Vlieger, the Silver Medal.

To Miſs Emma Smith, of King-ſtreet, Covent Garden, for an Hiſtorical Drawing of Achilles and Thetis, an original compoſiton, Claſs 110, the greater ſilver Pallet.

To Mr. James Hopwood, jun. Paradice Row, Iſlington, for a Drawing of Outlines, from a Caſt of the Atlas, Claſs 105, the greater Silver Pallet.

To Mr. Hugh Neill, of Warwick-ſtreet, Golden-ſquare, for an Original Drawing of Brecknock Priory, in South Wales, Claſs 107, the greater Silver Pallet.

To Mr. George Shepherd, of Radcliffe-row, City Road, for an Original Drawing of St. Alban's Abbey, Claſs 108, the leſſer Silver Pallet.

To Mr. R. Horwood, of Liverpool, for a Map of London, on a very extenſive ſcale, Fifty Guineas.

In MANUFACTURES.—To Mr. Thomas Barker, of St. Mary-le-bone, for an improved mode of Warping Webbs for Weavers, Ten Guineas.

In MECHANICS.—To Dr. John Winterbottom, of Newbury, in Berkſhire, for a Machine for clearing Turnpike Roads from mud, the Silver Medal.

To Mr. James Woart, of Fulham, for his method of raiſing a Roof ſunk in the middle, the Silver Medal and Twenty Guineas.

To Mr. Edward Maſſey, of Hanley in Staffordſhire, for his ſtriking part of an Eight Day Clock, Twenty Guineas.

To Mr. John Prior, of Neſsfield, in Yorkſhire, for his ſtriking part of an Eight Day Clock, Thirty Guineas.

To Mr. Thomas Fothringham, of Alloa, near Stirling in Scotland, for making Mill Stones for grinding Wheat from the Abbey Craig Quarry, in that neighbourhood, Fifteen Guineas.

To Mr. J. D. Roſs, No. 10, Bateman's Buildings, Soho-ſquare, for a Ring with a contracting and expanding power to fit various fingers, Ten Guineas.

To Mr. William Bowler, of Finſbury-ſtreet, for a Screw Preſs, with a peculiar expanding power, Ten Guineas.

To Mr. John Antis, of Fulneck, near Leeds, for a method of aſcertaining the number of times that Minerals or other things have been brought up from a mine in any given time, Ten Guineas.

To Mr. Edward Maſſey, of Hanley, in Staffordſhire, for detached Eſcapements of Pendulum Clocks, Fifty Pounds.

In COLONIES AND TRADE.—To the Honourable Joſeph Robley, of Tobago, for a conſiderable addition to his Plantation of Bread-Fruit Trees, in that Iſland, the Gold Medal.

An Account of the Number of Noblemen and Gentlemen elected Members ſince October laſt, whoſe titles and names are as follow:

His Grace the Duke of Bedford, Sir Francis Laforey, Bart. Major General Sabloukoff, of Peterſburgh, Mr. John Barwiſe, Edward Weatherby, Eſq. William Kitchener, Eſq. William Crippen, Eſq. Stephen Freeman, Eſq. Rembrandt Peale, Eſq. Samuel Melliſh, Eſq. Hugh Edwards, Eſq. James Eſdaile Hammett, Eſq. Dr. William Dickſon, James George Upham, Eſq. John Thomas Barber, Eſq. Edward Simeon, Eſq. Mr. Robert Wright, Mr. Joſeph Stutely, Jun. John Trelawny, Eſq Mr. Thomas Melliſh, Thomas Peregrine Courtenay, Eſq. Mr. William Stapleton, Peter Warren, Eſq. William Sherwood, Eſq. Mr. Samuel Miller, Mr. Charles Richardſon, Mr. John Woodburn, Wilhelm Bernhard Linſtow, Eſq. of Copenhagen, Claus Eduart Wiinholt, Eſq. of Copenhagen, William Hawes, M. D. Jens Friedenreick Hage, Eſq. his Daniſh Majeſty's Commiſſioner, Copenhagen, Henry Hoſte Henley, Eſq. Thomas Talbot Gorſuch, Eſq. Azariah Pinney, Eſq. Peter Cox, Eſq. Chriſtopher Johnſon, Eſq. William Cowper, Eſq. Mr. John Beaumont, Mr. Charles Baldwin, Mr. Joſeph Wright, John Parke, Eſq. Edward Rogers, Eſq. Mr. Alexander M'Cauley, John Scott, Eſq. John Sidney, Eſq. Luke Hogard, Eſq. Mr. John Berkeley, Mr. Roycroft Wrather, Titus Hibbert, Eſq. Lewis Loyd, Eſq. Edward Swaine, Eſq. Mr. Richard Tapſter, George Naylor, Eſq. Stephen Shewell Hunt, Eſq. Mr. R. B. Wilſon, Mr. William Roper, Arthur Aikin, Eſq. G. Bentley, Eſq. Charles Pearſon, Eſq. Lawrence Francis Dillon, Eſq. Mr. James Harriſon, William Bentley, Eſq. Thomas Jones, Eſq. Richard Firmin, Eſq. John Wilkes, Eſq. John Curwood, Eſq. John Capel, Eſq. Thomas Gill, Eſq. Mr. Clarkſon, Mr. Hodgkinſon, John Simeon, Eſq. Mr. B. Hooke, Mr. James Peter Kingſton, Mr. John Sharpe, D. Hopkins, Eſq. Mr. James Bevans, Mr. Joyce Gold, James Thompſon, Eſq. Mr. Nicolas Paul Geneva, Peter Richardſon Eſq. Charles Platt, Eſq. Thomas C. Palmer, Eſq. jun. Mr. John Hatchett, Rev. Jeremiah Joyce, James Hebden, Eſq. Samuel Greig, Eſq. George Duckett, Eſq. Edward Morgan, Eſq. John Buckſhaw, Eſq. Mr. Joſiah Rhodes, Captain John Hall, Mr. George Moneypenny, John Roberts, Eſq. Richard White, Eſq. William Strutt, Eſq. Joſeph Strutt, Eſq. George Benſon Strutt, Eſq. Stephen Lee, Eſq. John Riland Mander, Eſq. John Wharlton Bunney, Eſq. Mr. John Miers, William Moffatt, Eſq. Rees Goring Thomas, Eſq. Philip Antrobus, Eſq. William Little, Eſq. James Akers, Eſq. John C. Weguelin, Eſq. Thomſon Bonar, jun. Eſq. Mr. William Cary, Thomas Watts, Eſq. Robert Pierce Cruden, Eſq. John Edwards, Eſq. Mr. Robert Bancks, Philip Beaver, Eſq. Theodore Moriſon, Eſq. Henry Browne, Eſq. George Silver, Eſq. Patrick Milne, Eſq. Mr. John Fowler, George Leame, Eſq. James Green, Eſq. George Friend, Eſq. George Jernegain, Eſq. Thomas W. H. Woodthorpe, Eſq. George Smith, Eſq. Mr. William Fuller Pocock, John Collin, Eſq. Sealy Fourdrinier, Eſq. David Davis, Eſq. Robert Iſherwood, Eſq. Edward Smith Foſs, Eſq. Hubert Corniſh, Eſq. William Peel Rew, Eſq. William Upſhaw, Eſq. William Vondenbelden, Eſq. of Quebec, (a correſponding Member,) Nicholas Gillbee, Eſq. Thomas Jervis, Eſq. M. P. Mr. J. G Fontain, John North, Eſq. John Lloyd, Eſq. Adam Oldham, Eſq. Charles Stewart, Eſq. Mr. John Plowman.

LONDON PRICES OF GRAIN for *May*, 1803.

MARK-LANE, *Monday, May 2.*

Price of Grain, on board Ship, as under

OUR ſupplies being ſhort, an inconſiderable advance has again taken place in moſt Grain to day. Wheat may be conſidered from 1s. to 2s. per quarter dearer. Barley and Malt are likewiſe on the riſe. Oats have a briſk ſale, and are ſomething dearer; and Peas and Beans fetch better prices than laſt week.

Wheat	47s to 61s	Malt	41s to 46s od	Grey Peas	28s to 31s od
Fine	62s to 63s 6d	Oats	16s to 21s	Small Beans	30s to 35s od
Rye	32s to 35s	Polands	22s to 23s 6d	Ticks,	27s to 31s od
Barley	20s to 25s 6d	White Peas	37s to 44s		

Monday, May 9.

The ſupply of Wheat at our Market this day, was not very great; beſt ſamples maintained laſt week's prices, but the inferior ſorts were rather dull and 1s. cheaper. Barley is rather dearer; we have plenty of buyers, and not a very great ſupply.—Oats are likewiſe briſk, the ſupply of that article being rather ſhort. In other articles we have no material variation.

Wheat	47s to 60s	Barley	21s to 26s od	White Peas	37s to 43s
Fine	61s to 62s od	Malt	41s to 45s 6d	Grey Peas	28s to 32s od
Rye	32s to 35s od	Oats	14s to 21s	Sm. Beans,	30s to 34s 6d
		Polands ditto	22s to 23s od	Ticks,	27s to 31s od

Monday, May 16.

In conſequence of the impreſs, and the proſpect of an immediate war, we had a number of buyers to-day. At firſt of the market, high prices were aſked for Wheat, but few, even of the beſt ſamples, were taken off at more than an advance of 2s. and 3s. per quarter, every other article of Grain partaking of the riſe.—Barley fetched 1s. 6d. per quarter more than laſt Monday; and Malt in proportion. Good Oats experienced an advance of half-a-crown a quarter.—Other articles, as well as Flour, are looking upwards.

Wheat	50s to 61s	Malt	43s to 47s od	White Peas	37s to 44s 6d
Fine	62s to 63s 6d	Oats	16s to 22s	Grey Peas	28s to 32s od
Rye	33s to 36s	Polands	23s to 24s 6d	Sm. Beans,	30s to 35s
Barley	23s to 27s od			Ticks	28s to 32s od

Monday, May 23.

Our ſupply of Wheat for this day's Market being but inconſiderable, and the buyers rather numerous, that article advanced full 5s. per quarter for the beſt mealing ſamples. Though we had no great demand for Barley and Malt, yet both were from 1s. to 2s. per quarter dearer. Peas and Beans are likewiſe on the riſe. Oats, and particularly the better ſorts, are alſo dearer.

Wheat	54s to 68s	Malt	45s to 49s 6d	Grey Peas	31s to 34s 6d
Fine	69s to 71s od	Oats	20s to 25s	Small Beans	32s to 36s od
Rye	33s to 36s od	Polands ditto	26s to 27s 6d	Ticks	28s to 33s od
Barley	25s to 29s od	White Peas	43s to 47s od		

Monday, May 30.

Our ſupply of Grain to-day are but moderate, yet Wheat (except for ſome few very prime ſamples which obtain top prices) have felt a depreſſion of full two ſhillings per quarter. Barley and Malt go off readily, there being but a ſhort ſupply of the former. Oats of the beſt ſort are rather dearer, and thoſe of middling quality ſell freely at laſt quoted prices. Peas and Beans are ſomething higher. Flour rather inclines downward, having a better ſupply than of late.

Wheat	50s to 65s	Malt	44s to 50s	Grey Peas	32s to 35s 6d
Fine	66s to 67s 6d	Oats	19s to 26	Small Beans	33s to 37s 6d
Rye	33s to 36s	Polands ditto	27s to 28s 6d	Ticks	30s to 34s
Barley	25s to 30s od	White Peas	44s to 51s od		

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

	First Week	2d Week	3d Week	4th Week	5th Week
Price of Hops.	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*
Bags.					
Kent — —	100 to 160	147 to 168	140 to 160	140 to 168	140 to 160
Suffex — —	100 to 147	140 to 160	140 to 158	140 to 160	140 to 155
Eſſex — —	100 to 140	140 to 155	140 to 150	140 to 160	140 to 155
Pockets.					
Kent (new) —	120 to 200	147 to 200	140 to 189	160 to 200	140 to 280
Suſſex — —	120 to 189	140 to 189	140 to 175	160 to 200	140 to 268
Farnham — —	260 to 231	140 to 189	240 to 280	240 to 280	200 to 240
Seeds.					
Canary Seed (per cwt.)	80 to 85	80 to 85	80 to 85	72 to 76	72 to 76
Red Clover ditto —	— to —	— to —	— to —	— to —	— to —
White Clover, ditto —	— to —	— to —	— to —	— to —	— to —
Trefoil, ditto —	— to —	— to —	— to —	— to —	— to —
Carraway ditto —	40 to 42	40 to 44	40 to 44	46 to 48	46 to 48
Coriander ditto —	28 to 30	28 to 30	28 to 30	30 to 34	30 to 34
Turnip, (per buſhel) —	24 to 40	22 to 46	28 to 48	20 to 44	20 to 40
Rye Graſs, (per quarter)	— to —	— to —	— to —	— to —	— to —
Cinque Foil, ditto —	— to —	— to —	— to —	— to —	— to —
Rape Seed, (per laſt) —	381 to 401	381 to 421	401 to 441	401 to 441	401 to 451
Meat at Smithfield,	*s.d.* *s.d.*	*s.d* *s.d.*	*s.d,* *s.d.*	*s.d.* *s.d.*	*s.d.* *s.d.*
To ſink the offal, p. ſt. 8lb.					
Beef — —	4 4 to 5 8	4 4 to 5 8	4 8 to 5 8	5 0 to 6 0	4 8 to 6 4
Mutton — —	5 0 to 6 0	5 0 to 6 0	5 0 to 6 0	5 4 to 6 4	5 4 to 6 0
Veal — —	5 0 to 6 4	5 0 to 6 6	5 0 to 6 6	5 0 to 7 0	5 0 to 6 6
Pork — —	4 4 to 5 4	4 0 to 5 0	4 0 to 5 0	4 8 to 6 0	4 8 to 5 6
Lamb — —	6 0 to 8 4	6 6 to 8 4	6 6 to 8 4	6 6 to 8 0	6 0 to 8 0
Head of Cattle—Beaſts about	2,000	2,000	1,800	1,800	1,500
——— Sheep and Lambs	8,000	8,000	7,000	7,500	8,500
Price of Leather.	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*	*d.* *d.*
Butts, 50lb. to 56lb. each	19 to 21	20 to 21	20 to 22	20 to 22	21 to 23
Ditto, 60lb. to 66lb. each	— to 23	22 to 23	23 to 23½	23 to 23½	23 to 24
Merchants Backs —	19 to 19½	— to 19½	19½ to 20	19½ to 20	20 to 20½
Dreſſing Hides —	19 to 20½	19 to 20	19 to 20	19 to 20	19½ to 21
Fine Coach Hides —	21 to 22	21 to 21½	21 to 22	21 to 22	21½ to 22½
Crop Hides for cutting	21 to 22	21 to 22	21 to 22½	21 to 22½	22 to 23
Flat Ordinary —	19 to 20	19 to 20	19½ to 20½	19½ to 20½	20½ to 22
Calf Skins, 30 to 40lb. *p.*doz.	28 to 34	28 to 34	28 to 34	28 to 34	28 to 33
Ditto, 50lb. to 70lb. do.	27 to 33	27 to 32	28 to 33	28 to 33	27 to 32
Ditto, 70lb. to 80lb. do.	26 to 28	26 to 27	26 to 27	26 to 27	26 to 27
Sm. Seals (Greenland)	45 to 48	45 to 48	45 to 48	45 to 48	45 to 48
Large do.	51 to 71	51 to 71	51 to 71	51 to 71	51 to 71
Tanned Horſe Hides	18s to 35s	20s to 35s	20s to 35s	20s to 35s	18s to 34s
Goat Skins *per* doz.	—s to —s	—s to —s	—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 4	4 2	4 1	4 2	4 3
Clare Market — —	4 4	4 3½	4 0	4 1	4 3
Whitechapel Market —	4 3	4 1	4 0	4 1	4 5½
Per ſtone of 8lb. Average	4 3½	4 2	4 0½	4 1½	4 3
Town Tallow — —	73 6	71 6	69 0	70 0	73 6
Ruſſia ditto (Candles) —	74 0	73 0	72 0	72 0	73 0
Ruſſia ditto (Soap) —	69 0	68 0	68 0	69 0	69 0
Melting Stuff — —	59 0	58 0	58 0	59 0	59
Ditto rough — —	42 0	42 0	40 0	40 0	42 0
Graves — — —	14 0	14 0	14 0	14 0	14 0
Good Dregs — —	10 0	10 0	10 0	10 0	10 0
Yellow Soap — —	76 0	78 0	78 0	78 0	78 0
Mottled ditto — —	88 0	86 0	86 0	86 0	86 0
Curd ditto — —	88 0	90 0	90 0	90 0	90 0
Candles, per dozen, —	10 0	11 6	11 6	11 6	11 6
Moulds — — —	13 0	12 6	12 6	12 6	12 6

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

	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.*	*sd.* *s. d'*
Beſt Heifers & Steers, pr ſt.	3 8 to 4 4	3 6 to 3 10	3 8 to 4 0	3 8 to 4 0	3 6 to 3 10
Middling — —	3 4 to 3 6	3 2 to 3 4	3 4 to 3 6	3 4 to 3 6	3 2 to 3 4
Ordinary — —	3 0 to 3 2	2 10 to 3 0	3 0 to 3 2	3 0 to 3 2	2 10 to 3 3
Market Calf — —	9 6	9 6	9 6	9 6	9 6
Eng. Horſe — —	15s to 18s	15s to 18s	15s to 18s	15s to 18s	15s to 17s
Sheep Skins — —	0 0 to 0 0	4 0 to 8 0	0 0 to 0 0	0 0 to 0 0	0 to 0 •
Lamb Skins — —	2 6 to 3 6	2 6 to 3 4	2 6 to 3 6	2 6 to 3 6	2 3 to 3 6
Prices of Hay and Straw.	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l. s. d.*	*l s. d.*
St. James's—Hay —	5 15 0	5 8 3	4 18 3	5 15 0	5 13 6
Straw —	2 8 0	2 3 6	1 19 0	2 2 3	2 5 0
Whitech.—Hay —	5 13 0	5 11 0	5 8 0	5 5 0	5 10 0
Clover —	6 16 6	7 — 0	6 10 0	6 13 6	6 18 0
Straw —	2 — 0	2 1 0	1 18 0	1 16 0	1 15 0
Uxbridge.					
New Wheat per load —	—l to —l	—l to —l	—l to —l	—l to —l	—l to —s
Barley — — —	—s to —s	—s to —s	—s to —	—s to —s	—s to —s
Oats — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Newbury.					
Wheat — — —	43s to 65s	50s to 64s	48s to 63s	50s to 66s	48s to 69s
New ditto — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Barley — — —	20s to 23s	20s to 24s	19s to 24s	20s to 25s	20s to 26s
Beans — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s
Oats — — — —	18s to 22s	19s to 24s	20s to 24s	21s to 24s	20s to 24s
Peas — — — —	—s to —s	—s to —s	—s to —s	—s to —s	—s to —s

BANKRUPTCIES AND DIVIDENDS,

Announced between the 20th of April, and the 20th of May, 1803.

BANKRUPTCIES.

The Solicitors Names are between Parentheſes.

AGNEW, J. Groſvenor ſquare, banker. (Potts, Creſcent, Jewin ſtreet

Arnſtein, A. Marcus, London ſtreet, Tottenham Court Road, linen draper. (Cockayne and Taylor, Lyon's Inn

Brewer, W. Rochetter, coach maſter. (Hill, Rood lane

Baynes, E. Rochford, ſhopkeeper. (Cutting, Bartlet's buildings

Beare, D. Kenſington, diſtiller. (Field, Richmond buildings, Soho

Bradneck, T. Walſall, ſadler and ironmonger. (Kinderly, Long, and Ince, Symond's Inn

Brown, J. Strand, gun maker. (Manning, Clement's Inn

Byron, J. Great Bell alley, merchant. (Aſpinall, Quality court, Chancery lane

Beavis, H. Upper Thames ſtreet, victualler. (Burden, St. Andrew's court, Holborn

Beckley, J. Southampton, grocer. (Parker, Palmer, and Cuppage, Eſſex ſtreet

Bentley, R. Wellcloſe ſquare, haberdaſher. (Willis, Warnford court

Bogue, F. Whitefriars, builder. (Newcomb, Vine ſtreet, Piccadilly

Binns, T. Great Barlow ſtreet, Marybone, water cloſet maker. (Gale, Bedford ſtreet, Bedford row

Barber, J. Manchener, machine maker. (Ellis, Curſitor ſtreet

Booth, T. and T. Ireland, Blakeley, dyers. (Seddon, Manchester

Chapman, R. Old Bethlem, chip and ſtraw hat manufacturer. (Kearſey, Inner Temple

Curtis, J. Oxford, wine and brandy merchant. (Biſhop, Eſſex ſtreet, Strand

Chater, W. Charles ſtreet, Long Acre, coach ſpring maker. (Freame, Little St. Martin's lane

Courties, J. and J. Stephens, Penryn, ſhopkeepers. (Reardon, Corbet court

Cowen, G. Hoxton, oil and colour man. (Crawford, Craven buildings, City Road

Croket, P. and T. Stevenſon, Liverpool, merchants. (Battye, Chancery lane

Claridge, W. Garden place, St. George's Fields, bricklayer. (Howard, Henrietta ſtreet, Covent Garden

Cox, J. Leighton Buzzard, corn and flour merchant. (Adams, Old Jewry

Donald, J. Aldermanbury, warehouſeman. (Shearman, Hart ſtreet, Bloomſbury

Dealey, T. and J. Hallet, Little Queen ſtreet, Holborn, coach makers. (Johnſon, Ely place

Dorſet, G. J. Johnſon, J. Wilkinſon, W. Berners, and J. Tilſon, New Bond ſtreet, bankers. (Cardale, Halleward, and Spear, Gray's Inn

Dricol, M. and J. Mudden, Union court, Broad ſtreet, merchants, brokers, and inſurers. (Palmer and Tomlinſon, Warnford court

Druery, T. Briſtow, ſhopkeeper. (Boyce, Norwich

Every, W. New Sarum, ſhopkeeper. (Phipps, Philpot lane

Freeman, W. St. Martins, Stamford Baron, grocer and cheeſemonger. (Smart, Staple Inn

Farmer, E. jun. Stratford, Eſſex, butcher. (Argill, Whitechapel road

Gwynne, D. Frith ſtreet, Taylor. (Hannam, Piazza Chambers, Covent Garden

Gane, J. Bridgewater, innkeeper. (Bleaſdale and Alexander, New Inn

Gardiner, H. Thames ſtreet, ſeedſman. (Wilſon and Broad, Union ſtreet, Southwark

Garrod, S. Saxmundham, taylor and draper. (Babet and Cox, Canton, Suffolk

Garrett, W. Rood lane, merchant. (Wild, Warwick ſquare

Gough, P. Birmingham, butcher. (Egerton, Gray's Inn

Gadd, J. Briſtol, dealer. (Hechis, Pancras lane

Gibbs, J. Birmingham, button maker. (Devon and Tooke, Gray's Inn

Hitchener, W. H. Bird in hand court, Cheapſide, warehouſeman, firm, W. H. Hitchener and J. Green. (Manning, Clement's Inn

Hudſon, J. Devonſhire ſquare, merchant, partner with Iſaac Strombom, of the Cape of Good Hope. (Gregſon, Angel court, Throgmorton ſtreet

Harris, J. Exeter, coach maker. (Drewe and Loxham, New Inn

Hippiſly W. Shepton Mallet, ſhopkeeper. (Warry, New Inn

Hebden, L. Warwick lane, coffee houſe keeper. (Thompſon, Portſmouth ſtreet

Herinſhaw, R. Palace wharff, Lambeth. (Murphy, Bouverie ſtreet

Hallam, B. jun. Bury St. Edmunds, chymiſt and druggiſt. (Lyon and Colbey, Bedford row

Jones, J. Wood ſtreet, Cheapſide, Leghorn hat warehouſeman. (Bousfield, Bouverie ſtreet

Jones, T. Old paſſage houſe, vintner. (Bigg, Hatton Garden

Johnſton, W. Whitehaven, mercer and woollen draper. (Clennell, Staple Inn

Jacobs, S. Tabernacle Walk, Finſbury ſquare, dealer. (Isaacs, Great George ſtreet, Minories
Ibbotſon, H. Pocklington, ſpirit merchant. (Sykes and Knowles, Boſwell court
Jacob, W. Poole, ſhopkeeper. (Mawley, Tottenham ſtreet
Jefferys, G. New Bond ſtreet, goldſmith. (Pellatt, Bartlett's buildings
Kelly, J. Liverpool, Flour dealer. (Parr and Thompſon, Liverpool
Kennett, R. formerly of New Bond ſtreet, Upholſterer now of Lincoln's Inn Fields, Tooth-ache-curer. (Duff Thavies Inn
Larkin, C. Rocheſter, coach maker. (Townſhend and Ruſſell, Southwark
Lloyd, F. Bridge ſtreet, Weſtminſter, linen draper.—(Clerk, Sadler's hall
Linnington, W. Exeter, currier. (Williams and Brooks, Lincoln's Inn
Lang, W. Riſhton, calico printer. (Blackſtock, Temple
Lightly, J. and J. Thompſon, Upper Thames ſtreet, ſtationers. (Loxley, No. 80, Cheapſide
Landell, W. Berwick, ſadler. (Sanderſon, Palſgrave place
Mathews, G. and T. Turnbull, Budge row, merchants. (Leverſedge, Fore ſtreet
Malins, W. Evesham, maltſter. (Smart, Staple Inn
Mackellar, D. Savage Gardens, wine merchant. (Oakley, New London ſtreet
Marſden, R. St. John's ſtreet, Upholſterer. (Kibblewhite, Gray's Inn place
Maſſey, C. New ſtreet, St. Catharine, wharfinger. (Michell, Union court, Broad ſtreet
Medford, M. Finſbury ſquare, merchant, partner with J. Liſle, jun. of Philadelphia. (Palmer and Tomlinſons, Warnford court
Maydwell, S. Wheeler ſtreet, Spital fields, ſilk dyer and dry ſalter (Evitt and Rixon, Haydon ſquare
Nicholls, W. Briſtol, ſoap boiler and tallow chandler.—(Price and Williams, Lincoln's Inn
Newman, C. late of Shakeſpear walk, now of Hall's rents, Butcher row, Eaſt Smithfield, ſlopſeller. (Howard, Shire lane
Palmer, W. Sonning, butcher. (Smart, Staple Inn
Riddell, A. and R. High ſtreet, Borough, grocers and tea dealers. (Wild, Warwick ſquare
Ruffield, J. Old Bond ſtreet, builder. (Taunton, Pump court
Renſhaw, F. Iſlington, timber merchant. (Leigh, Barband and Maſon, Crescent, New Bridge ſtreet
Stawell, T. Halbarton, dealer. (Scott and Howard, Great Ruſſell ſtreet, Bloomſbury
Scarſe, R. King's Lynn, brewer. (Gotobed, Browns, Gotobed, Norfolk ſtreet, ſtrand
Skegg, F. Davis ſtreet, Berkley ſquare, oilman. (Nelſon, Maddox ſtreet
Sherreff, A. Newman ſtreet, taylor. (Pike, Air ſtreet
Smith T. S. Prittlewell, victualler. (Palmer and Tomlinſon, Warnford court
Sawyer, T. Woolwich, victualler. (Pearce and Dixon Paternoſter row
Spraggon, J. and W. Graveſend, ſlopſellers. (Nind, Great Prescott ſtreet
Sedgwick, J. Mancheſter, manufacturer and cotton ſpinner. (Ellis, Curſitor ſtreet
Thurſton, H. Winchcomb, grocer. (Edmunds and Son, Exchequer office, Lincoln's Inn
Tredgold, R. Milland, Wincheſter, miller. (Hopkins, New Alresford
Thorne, T. Buxton, Manſell ſtreet, baker. (Holmes, Mark lane
Thomſon, A. Bow lane, factor, firm A. Thomſon and Co. (Crowder and Lavie, Frederick's place
Waller, J. Marriott, and Michael, Hightown, Briſtol, merchants. (Battye, Chancery lane
Wathams, W. Hereford, joiner. (Kinderley, Long, and Ince, Symond's Inn
Wilſon, G. and E. Dixey, late of Wardrobe place, Doctor's Commons, now of Piccadilly, opticians. (Vincent and Upton, New North ſtreet, Red lion ſquare
Wainwright, W. Liverpool, ironmonger. (Williamſon, Liverpool

DIVIDENDS ANNOUNCED.

Andrews, J. Alton, tallow chandler, &c. May 16, final
Amoyl, T. Lloyd, Shrewſbury, ſcrivener, May 23
Allen, J. St. Mary Axe, merchant, June 7
Andrews, G. Holybourne, turner. May 25
Arundall, J. Newbury, clothier, June 1
Augarde, J. and F. J. Alaincant, Oxford ſtreet, hoſiers, June 7
Aſhby, W. Northampton, ſadler June 7
Bryden, J. Charing Croſs, print ſeller, June 4
Bratt, C. Warrington, linen draper, May 26
Burden, W. Chatham place, ſcrivener, June 4
Brooke, F. W. Farrar, and R. Row, Baſinghall ſtreet, warehouſemen, June 7
Bamford, S. P. J. Cooke, and J. F. Clifford, Tiverton, worſted manufacturers, June 4
Brown, W. Wymondham, tanner. June 17
Branwhite, J. jun. Rochland, ſhopkeeper, June 6
Chipchaſe, R. Poultry, linen draper, May 28, final
Chepney, J. Oxford ſtreet, linen draper, partner with J. Summerſet, and J. Dawſon, May 24
Carter, J. Kennington Common, cow keeper, May 24
Cory, G. Great Yarmouth, upholſterer, May 28
Coles, J. Smithfield, banker and agent, June 7
Dean, J. Strand, lace man, May 28
Duff, J. Finſbury ſquare, merchant, June 8
Dixon, C. Fenchurch ſtreet, bruſh maker, June 4
Dornford, T. Philpot lane, wine merchant, May 28
Dring, W. and D. Brighthelmſtone, ſhopkeepers, June 7
Dagg, T. South Shields, ſhip owner, June 3
Emmott, J. H. and F. Browne, Old Jewry, wine merchants, joint eſtate, and ſeparate eſtate of Emmott, May 28
Earl, R. Chicheſter, ſpirit merchant, May 27
George, J. Piccadilly, draper, May 17
Gibbs, J. Wrotham, corn chandler, May 17
Gilbert, R. Reading, draper, May 24
Gosland, T. jun. White lion court, Birchin lane, and Belmont place, Vauxhall, merchant, June 14
Hobſon, J. Moorgate in Netherthong, Yorkſhire, dealer, May 18
Hope, P. Liverpool, merchant, May 24
Hopwood, J. Long Acre, lace man, June 11
Holygate, J. Mancheſter, manufacturer, May 27
Higgott, J. Birmingham, teaman, June 1
Hopwood, D. Union ſtreet, Mary le bone, grocer, June 11
Jackſon, B. Wentworth, corn dealer, June 6
Jamiſon, R. Bayley, Droitwich, miller, May 27
Jones, J. Birmingham, draper, May 28
Jackſon, N. Man, and G. Bartlett, Gerard ſtreet, ironmongers, June 7
Jones, T. and J. Harriſon, under the firm of Jones and Co. Ludlow, and of Harriſon and Co. High Holborn, manufacturers and glovers, June 4
Kerſhaw, J. Arnfield, cotton ſpinner, May 18
Kay, W. Birmingham, factor, June 1
Kirkpatrick, T. Church paſſage, Cateaton ſtreet, merchant, June 7
Landale, C. St. Martin's ſtreet, Leiceſter Fields, taylor, May 21
Long, G. Maldon, ſhopkeeper, May 14
Lambard, J. Fenchurch ſtreet, flour merchant, May 31
Loggin, W. and R. Slater, Newgate ſtreet, linen drapers, May 25
Langwith, J. Grantham, builder, June 9
Linſdale, E. York, draper, June 14
Like, T. Old Brompton, builder, June 25
Luncheſter, Ann, Sackville ſtreet, dealer, June 7
Long, G. Malden, ſhopkeeper, June 7
Mure, Hutchinſon, Robert, and William, Fenchchurch ſtreet, merchants, May 24
M'Knight, S. jun. Liverpool, merchant, May 20
Moſely, J. and J. Roſe, Birmingham, factors, firm Mews and Moſely, ſeparate eſtate of Roſe, May 25, final
Medley, Wm. Upper Thames ſtreet, timber merchant, May 28
Malcolm, S. Old Broad ſtreet, broker, June 14
Murr, Hugh, Liverpool, grocer, June 8
Needham, B. Doncaſter, ſacking manufacturer, May 27
Nicholls, T. Birmingham, grocer, &c. June 6
Nuthall, T. and J. Smethurſt, Salford, brewers, June 18
Paddey, C. W. Purcell, and J. Hargreaves, Congleton, cotton manufacturers, May 24
Preſton, R. Liverpool, merchants, May 26
Perry, J. and G. Rigg, Bread ſtreet, warehouſemen, June 7
Phillips, J. Totnes, ſhopkeeper, June 8
Parry, J. Birmingham, button and toy maker, June 6
Rowan, J. Burton on Trent, hawker, May 23
Ruſſell, J. Worceſter, dealer, May 16
Ruſſell, J. and E. W. Hartland, and T. Williams, Worceſter, merchants, May 20
Robinſon, S. Sheffield, ſciſſar ſmith, June 8
Richard, J. P. Liverpool, merchant, June 10
Robinſon, M. Liverpool, ſcrivener, June 9
Stewart, W. Doncaſter, hawker, June 14
Stain, J. Lubenham, farmer, May 26
Stephens, W. Abchurch lane, oyſter dealer, June 7
Sealy, W. jun. Rettendonon, farmer, May 27
Scott, A. Workington, mercer, June 7
Smith, T. Liverpool, woollen draper. May 30
Smith, G. Barnſley, grocer, &c. June 2
Smallwood, W. Greenfield ſtreet, Whitechapel, upholſterer, June 7
Sherringham, J. Great Marlborough ſtreet, paper ſtainer, June 11
Simpſon, J. Mancheſter, hat manufacturer, June 13
Stoddart, J. T. Errington and J. Errington, Newcaſtle, corn factors, June 7
Thomas, J. Bathwick, lodging houſe keeper, May 30
Turnbull, J. J. Forbes, R. Alien Crawford, and D. Shene, Broad ſtreet, merchants, ſeparate eſtates of Forbes and Turnbull, June 28
Vine, J. Holborn, linen draper, May 28
Wright, T. Berkeley, clothier, May 17
Wapſhott, T. Tufton ſtreet, carpenter, May 28
Wickens, L. St. Clement's church yard, haberdaſher, June 7
Wilſon, J. Strand, umbrella maker, May 28
Wheeley, J. Bankſide, Southwark, colour manufacturer, May 10
Watſon, W. Fenchurch ſtreet, merchant, May 28
Warner, A. Marlborough, ſtocking manufacturer, June 2
Whitaker, T. Colonade near Ruſſell ſquare, victualler, June 4
Wainwright, J. Liverpool, gun maker, June 1
Whillington, W. Bradford, clothier, June 4
Williams, H. Crickhowell, ſcrivener, June 4
Willion, J. Birmingham, builder, June 8
Yare, J. Oxford ſtreet, linen draper, May 3
Yate, J. T. Spencer Dun, S. Hilton Parker, and T. Yate, Liverpool, merchants, June 11

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

Names of Coals.	Mon. 2d.	Wed. 4th	Frid. 6th	Mond. 9th	Wed 10th	Frid. 13th	Mond. 18th	Wed 16th	Frid. 18d.	Mond. 23th	Wed. 27th
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Adair's Main					42 6			45 6	50		
Baker's Main											
Bedford Main								45 6			
Benton				43	43			45 6			
Biddick Main								48 6			
Bigg's Main		43 6		44	44	44	48 6		56		56
Bladon Main											
Blyth											
Boundry											
Bourn Moor		40 9			41 6	41		47		48	
Brandling				42	42 6						
Birtley											
Byker											
Byker, High & Low											
Cowpen								47			
Derwent						41 6		47 6			
Eden Main								46			
Eighton Main				42							
Flockton											
Greenwich Moor											
Haigh Moor								46 3			
Hartley					41 6	44 6					
Heaton Main		43 3		44	44 6	44		49	56		
Hebburn Main		43 3		44		41 3		50			
Holywell					41			45 6			
Kenton Main				43 3	43 6						
Lambton's Low dit.											
Lawson's Main									43		
Morley Hill											
Montague Main				42							
Mount Moor											
Murton											
Murton High Main											
Newbottle					40 6			46		46 9	
New Tansfield					43 6						
Pitt's Tansfield M.							44	50	56		
Primrose							42	47 9	49 6		
Pontop	42			44	43		43	47			
Pecey		44					41 9	45 6			48 3
Rectory		38		43				47	46 6		
Russel's Main					41 6			46			
Sheriff Hill											
South Moor											
Stanley Main											
St. David		34					44 6				
Team											
Tyne Main											
Usworth Main											
Walbottle Moor	37 6			41 9	41	41		46		48	
Walker								49			
Wall's End		44	44	45	45 3	45		50	56	56	
Warwick				38 6							
Wharton											
Willington		43 6		44		44					
Wylam Moor	37 6				40 6	40 6					
Wentworh				44 3							
Whitefield											
Wooler Main											

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

From the Returns received in the Week, ended MAY 21, 1803.

INLAND COUNTIES.

COUNTIES.	Wheat.		Rye.		Barley.		Oats.		Beans.		Peas.		Oatmeal.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Middlesex	60	3	34	0	25	1	24	5	32	3	36	4		
Surrey	62	1	34	0	25	4	22	3	33	6	35	0		
Hertford	56	4	35	6	25	6	2[illegible]	8	36	0	37	9		
Bedford	53	0	33	1	23	8	21	0	30	6				
Huntingdon	51	8			21	4	17	0	26	2	33	7		
Northampton	52	6	29	6	20	6	17	8	27	4	28	0		
Rutland	55	0			22	0	18	0	32	0			57	3
Leicester	56	0	31	1	22	7	19	2	32	4	31	1	34	2
Nottingham	62	4	38	0	26	10	19	2	33	0				
Derby	63	8			27	0	20	4	36	8	32	0	25	5
Stafford	63	5			28	5	21	4	35	5			27	9
Salop	59	11	40	4	25	10	21	8			34	4	63	7
Hereford	52	2	32	0	23	7	22	4	35	2	37	0	61	0
Worcester	55	1	29	3	24	8	25	6	34	4				
Warwick	59	4			25	10	21	11	36	6			34	11
Wilts	56	4			23	2	21	4	38	0	34	0		
Berks	60	0			23	4	23	3	32	10	38	0		
Oxford	54	11			22	9	20	8	29	11	33	10		
Bucks	53	3			22	3	20	6	30	7	34	0		
Brecon	55	11	33	6	24	10	16	0			28	0	34	8
Montgomery	57	11			22	5	18	9			33	7	38	2
Radnor	54	5			24	0	21	0			32	10	60	5

Maritime Counties.

Essex	59	0	33	6	23	8	25	0	30	4	31	0		
Kent	58	8			24	4	23	0	30	4	35	3		
Sussex	53	0			25	3	21	10						
Suffolk	56	10			21	9	20	2	26	7	29	5	49	0
Cambridge	52	8	32	0	22	6	16	7	26	11	33	0		
Norfolk	55	8			21	5	18	8	27	3	29	0		
Lincoln	53	3	35	0	22	6	16	10	28	11				
York	54	8	33	9	23	1	16	3	24	9	58	8	35	7
Durham	57	5					20	6						
Northumberland	51	9	37	0	22	8	18	3			34	0	14	9
Cumberland	64	10	51	1	29	0	24	6						
Westmorland	71	2	53	4	28	4	24	0					17	6
Lancaster	61	6			27	17	21	8	36	11	33	0	17	4
Chester	57	9			27	6	18	2					18	9
Flint	56	5			29	10								
Denbigh	62	8			28	8	21	6					35	7
Anglesea							13	6						
Carnarvon	64	0	42	0	26	0	16	6					31	9
Merioneth	64	2	44	0	28	8	20	0					34	5
Cardigan	58	10			18	3	12	0						
Pembroke	53	3			20	2	13	2						
Carmarthen	60	0			19	11	13	5						
Glamorgan	56	4			22	4	20	0						
Gloucester	56	8			25	8	25	2	32	10	40	5		
Somerset	57	4			23	3	20	10	30	0				
Monmouth	57	9			22	11								
Devon	61	5			22	11	19	1						
Cornwall	60	8			23	9	20	2						
Dorset	56	5			23	1	21	11	38	0				
Hants	56	11			23	2	21	8	34	5				

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

Days	Bank Stock.	3 per Ct. Red.	3 per Ct. Consols.	4 per Ct. Consols.	5 per Ct. Navy.	5 per Ct. Loyalty	Long Ann.	Short Ann.	Imp. 3 per Ct.	Imp. Ann.	India Stock.	Omnium.	5 per Ct. Irish	Consols for Act.	Tickets.
April 28	171	64 5/8	65 7/8	82 1/2	107 1/2	99 1/4	19 1/8				205 1/2		95 3/8	65 5/8	
29	171	63 1/4	64	82 1/4	100	98 3/4	19 1/8	4 1-16						64 1/4	
30	———	62 7/8	63	80 1/2	98 3/4	97 1/2	18 2/4						94 1/4		
May 2	———	63	63 5/8	80 7/8	99 1/4	98	18 15-16		61 7/8 ex.di.					63 5/8	
3	167	63 5/8	63 3/4	81 1/8	99 1/4	97 3/4	19				205			63 3/4	
4	———	63	64 1/2	80 1/2	99 1/8	98	18 15-16		62					64 1/2	
6	165 1/4	62	63	80 1/2	99	97 5/8	18 3/4	4 1-16						63	
7	———	64	65 1/4		99 1/4	98 1/4	19 1/8							65 1/4	
9	———	63 1/4	64 3/8	80 1/2	99	97 3/4			62 7/8					65 1/2	
10	———	63	64	80 1/4	99	97 3/4								64 7/8	
11	———	62 7/8	63 3/4	80 3/4	98 7/8	97 1/2	18 3/4	4	61 7/8		201 3/4			64	
12	165 1/4	63 7/8	64 1/8	80 1/2	99 5/8	98	18 13-16				201		94 1/2	64 1/4	
13	———	64 1/4	64 1/4	81 1/4	99 5/8	98 7/8	18 15-16		62 1/4					64 1/2	
14	———	62	61 1/4	79 1/2	98 1/4	97	18 15-16							61 1/2	
16	———	56 5/8	60 3/8	76 3/4	95 3/4	94 1/2	18 3/4		57 3/4					60 1/2	
18	153	58 1/4	59 1/2		94 1/2	93 1/4	17 1/4	3 13-16	57 1/8	10 3-16	182			59 3/4	
20	———	58 3/4	59 7/8	74 3/4	94 1/8	93 1/8	17 1/4		57 1/4					60	
21	———	58 5/8	59 5/8	74 1/2	94 1/4	93 1/4	17 5-16	3 7/8	57					59 3/4	
23	———	58 1/8	59 3/8	74 1/2	94 1/8	93 1/4	17 1/4	3 13-16	56 5/8	10 1/4	180			58 3/4	
24	146	57	58	73 1/4	93 3/8	92 7/8	16 7/8			10 1-16				58 1/2	
25	———	56 5/8	57 5/8	72 5/8	92 1/4	91 1/2	16 7/8		55					58 7/8	
26	———	47 1/4	57 7/8	72 1/2	92 5/8	91 5/8	16 7/8	3 13-16						58 7/8	
27	145	57 1/4	58	72 5/8	93 1/4	92 3/8	16 15-16		55 3/4	10					

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

TO OUR CORRESPONDENTS.

WE are once more under the pleasing necessity of publickly expressing our thanks to our eminently respectable Correspondent, who has favoured us with a drawing of, and communications respecting the new species of turnip, with which this number of our Magazine is embellished. But it is not merely for this embellishment that we are grateful, but on account of the benefit which we trust the public will derive from hence; for we are emboldened by the kindness of our Correspondents to think, and to say, that this number does not stand in need of any extraordinary embellishment to recommend it to the attention of the agricultural world. And indeed, should occasion call for it, we should not hesitate or fear to place this, or any of our late numbers, in competition with any publication of a similar nature that has hitherto appeared. And whether our Magazine shall or not continue to retain this degree of excellence, depends solely upon our Correspondents, who have it in their power to make it as entertaining, as instructive, and as worthy of themselves as they please. A single page, transmitted monthly, from only one half of the number of our present kind contributors, will constantly form a valuable quantum of materials.

The contents of Mr. Cocks's letter are very encouraging to Farmers to persevere in the cultivation of that most palatable of all vegetables, the Swedish turnip. We hope we ſhall soon again have occasion to thank Mr. Cocks for having imparted to us fresh information from the abundant source afforded by the superior system of husbandry practised in Sussex.

The course of crops recommended by that well known and able writer Mr. Middleton, demands the attention of every, both old fashioned and new fashioned, farmer.

Mr. R. Weston will of course pay due attention to the animadversions of Philalethes.

We feel no uneasiness on being told that we have two Correspondents who use the same signature, of "a Norfolk Farmer," we only say, that we should be very happy to be subjected to the confusion that might arise from having *twenty* such, with the same signature.